CurrentClin icalS trategies

PediatricHi storyandP hysical Examination

FourthEdition

Elizabeth K. Albright, MD

CurrentClinic alS trategiesP ublishing
www.ccspublishing.com/ccs

DigitalBookandUpdates

Purchasers of thi s book can dow nload the di gital book and updates a t t he CurrentClin ical StrategiesPu blishingI nternetsite : www.ccspublishing.com/ccs

CurrentClin icalStr ategiesPu blishing
27071C abotR oad
LagunaHills,California92653-7011
Phone:800-331-8227
Fax:800-965-9420
E-mail:in fo@ccspublishing.com
Internet:www. ccspublishing.com/ccs

Printedi nU SA ISBN1881528-93-6

Contents

MedicalDocum entation

PediatricH istory

Identifying D ata: P atient's nam e, age, sex ; si gnificant m edical condi tions, informant(parent).

Chief Co mpliant (CC): R eason that the chi ld i s seek ing m edical care and durationofthesy mptom.

HistoryofP resentIllness(H PI): D escribethec ourse ofthepati ent'si llness, includingw henandhow i tbegan,characterofthesy mptoms; aggravating or alleviating factors; pertinentposi tivesandnegati ves,past diagnostic testing.

PastM edicalH istory(P MH): M edicalprobl ems,hospi talizations,operati ons; asthma,di abetes.

PerinatalHi story: Gestati onalageatbi rth,obstetri calcom plications, typeof delivery,bi rthw eight,A pgarscores,com plications(eg,i nfection,j aundice), lengthofhospi talstay .

Medications: N amesanddosages.

Nutrition: Typeofdi et,am ounttak eneachfeed,changei nfeedi nghabi ts.

DevelopmentalHi story: Ageatattai nmentofi mportantm ilestones(w alking, talking,sel f-care).R elationships with siblings, peers, adults.S choolgradeand performance,behavi oralprobl ems.

Immunizations: U p-to-date?

Allergies: P enicillin,codeine?

FamilyH istory: Medicalprobl emsi nfam ily,i ncludingthepati ent'sdi sorder; diabetes,sei zures,asthm a,al lergies,cancer,cardi ac, renalorGI di sease, tuberculosis,sm oking.

Social H istory: Fam ily si tuation, al cohol, sm oking, drugs, sex ual acti vity. Parentall evelofeducati on.S afety:C hildcar seats,sm okedetectors,bi cycle helmets.

ReviewofS ystems(R OS)

General: Overal lheal th,w eightl oss,behavi oralchanges,fever,fati gue.

Skin: R ashes,m oles,brui sing,l umps/bumps,nai l/hairchanges.

Eyes: V isualprobl ems,ey epai n.

Ear,nose,thr oat: Frequency ofcol ds,phary ngitis,oti tism edia.

Lungs: Cough,shortnessofbreath,w heezing.

Cardiovascular: C hestpai n,m urmurs,sy ncope.

Gastrointestinal: N ausea/vomiting, spitting up,di arrhea,recurrentabdom i-nalpai n,consti pation,bl oodi nstool s.

Genitourinary: D ysuria,hem aturia,pol yuria,vagi naldi scharge,S TDs.

Musculoskeletal: W eakness,j ointpai n,gai tabnorm alities,scol iosis.

Neurological: H eadache,sei zures.

Endocrine: Grow thdel ay,pol yphagia,ex cessivethi rst/fluidi ntake,m enses duration,am ountoffl ow.

PediatricPhy sicalExamination

Observation: C hild's faci al ex pression (pai n), response to soci al overtures. Interactionw ithcaretak ersandex aminer. B odypos ition (l eaningforw ardi n sitting posi tion; epi glottitis, peri carditis). W eak cry (seri ous i llness), hi gh-pitched cry (i ncreased i ntracranial pressure, m etabolic di sorder); m oaning (seriousi llness, m eningitis), grunti ng (respi ratorydi stress).

Doesthechi ldappeartobe:

(1) W ell, acutely ill/tox ic, chronically ill, w asted, orm alnourished?
(2) A lertandacti veorl ethargic/fatigued?
(3) W ellhy dratedordehy drated?
(4) U nusualbody odors?

VitalSi gns: R espiratoryrate, bl oodpressure, pul se, tem perature.

Measurements: H eight, w eight; headci rcumference inchi ldren ≤ 2y ears; pl ot ongrow thchartsanddeterm inegrow thpercenti les.

Skin: C yanosis, j aundice, pal lor, rashes, sk inturgor, edem a, hem angiomas, café aulaitspots, nevi, M ongolianspots, hairdistribution, capillary refill (in seconds).

LymphN odes: Location, size, tenderness, m obilityandconsistency ofcervical, axillary, supraclavicular, andinguinalnodes.

Head: S ize, shape, asy mmetry, cephal ohematoma, bossi ng, m olding, brui ts, fontanelles (si ze, tensi on), di latedvei ns, faci alasy mmetry.

Eyes: Pupilsequal roundandreacti vetol ightandaccom modation (P ERRLA); extraocularm ovementsi ntact (E OMI); B rushfield's spots; epi canthic fol ds, discharge, conj unctiva; re d reflex, corneal opaci ties, cataracts, fundi ; strabismus (ey edevi ation), vi sualacui ty.

Ears: Pinnas (position, siz e), tympanic m embranes (landm arks, m obility, erythema, dul l, shi ny, bul ging), heari ng.

Nose: S hape, di scharge, bl eeding, m ucosa, patency .

Mouth: Li ps (thi nness, dow nturning, fi ssures, cl eftl ip), teeth, m ucusm embrane colorandm oisture (enanthem , E pstein'spearl s), tongue, cl eftpal ate.

Throat: Tonsils (ery thema, ex udate), postnasal dri p, hoarseness, stri dor.

Neck: T orticollis, ly mphadenopathy, thy roidnodules, positionoftrachea.

Thorax: S hape, sy mmetry, i ntercostalorsubstem alretracti ons.

Breasts: Turner stage, si ze, shape, sy mmetry, m asses, ni pple di scharge, gynecomastia.

Lungs: B reathingrate, depth, ex pansion, prol ongationofex piration, frem itus, dullnesstopercussi on, breathsounds, crack les, w heezing, rhonchi .

Heart: Location of apical im pulse. Regula r rate and rhy thm (RRR), first and secondheartsounds (S 1, S 2); gal lops (S 3, S4), m urmurs (l ocation, posi tion incy cle, i ntensitygrade 1-6, pi tch, effectof change of position, transmission). Comparisonofbrachi alandfem oralpul ses.

Abdomen: Contour, vi sibleperi stalsis, respi ratorym ovements, di latedvei ns, umbilicus, bow el sounds, bruits, hernia. Rebound tenderness, ty mpany; hepatomegaly, spl enomegaly, m asses.

Genitalia:

Male Gen italia: C ircumcision, hy pospadias, phimosis, si ze of testes, cryptorchidism, hy drocele, herni a, i nguinalm asses.

FemaleGen italia: I mperforatehy men, di scharge, l abialad hesions, cl itoral hypertrophy, pubertal changes.

RectumandA nus: Erythema, ex coriation, fi ssures, prol apse, imperforate anus. Analtone, m asses, tenderness, anal refl ex.

Extremities: Bow legs (infancy),k nockk nees(age2to3y ears).E dema (grade 1-4+),cy anosis,clubbing.Jointrangeofm otion,sw elling,redness,tenderness.A " click" felt on rotation of hipsi ndicatesdevel opmentalhi pdi slocation (Barlowm aneuver).E xtradi gits,si mianl ines,pi ttingofnai ls,fl atfeet.

SpineandB ack:S coliosis,ri gidity,pi lonidaldi mple,pi lonidalcy st,sacral hai r tufts;tendernessoverspi neorcostovertebral tenderness.

NeurologicalE xamination:

Behavior: Level ofconsci ousness,i ntelligence,em otionalstatus.

Motorsy stem: Gai t,m uscletone,strength(graded0to5).

Reflexes

Deep Tendon R eflexes: B iceps, brachi oradialis, tri ceps, patel lar, and Achillesreflex es(graded1-4).

SuperficialR eflexes:A bdominal,crem asteric,pl antarrefl exes

NeonatalR eflexes:B abinski,Landau, Moro,rooti ng,suck ,grasp,toni c neckrefl exes.

Developmental A ssessment: Delay ed abilities for age on developm ental screeningtest.

LaboratoryE valuation:E lectrolytes(sodi um,potassi um,bi carbonate,ch loride, BUN, crea tinine), C BC (hem oglobin, hem atocrit, W BC count, pl atelets, differential);X -rays,uri nalysis(U A).

Assessment:A ssignanum bertoeachprobl em,anddi scusseachprobl em separately.D iscussthe differential diagnosis, and givereasonsthatsupport thew orkingdi agnosis.Gi vereasonsforex cludingotherdi agnoses.

Plan: Describe therapeuticpl anforeachnum beredprobl em,i ncludingtesti ng, laboratorystudi es,m edications,anti biotics,andconsul tations.

PhysicalExaminationoftheN ewborn

GeneralA ppearance:O verallvi sual and auditory appraisalofthecom pletely undressed infant. W eak cry (serious illness), high-pitched cry (increased intracranial pressure, m etabolic di sorders), grunti ng (respi ratory di stress). Unusualbody odors.

VitalSi gns: Respiratoryrate(norm al40-60breaths/m in),heartrate(120-160 beats/minute),tem perature.

Head: Lacerati ons,caput,cephal ohematoma,sk ullm olding. Fontanelles(si ze, tension),headci rcumference.

Neck:F lexibilityandasy mmetry.

Eyes: Scleralhem orrhages,cataracts,redrefl ex,pupi lsi ze.

Mouth:P alpateforcl eftl ipandcl eftpal ate.

Respiratory: A crocyanosis, retractions, nasal fl aring, grunti ng. P alpation of claviclesforfractures.

Heart: P ositionof point ofm aximali mpulse,rhy thm,m urmurs.D istantheart sounds(pneum othorax).C omparisonofbrachi alandfem oralpul ses.

Abdomen: Asymmetry,m asses,fullness,um bilicus,hernias.Liverspan(m ay extend2.5cm bel owtheri ghtcostal m argin),spl eenspan,nephrom egaly.

MaleGen italia:H ypospadias,phi mosis,herni a,presence of both testes. Anal patency

Female Gen italia: I nterlabial m asses, m ucoid vaginal di scharge or bl ood streakeddi scharge(norm al).A nalpatency

Skin: P ink, cy anotic, pal e. Jaundi ce (abnorm al i n the fi rst day of l ife), m ilia (yellowpapul es),M ongolianspots(bl uishpatches).

Extremities: Extra digits,si mianl ines,pi lonidaldi mpleorcy st,sacral hai rtuft, hipdi slocation;a" click"fel tonrotati onofhi ps (Barlowm aneuver,devel opmentalhi pdi slocation).
NeurologicE xamination: Tone, acti vity, sy mmetryof ex tremitym ovement, symmetryo f fa cialm ovements, a lertness, co nsolability, M oro r eflex, su ck reflex,rootrefl ex,grasprefl ex,pl antarrefl ex.

ProgressN otes

Dailyprogressnotesshoul dsum marizedevel opments in the patient'shospi tal course, probl ems that rem ain acti ve, pl ans to treat those probl ems, and arrangementsfordi scharge.P rogressnotesshoul daddressever y problem ontheprobl eml ist.

ExampleP rogressN ote

Date/time:
Subjective:A nyprobl emsandsy mptomsshoul dbecharted.A ppetite, painorfussi nessm aybei ncluded.
Objective:
Generalappearance.
Vitals,tem perature,m aximumtem peratureoverpast24hours,pul se, respiratoryrate,bl oodpressure.Feedi ngs,fl uidI /O(i nputsandoutputs),dai lyw eights.
Physicalex am,i ncludingchestandabdom en,w ithparti cularattenti on toacti veprobl ems.E mphasizechangesfrom previ ousphy sical exams.
LaboratoryE valuation:N ewtestresul ts.C ircleabnorm alval ues.
Currentm edications: Li stm edicationsanddosages.
AssessmentandP lan:T hissecti onshoul dbeorgani zedby probl em.
Aseparateassessm entandpl anshoul dbew rittenforeachprobl em.

DischargeN ote

Thedi schargenoteshoul dbew rittenpri ortodi scharge.

Date/time:
Diagnoses:
Treatment:B rieflydescri betherapy provi dedduri nghospi talization, includinganti biotics,surgery ,andcardi ovasculardrugs.
StudiesPe rformed:E lectrocardiograms,C Tscan.
Dischargem edications:
Follow-upA rrangements:

DischargeSummar y

Patient'sN ameandM edicalR ecordN umber:
DateofA dmission:
DateofD ischarge:
AdmittingD iagnosis:
DischargeD iagnosis:
Attendingor W ardTeam R esponsiblefor P atient:
SurgicalP rocedures,D iagnosticTests,Inv asiveP rocedures:
History,P hysicalE xaminationandLabor atory Data:D escribethe course of thepati ent'sdi seaseupunti ltheti methatthepati entcam etothehospi tal, includingperti nentphy sicalex amandl aboratorydata.
Hospital C ourse: D escribe the course of the pati ent's i llness w hile in the hospital, i ncluding eval uation, treatm ent, m edications, and o utcome of treatment.
DischargedC ondition: Describe improvementordeteri orationi nthepati ent's condition,anddescri bethepresentstatusofthepati ent.
Disposition: Notethesituation to which the patientw illbedischarged(hom e), andindicatew how illtak ecareofthepatient.
DischargeM edications: List medications andi nstructionsforpati entontak ing them edications.
DischargeInstr uctionsand Follow-up Care: Dateofreturnforfollow -upcare atclinic;diet.
ProblemLi st: Li stal lacti veandpastprobl ems.
Copies:S endcopi estoattendi ng,cl inic,consul tants.

PrescriptionW riting

- Patient'snam e:
- Date:
- Drugnam eandpreparati on(eg,tabl etssi ze):Lasi x40m g
- Quantitytodi spense:#40
- Frequencyofadm inistration:S ig:1poqA M
- Refills:No ne
- Signature

ProcedureNote

A procedurenoteshoul dbew ritteni nthechartaftera procedure is performed. Procedurenotesarebri efoperati venotes.

ProcedureN ote

Dateandtim e:
Procedure:
Indications:
PatientC onsent:D ocumentthatthei ndications,ri sksandal ternativesto theprocedurew ereex plainedtotheparentsandpati ent.N otethatthe parentsandpati entw eregi ventheopportuni tytoask questi onsand thattheparentsconsentedtotheprocedurei nw riting.
Labtests: R elevantl abs,suchastheC BCandel ectrolytes.
Anesthesia: Local w ith2% l idocaine.
DescriptionofP rocedure:B rieflydescri betheprocedure,i ncluding sterileprep,anesthesi am ethod,pati entposi tion,devi cesused,anatomicl ocationofprocedure,andoutcom e.
ComplicationsandE stimatedB loodLoss(E BL):
Disposition:D escribehow thepati enttol eratedtheprocedure.
Specimens:D escribeany speci mensobtai nedandl abteststhatw ere ordered.

DevelopmentalM ilestones

Age	Milestones
1m onth	Raisesheadsl ightlyw henprone;al ertstosound;regards face,m ovesex tremitiesequal ly.
2-3 months	Smiles,holdsheadup,coos,reachesforfam iliarobjects, recognizesparent.
4-5 months	Rollsfronttoback andback tofront;si tsw ellw hen propped;l aughs,ori entstovoi ce;enj oysl ookingaround; graspsrattl e,bearssom ew eightonl egs.
6m onths	Sitsunsupported;passescubehandtohand;babbl es; usesrak inggrasp;feedssel fcrack ers.
8-9 months	Crawls,crui ses;pul lstostand;pi ncergrasp;pl ayspat-a-cake;feedssel fw ithbottl e;si tsw ithoutsupport;ex plores environment.
12 months	Walking,tal kingafew w ords;understandsno;say s mama/dadadi scriminantly;throw sobj ects;i mitates actions,m arksw ithcray on,dri nksfrom acup.

Age	Milestones
15-18 months	Comesw hencal led;scri bbles;w alksback ward;uses4-20 words;bui ldstow erof2bl ocks.
24-30 months	Removesshoes;fol lows2stepcom mand;j umpsw ith bothfeet;hol dspenci l,k nowsfi rstandl astnam e;k nows pronouns.P arallelpl ay;poi ntstobody parts,runs,spoon feedssel f,copi esparents.
3y ears	Dressesandundresses;w alksupanddow nsteps;draw s aci rcle;k nowsm orethan250w ords;tak esturns;shares. Grouppl ay.
4y ears	Hops,sk ips,catchesbal l;m emorizessongs;pl ays cooperatively;k nowscol ors;usespl urals.
5y ears	Jumpsoverobj ects;pri ntsfi rstnam e;k nowsaddressand mother'snam e;fol lowsgam erul es;draw sthreepartm an; hopsononefoot.

12D evelopmentalM ilestones

CardiovascularDi sorders

ChestPain

ChiefCo mplaint:C hestpai n.

History of P resent Illness: D uration of chest pai n, l ocation, character (squeezing, sharp, dul l). P rogression of pai n, freq uency, aggravating and relieving factors (i nspiration, ex ertion, eati ng). W eight l oss, fever, cough, dyspnea, vom iting, hear tburn, abdom inal pai n. S chool functi on and attendance. Relationshipofpai ntoacti vity(atrest, during sleep, during exercise). Doesthepai ni nterferew iththepati ent'sdai lyacti vities? Have favorite sports orotheracti vitiesconti nued?

CardiacTesting: R esultsofpri oreval uations,E CGs,echocardi ograms.

PastM edicalH istory:E xercisetol erance,di abetes,asthm a,traum a.

Medications:A spirin.

FamilyHisto ry:H eartdi sease,m yocardiali nfarction,angi na.

SocialH istory:S ignificantl ifeevents,stresses,recentl osses orseparati ons. Elicitdrugs,sm oking.

HistoricalFindingsfor C hestP ain	
Acutepai n?	Abdominalpai n,l imbpai n,head-
Firsttim e?	aches?
Systemicsy mptoms?	Light-headedness,tetany ,cram ps,
Durationo fco mplaints?	dizziness?
Exertional?	Dermatomaldi stribution?
Syncope?P alpitations?	Aggravatedby ri singfrom supi ne
Cough?	position?
Localized?	Poorschool attendance?
Reproducible?H ow?	Stressfull ifeevents?
Associatedsy mptoms?	

PhysicalE xamination

General:V isiblepa in,apprehensi on,di stress.N otew hetherthepati entl ooks "ill"orw ell.P ositionsthataccentuateorrel ievethepai n.

Vital Si gns: P ulse (tachy cardia), B P, respi rations (tachy pnea), tem perature. Growthchartandpercenti les.

Skin: Co lde xtremities,p allor.

Chest: Chestw alltenderness. S welling, traum a, derm atomal lesions, breast development,gy necomastia,x iphoid processtenderness. Crackles,rhonchi , wheeze.

Heart: Fi rst and second heart sounds;thi rdheartsound(S 3),S 4gal lop(m ore audiblei nthel eftl ateralposi tion),m urmur.

Abdomen:B owelsounds,tenderness,m asses,hepatom egaly, splenomegaly.

Back:V ertebralcol umndeform ities,tenderness.

Extremities:U nequalordi minishedpul ses(aorti ccoarctati on).

LaboratoryE valuation:E lectrolyte,C BC,chestX -ray.

DifferentialD iagnosisofC hestP ain	
MusculoskeletalD isorders Costochondritis Chestw allsyndrom e Tietzesyndrom e Xiphoidcarti lagesyndrom e Stitch Precordialcatchsyndrom e Slippingri bsyndrom e **IdiopathicDiso rders**:P sychogenic, hyperventilation **BreastD isorders:**Gynecom astia, fibrocysticchanges	**CardiovascularD isease** Pericarditis Leftventri cularoutfl ow obstruction,aorti cm urmur Dysrhythmias **PulmonaryD isorders**:P neumonia, pneumothorax,asthm a **GastrointestinalD isorders**: Esophagitis,gastroesophageal refl ux, pepticul cerdi sease **Vertebral/RadicularD isorders** Spinalstenosi s Herniateddi sk Vertebralfracture

DyspneaandC ongestiveH eartFailur e

ChiefCo mplaint:S hortnessofbreath.

History of P resent Illness: R ate of onset of dy spnea (gradual , sudden), dyspnea on exertion, chest pai n. P ast epi sodes, aggravati ng or rel ieving factors,cough,fever,drugal lergies.D ifficultyk eepingupw ithpeersduri ng play.Feedi ngdi fficulty, tachypneaordi aphoresisw ithfeedi ngs,di minished volumeoffeedi ng,prol ongedfeedi ngti me.P oorw eightgai n.

PastM edicalH istory:H ypertension,asthm a,di abetes.

Medications:B ronchodilators,di goxin,furosem ide.

PastTr eatmentor Testing: Cardiactesting,x -rays,E CGs.

PhysicalE xamination

GeneralA ppearance: Respiratory distress, dyspnea,pal lor.N otew hetherthe patientl ooks “ill”or well.

Vital Si gns: B P (supi ne and upri ght), pul se (tachy cardia), tem perature, respiratoryrate(tachy pnea),grow thpercenti les,grow thdefi ciency.

HEENT: Jugul arvenousdi stention.

Chest: I ntercostal retracti ons, dul lness to percussi on, stri dor, w heezing, crackles,rhonchi .

Heart: Lateral di splacement of poi nt of m aximal i mpulse, hy perdynamic precordium;i rregular,rhy thm;S 3gal lop,S 4,m urmur.

Abdomen:H epatomegaly,l ivertenderness,spl enomegaly.

Extremities:C oolex tremities,edem a,pul ses,cy anosis,cl ubbing.

LaboratoryE valuation: O_2 saturati on, chest x -ray (cardi omegaly, effusi ons, pulmonaryedem a).

Differential Diag nosis: H eart fai lure, forei gn body aspi ration, pneum onia, asthma,pneum othorax,hy perventilation.

Hypertension

ChiefCo mplaint:H ighbl oodpressure.

HistoryofP resentIllness: Current blood pressure,ageofonsetof hypertension. H eadaches, vom iting (i ncreased i ntracranial pr essure), dy suria, nocturia,enuresi s,abdom inalpai n(renal di sease).Grow thdel ay,w eightl oss, fevers,di aphoresis,fl ushing,pal pitations(pheochrom ocytoma).

PerinatalHi story: Neonatalcourse, umbilicalartery /veincatheteriz ation(renal arterystenosi s).

Past M edical History: Lead ex posure; i ncreased appeti te, hy peractivity, tremors,heati ntolerance(hy perthyroidism).

Medications Associated with H ypertension: Oral contracepti ves, corticosteroids,cocai ne,am phetamines,nonsteroi dalanti inflammatoryd rugs.

Family H istory: H ypertension, preeclampsia, renal di sease, pheochromocytoma.

SocialH istory: Tobacco,al cohol.

PhysicalE xamination

GeneralA ppearance:C onfusion,agi tation(hy pertensiveencephal opathy).

VitalSi gns:T achycardia(hy perthyroidism),fever(connecti veti ssuedi sorder). BPi nal lex tremities,pul se,asy mmetric,respi ratoryrate.

Skin: P allor(renal disease), ca fé au l ait spots, hy popigmented l esions (V on Recklinghausen's di sease, tuberous scl erosis), l ymphedema (T urner's syndrome), rashes(connecti veti ssuedi sease), stri ae,hi rsutism (C ushing's syndrome), pl ethora(pheochrom ocytoma).

HEENT: P apilledema, thy romegaly(hy perthyroidism), m oonfaces(C ushing's syndrome); w ebbingoftheneck (T urner'ssy ndrome, aorti ccoarctati on).

Chest: C rackles (pul monary edem a), w heeze, intercostal brui ts (aorti c coarctation);buffal ohum p(C ushing'ssy ndrome).

Heart:D elayed radial tofem oralpul ses(aorti ccoarctati on).Lateral lydi splaced apicali mpulse(ventri cularhy pertrophy),m urmur.

Abdomen: Bruit below costal m argin (renal artery stenosi s); M asses (pheochromocytoma, neurobl astoma, W ilms'tum or). pul satingaorti c m ass (aortic aneurysm), enlarged k idney (pol ycystic kidney d isease, hydronephrosis);costovertebral angl etenderness;truncal obesi ty (Cushing's syndrome).

Extremities:E dema(renaldisease),jointsw elling,joint tenderness (connective tissue di sease). T remor (hy perthyroidism, pheochrom ocytoma), fem oral bruits.

Neurologic:R apidreturnphaseofdeeptendonrefl exes(hy perthyroidism).

LaboratoryE valuation:P otassium,B UN,creati nine,gl ucose,uri c acid, CBC. UAw ithm icroscopic analysis(R BCcasts,hem aturia,protei nuria).24hour urineform etanephrine;pl asmacatechol amines(pheochrom ocytoma),l ipid profile.E chocardiogram,E CG,renal ul trasound.

ChestX -ray:C ardiomegaly,i ndentationofaorta(coarctati on),ri bnotchi ng.

DifferentialD iagnosisofH ypertension	
Renal	
Chronicpy elonephritis	Segmentalhy poplasia
Chronicgl omerulonephritis	Ureteralobstructi on
Hydronephrosis	Renaltum ors
Congenitaldy splastick idney	Renaltraum a
Multicystick idney	Systemicl upusery thematosus (otherconnecti veti ssuedi s-eases)
Solitaryrenal cy st	
Vesicoureteralrefl uxnephropathy	
Vascular	
Coarctationoftheaorta	Neurofibromatosis
Renalartery l esions	Renalvei nthrom bosis
Umbilicala rteryca theterizationw ith thrombusform ation	Vasculitis
Endocrine	
Hyperthyroidism	Pheochromocytoma
Hyperparathyroidism	Neuroblastoma,gangl ioneuro-blastoma,gangl ioneuroma
Congenitaladrenal hy perplasia	Diabeticnephropathy
Cushingsy ndrome	Liddle'ssy ndrome
Hyperaldosteronism	
CentralN ervousS ystem	
Intracranialm ass	Braini njury
Hemorrhage	Quadriplegia
EssentialH ypertension	
Lowreni n	Highreni n
Normalreni n	

PulmonaryDis orders

WheezingandA sthma

ChiefCo mplaint:W heezing.
History of P resent Illness: Onset, durati on and progr ession of w heezing; currentandbasel inepeak fl owrate;severi ty ofattack com paredtoprevi ous episodes;fever,frequency ofhospi talizations;hom enebul izeruse;cough.
Aggravatingfactor s:E xercise, coldai r,vi ralorrespi ratoryi nfections,ex posure todustm ites,ani maldander.S easonsthatprovok esy mptoms;forei gnbody aspiration.
PastM edicalH istory: Previous episodes,pneum onia,recurrentcroup,al lergic rhinitis,foodal lergies.B aselinearteri albl oodgas results; pulmonaryfuncti on testing.
PerinatalHi story: Prematurity(bronchopul monarydy splasia),
FamilyHisto ry:A sthma,allergies,hay fever,atopicderm atitis.

PhysicalE xamination
General A ppearance:R espiratorydi stress,anx iety,pal lor.N otew hetherthe patientlo oksw ell,ill,o rso mnolent.
Vital Si gns:P eakex piratory flowrate(P EFR).T emperature,respi ratoryrate (tachypnea),depthofrespi rations,pul se(tachy cardia),B P (widenedpul se pressure),pul susparadox us(> 15m mHgi s significantpul monarycom promise).
Skin: Fl exuralecz ema,urti caria.
Nose:N asalfl aring,chroni crhi nitis,nasal pol yps.
Mouth:P haryngealery thema,peri oralcy anosis,grunti ng.
Chest: S ternocleidomastoid m uscle con tractions, i ntracostal retracti ons, supraclavicular retracti ons, barrel chest. E xpiratory w heeze, rhonchi , decreasedbreathsounds,prol ongedex piratoryphase.
Heart: D istant heart sounds, t hird heart sound (S 3); i ncreased i ntensity of pulmoniccom ponentofsecondheartsound(pul monaryhy pertension).
Abdomen:R etractions,paradox icalabdom inalw allm otion(abdom enri ses on inspiration),tenderness.
Extremities:C yanosis,cl ubbing,edem a.
LaboratoryE valuation:C BC,el ectrolytes.P ulmonaryfuncti on tests, urinalysis.
ABG:R espiratoryal kalosis,hy poxia.
ChestX -ray: Hyperinflation,fl atteningofdi aphragms;sm all,el ongatedheart.

DifferentialD iagnosisofW heezing	
Infant	**OlderCh ild**
Vascularri ng Tracheoesophagealfi stula Gastroesophagealrefl ux Asthma Virali nfection(bronchi olitis,upper respiratorytracti nfection) Pertussis Cysticfib rosis Bronchopulmonarydy splasia Congenitalheartdi sease	Asthma Aspiration(refl ux,forei gnbody) Epiglottitis Laryngotracheobronchitis(croup) Cysticfib rosis Hypersensitivitypneum onitis Tuberculosis Tumor Alpha$_1$-antitrypsindefi ciency Vocalcorddy sfunction

StridorandO ropharyngealO bstruction

ChiefCo mplaint: D ifficultybreathi ng.

HistoryofP resentIllness: T imeofonsetofstri dor,respi ratorydi stress. Fever, sore t hroat, h eadache, ma laise. V oice c hanges (m uffled voi ce), drool ing. Hoarseness,ex posuretoi nfections.T raumaorprevi oussurgery .

Increasedstri dorw ithstress; w orseningi n t he supi neposi tion; i mprovement with the neck ex tended (congeni tal l aryngomalacia). C ough, cy anosis, regurgitation, chok ing w ith feedi ngs, drool ing, forei gn body . History of intubation(subgl otticstenosi s),hem angiomas.

Perinatal H istory: A bnormal posi tion i n utero, forceps del ivery, shou lder dystocia.R espiratorydi stressorstri doratbi rth.

OropharyngealO bstruction	**Stridor**
Fever,sorethroat,headache Muffledvoi ce Craniofacialanom alies Cutaneousabnorm alities Neurologicsy mptoms	Gradualonset Acuteonset,fever Worsensi nsupi neposi tion Perinataltraum a Methodofdel ivery Presentatbi rth Feedingdi fficulties Previousi ntubation

PhysicalE xamination

GeneralA ppearance: A dequacyofox ygenationand ventilation, airwaystability . Anxiety, restl essness, fati gue, obtundati on. Grunti ng respi rations, m uffled voice,hoarseness,stri dor.

VitalSi gns: R espiratoryrate, tachypnea, shal lowbreathi ng. P ulseox imetry. Tachycardia,fever.Grow thpercenti les.

Head: C ongenitalanom alies.

Skin:P erioralcy anosis,nai lcy anosis,cl ubbing.
Nose: Na salfla ring.
Mouth:B ifiduvul a,cl eftpal ate.S ymmetricalpal atem ovement. Briskgagrefl ex, tonsilsy mmetry.T onguesy mmetry,m ovementi nal ldi rections,m asses.
Neck:M asses,ex ternalfi stulas,m id-linetrachea.
Heart:M urmurs,abnorm alpul ses,asy mmetricbl oodpressures.
Chest:W allm ovementandsy mmetry,retract ions, chestdi ameter,accessory muscleuse(severeobstructi on),hy perresonance,w heezes.
Abdomen:R etractions,paradox icalabdom inal wallm otion(abdom enri seson inspiration),tenderness.
Extremities:C yanosis,cl ubbing,edem a.

Anxiety,fati gue,l ethargy Cyanosis Tachypnea Hyperpnea Shallowbreaths Pulseox imeter< 95% Poorgrow th Clubbing Heartm urmur Congenitalheadandneck anomalies Bifiduvul a Enlargedtonsi l(s) Neckm ass Asymmetricchestex pansion Retractions	Increasedanteroposteri orchestdi ameter Accessorym uscleuse Mouth-breathing Grunting,nasal fl aring Muffledvoi ce Hyponasalspeech Hypernasalspeech Low-pitched,fl utteringsound Aphonia Quiet,m oststri dor Stridor Asymmetricw heezes Neckex tended Opisthotonicposture Torticollis

DifferentialD iagnosisofOr opharyngealObstr uction	
Micrognathia PierreR obinsyndrom e TreacherC ollinssyn drome Macroglossia Downsyndrom e Beckwith-Wiedemannsyndrom e Lymphangioma Hemangioma Lingualthyroi d Tonsillitis/hypertrophy:B acterial, viral Uvulitis Peritonsillara bscess	Retropharyngealabscess Parapharyngealabscess Hemangioma Lymphangioma Ranula Lymphoma Lymphosarcoma Rhabdomyosarcoma Fibrosarcoma Epidermoidcarci noma Adenoidalhypertrophy Palatalhypotoni a Obesity

DifferentialD iagnosisof Stridor	
Neonatal	**Older Child**
Laryngomalacia Subglotticstenosi s Webs Laryngealcysts Trachealstenosi s Tracheomalacia Trachealcarti lageri ngdefect Laryngeal/trachealri ngcal cification Vascularri ng Pulmonarysl ing Innominatearterytracheal com pres-sion Vocalcordparal ysis(A rnold-Chiari malformation,Dandy-W alkercyst, recurrentl aryngealnervei njury) Tumor Trauma(i ntubation,therm ali njury, corrosive,gastr icsecr etions)	Oropharyngeali nfection(peri tonsillar abscess,retropharyngeal abscess, tonsillitis) Virali nfections(croup) Epiglottitis Bacterialtrachei tis Aspirated/swallowedforei gnbody Tumor(hem angioma,l ymphangioma)

Hoarseness

ChiefCo mplaint:H oarseness.

HistoryofP resentIllness: Age and timeofonset,durati onofsy mptoms,rate ofonset,respi ratorydi stress.Fever,hem angiomas,sorethroat;pr olonged loudcry ing or screaming(vocal chordpol ypsornodul es).T raumaorprevi ous surgery;ex posuretoi nfections,ex acerbatingorrel ievingfactors.

Perinatal Hi story: A bnormal posi tion i n utero, shoul der dy stocia, hyperextended neck duri ng del ivery (ex cessive neck tracti on).Respiratory distressorstri doratbi rth.

PastM edicalH istory: Intubation(subgl otticstenosi s);pri orepi sodesofcroup, upper respi ratory tract i nfections. N eurologic di sorders (hy drocephalus, Arnold-Chiarim alformation),traum a,previ oussurgery .

PhysicalE xamination

GeneralA ppearance:H oarseness,abnor malsounds/posture,m uffledvoi ce; hyponasalspeech,hy pernasalspeech,qui et, moist stridor, inspiratory stridor, biphasicstri dor;tachy pnea.

VitalSi gns: Respiratoryrate(tachy pnea),tachy cardia,te mperature.D elayed growthparam eters.

Mouth:T onguesy mmetry,m ovementi nal Idi rections,m asses.C leftl ip,cl eft palate,bi fiduvul a, enlargedtonsi l(s).M outh-breathing,grunti ng,nasal fl aring;

Neck:C ongenitalanom alies;neck m ass,m assesor external fistulas,m id-line trachea.

Cardiac:M urmurs,asy mmetricbl oodpressures.

Chest: A symmetric chest ex pansion, retract ions, i ncreased anteroposteri or chestdi ameter;accessory m uscleuse,abnorm alvocal frem itus, wheezes, asymmetricw heezes;upri ghtposture,neck ex tended,opi sthotonicposture, torticollis.

Extremities:C yanosis,cl ubbing.

Neonatal	**Older Child**
Laryngomalacia Webs Subglotticstenosi s Cysticle sions Excessivesecr etions(fistulas, gastroesophagealrefl ux) Vasculartum ors(hem angioma, lymphangioma) Criduchatsy ndrome Vocalcordparal ysis Vocalcor dtr auma Hypothyroidism,hy pocalcemia, Farberdi sease Virali nfection(l aryngitis,croup)	Postnasaldri p Epiglottitis Recurrentvoi ceabuse(cord polyps,nodul es) Siccasy ndromes Neoplasia(papillom a,hem an-gioma) Trauma(postsurgi cal,i ntubation) Gaucherdi sease, mucopolysaccharidosis Williamssy ndrome,Co rneliad e Langesy ndrome Conversionreacti on

22H oarseness

InfectiousDi seases

Fever

ChiefCo mplaint: Fev er.
HistoryofP resentIll ness: Degreeoffever;ti meofonset,patternoffever; cough, sputum , sore throat, headache, abdom inal pain, ear pai n, neck stiffness,dy suria;vom iting,rash,ni ght sweats.D iarrhea,boneorj ointpai n, vaginaldi scharge.
PastM edicalH istory: I llcontacts.E xposuretom ononucleosis;ex posureto tuberculosis or hepati tis; tubercul in sk in test ing; travel hi story, ani mal exposure;recentdental procedure.
Medications:A ntibiotics,anti convulsants.
Allergies: Dr uga llergies.
FamilyH istory:F amilialM editerraneanfever,streptococcaldisease,conne c-tiveti ssuedi sease.
SocialH istory:A lcoholuse,sm oking.
ReviewofS ystems:B reaksi nthesk in(i nsectbi tes or stings),w eightl oss, growthcurvefai lure.P revioussurgery ordental w ork.H eartm urmur,A IDS riskfactor s.

HistoricalF indingsin F evero fUn knownOr igin
Skinbreak s?P unctureorl aceration. Insectbi tes?T ickex posure,fl iesorm osquitoes. Unusualorpoorl ypreparedfoods?R awfi sh,unpasteuri zedm ilk. Onset,peri odicity,tem peraturecurve,w eightl oss,school absence? Localizedpai n? Feverpattern? Exposuresortravel ? Pets?K ittenex posure,ex posuretootherani mals. Drugs?A nym edication.
Reviewofsy stems?R ashes,j ointcom plaints,cough,bow elm ovements. Blood,uri ne,stool ,andthroatcul tures? Completebl oodcount?I nflammatorydi sordersusual lyl eadtoari sei n leukocytecount.Fal lingcountssuggestam arrowprocess. Screeningl aboratoryprocedures?R isei nsedi mentationrate. Tuberculinsk intestw ithcontrol s?

PhysicalE xamination
GeneralA ppearance: Lethargy ,tox icappearance.N otew hetherthepati ent looks “ill”o rw ell.
Vital Si gns: T emperature (fever curve), respi ratory rate (tachy pnea), pul se (tachycardia). Hypotension (sepsis), hy pertension (neuroblastoma, pheochromocytoma).Grow thandw eightpercenti les.
Skin: R ashes, nodul es, sk in break s, brui ses, pal lor. I cterus, spl inter hem - orrhages;delay edcapillary refill, petechia (septic emboli,m eningococcemia),

ecthyma gangrenosum (purpuri c pl aque of P seudomonas). P ustules, cellulitis,fur uncles,abscesses.

LymphN odes: Cervical,supraclavicular,ax illary,inguinaladenopathy .

Eyes: Conjunctivalery thema,retinalhem orrhages,papilledem a.

Ears:T ympanicm embraneinflam mation,decreasedm obility.

Mouth:P eriodontitis,si nustenderness;phary ngealery thema,ex udate.

Neck: Lymphadenopathy,neck ri gidity.

Breast:T enderness,m asses,di scharge.

Chest:D ullnesstopercussi on,rhonchi ,crack les.

Heart:M urmurs(rheum aticfever,endocardi tis,m yocarditis).

Abdomen:M asses,l ivertenderness, hepatomegaly, splenomegaly;ri ghtl ower quadrant tenderness (appendi citis). C ostovertebral angl e tenderness, suprapubictenderness(uri narytracti nfection).

Extremities: Wounds;I Vcathetertenderness(phl ebitis)j ointorbonetenderness (septi c arthri tis). Osl er's nodes, Janew ay's l esions (e ndocarditis). Clubbing,vertebral tenderness.

Rectal: P erianal sk in tags, fi ssures, anal ul cers (C rohn di sease), rectal flocculence,fi ssures,m asses,occul tbl ood.

Pelvic/Genitourinary: Cervicaldi scharge,cervi calm otiontenderness,adnex al tenderness,adnex alm asses,geni talherpesl esions.

Completebl oodcount,i ncluding leukocytedi fferentialandpl atelet count	Seruml actate
Electrolytes	Culturesw itha ntibioticse nsitivities
Arterialbl oodgases	Blood
Bloodureani trogenandcreati nine	Urine
Urinalysis	Wound
INR,parti althrom boplastinti me, fibrinogen	Sputum,drai ns
	Chestx -ray
	Computedtom ography,m agneticreso-nancei maging,abdom inalX -ray

DifferentialD iagnosisofFev er

InfectiousD isease(50% ofdiagn oses)

Localizedl nfection

Respiratorytract

Upper–rhinitis,pharyngi tis,si nusitis

Lower--pneumonia,bronchi tis,bronchi ectasis,forei gnbody

Urinarytracti nfection

Osteomyelitis

Meningitis,encephal itis

Abdominalabscess,appendi citis

Generalizedl nfection

Common--Epstein-Barr vi rus, enteri c i nfection (S almonella, Y ersinia speci es), cat-scratchdi sease,tubercul osis,hepati tis,cytom egalovirus

Unusual--tularemia, b rucellosis, le ptospirosis, Q f ever, L yme d isease, syp hilis, toxoplasmosis

Collagen/ConnectiveT issueD isorders
Juveniler heumatoidar thritis
Kawasakisyndr ome
Systemicl upus
Rheumaticfever
Other:V asculitissyndrom es,B ehçet'sdi sease,m ixedconnecti veti ssuedi sease

Neoplasia
Lymphoreticularm alignancies
Sarcomas
InflammatoryB owelD isease
Crohndisease

PeriodicFev er
Recurrentvi rali nfections
Cyclicneutropeni a,fam ilialM editerraneanfever(serosi tis,arthri tis), "pharyngitisw ith aphthousstom atitis"(Marshalls yndrome),B orreliain fection,f amiliald ysautonomia
Pseudo-feverofU nknownO rigin: Prolongedl ow-gradefeversw ithoutfi ndingson examination,m ultiplevaguecom plaints,norm all aboratorytests

CoughandPneumonia

ChiefCo mplaint:C ough
HistoryofP resentIllness: D urationofcough,fever.S putumcol or,quanti ty, consistency. S ore t hroat, rhi norrhea, headache, ear pai n; vom iting, chest pain,hem optysis.T ravelhi story,ex posuretotubercul osis,tubercul intesti ng. Timingofthecough,frequency ofcough; coughcharacteri stics.D ry," brassy" cough(tracheal orl argeai rwayori gins).C oughthati s m ostnotabl e w hen attentioni sdraw nto it (psychogeniccough).E xposuretootherpersonsw ith cough.
PastM edicalH istory:P revioushospi talizations,pri orradi ographs.D iabetes, asthma,i mmunodeficiencies,chroni cpul monarydi sease.
Medications:A ntibiotics
Immunizations:H i nfluenzae,streptococcal i mmunization.
Allergies: Dr ugAlle rgies
PerinatalHi story:R espiratoryd istresssy ndrome,bronchopul monaryd ysplasia, congenitalpneum onias.
Psychosocial H istory: Daycare or school attendance, school absences, stressorsw ithinthefam ily,tobaccosm oke.
FamilyH istory:A topy,asthm a,cy sticfi brosis,tu berculosis,recurrenti nfections.
Reviewof Systems: General stateofheal th;grow thanddevel opment;feedi ng history,conj unctivitis,chok ing,abnorm alstool s,neurom uscularw eakness.

PhysicalE xamination
General A ppearance: R espiratory di stress, cy anosis, dehy dration. No te whetherthepati entl ooks "ill"w ell.
VitalSi gns:T emperature(fever),respi ratoryrate (tachypnea), pulse (tachycardia),B P,hei ghtandw eightpercenti les.
Skin:E czema,urticaria.
LymphN odes: Cervical,ax illary,inguinally mphadenopathy
Ears:T ympanicm embraneery thema.
Nose: Na salp olyps.

26C oughandP neumonia

Throat: P haryngeal cobblestone follicles, phary ngeal ery thema, masses, tonsillare nlargement.
Neck: Rigidity ,m asses,thy roidm asses.
Chest: C hestw alldeform ities, asymmetry,unequal ex pansion.I ncreasedvocal fremitus, d ullness to percussi on, w heezing, rhonchi , crack les; bronchi al breathsoundsw ithdecreasedi ntensity.
Heart: T achypnea, gal lops, m urmurs (rheum atic fever, endoc arditis, myocarditis).
Abdomen: H epatomegaly,spl enomegaly.
Extremities: C yanosis,cl ubbing.
Neurologic: D ecreasedm entalstatus,gagrefl ex,m uscletoneandstrength, swallowingcoordi nation.
LaboratoryE valuation: C BC,el ectrolytes,B UN,creati nine;O_2saturation,UA . WBC(> 15,000cel ls/dL),bl ood cultures.S putumordeeptracheal aspi ratefor Gram'sstai nandcul ture.T uberculinsk intest(P PD),cul turesandfl uorescent antibodytechni quesforrespi ratoryvi ruses.
ChestX -ray: S egmentalconsol idation,ai rbronchogram s,atel ectasis,pl eural effusion.

Infant	Toddler/YoungS chool-Age	OlderS chool-Age/Adolescent
Infections Viral/bacteriali nfections Tuberculosis Gastroesophagealre-flux Anomalies Vascularri ng Innominatearterycom -pression Tracheoesophageal fistula Pulmonarysequestra-tion Subglotticstenosi s Interstitialpneum onia Desquamativei nterstiti-altpneum onitis Lymphocytici nterstitial pneumonitis Asthma Cysticfi brosis Ciliaryd yskinesiasyn-dromes Immunodeficiency	Viralin fections Sinusitis Tuberculosis Gastroesophagealrefl ux Inhaledforei gnbody Desquamativei nterstitial pneumonitis Lymphocytici nterstitial pneumonitis Asthma Cough-variantasthm a Pollutants(ci garette smoke) Suppurativel ungdi sease Cysticfi brosis Bronchiectasis Rightm iddlel obesyn-drome Ciliaryd yskinesiasyn-dromes	Asthma Recurrentvi rali nfections Sinusitis Tuberculosis Mycoplasma Gastroesophagealrefl ux Psychogeniccough Cysticfi brosis Bronchiectasis Immunodeficiency

Tuberculosis

ChiefCo mplaint:C oughandfever.
Historyof PresentIl lness: Tuberculin sk intest(P PD) resul ts; durati onof cough, sputum , fever, headache. S tiff neck , bone pain, j oint p ain. P rior treatmentfortubercul osis.E xposuretotubercul osis.C hestr oentgenogram results.S putumcol or,quanti ty,consi stency, hemoptysis. Urban, low-income population,hom eless.
TravelH istory:T raveltoS outhA merica,S outheastA sia,I ndia.
PastM edicalH istory: P reviouspneum onia, previ oushospi talizations, pri or radiographs, A IDS ri sk factors. D iabetes, asthma, steroids, immunodeficiencies,chroni cpul monarydi sease.
Medications:A ntihistamines.
Allergies: Dr uga llergies.
Family H istory: S ource case drug resi stance. T uberculosis, recurrent infections,chroni cl ungdi sease.
Reviewof Systems: General stateofheal th;grow thanddevel opment;feedi ng history,abnorm alstool s,neurom usculanw eakness.
SocialH istory:D aycareorschool attendance.

PhysicalE xamination
GeneralA ppearance: Respir atorydistr ess. Notew hetherthepati ent looks “ill” orw ell.
VitalSi gns: Temperature(fever),respi ratoryrate(tachy pnea),pul se (tachycardia),B P,grow thpercenti les.
Skin:R ashes,cy anosis,urti caria.
LymphN odes: Lymphadenopathy(cervical,supraclavicular,ax illary,inguinal).
HEENT:T ympanicm embraneery thema,neck sti ffness.
Chest: I ncreased vocal frem itus. I ncreased percussi on resonance, rhonchi , crackles,bronchi albreathsoundsw ithdecreasedi ntensity.
Cardiac: Distantheartsounds,m urmur,rub.
Abdomen:M asses,tenderness,hepatom egaly,spl enomegaly.
Extremities:C lubbing,edem a.
Neurologic:M entalstatus,m uscletoneandstrength.
LaboratoryE valuation:C BC, electrolytes, BUN,creati nine;O $_2$saturati on,l iver function tests;U A,earl ym orninggastri caspi ratetoobtai nsw allowedsputum for acid-fast bacillistainandculture.Histologicalex amination of lymph nodes, pleura,l iver,bonem arrowbi opsies.
Chest X -ray: Segmental consol idation, hi lar node enl argement, segm ental atelectasis.
Differential D iagnosis: A typical m ycobacteria i nfection, active pul monary tuberculosis,I atenttubercul osis.

OtitisM edia

ChiefCo mplaint:E arpai n.
HistoryofP resent Illness: Ea rp ain,fe ver,ir ritability.De greeo ffe ver;tim eo f onset;cough,sorethroat,headache,neck sti ffness,di arrhea.
PastM edical History:P reviousepi sodesofoti tism edia,pneum onia,asthm a, diabetes,i mmunosuppression,steroi duse.

Allergies:A ntibiotics.
FamilyHisto ry:R ecurrenteari nfections.

PhysicalE xamination
Ears:B ulging,opaci fied,ery thematousty mpanic membrane;poorvi sualization of landm arks, absent light reflex , retraction, decreased m obility w ith insufflationofai r.
Nose:N asaldi scharge,ery thema.
Throat:P haryngealery thema,ex udate.
Chest: Breathsounds.
Heart:R ateandrhy thm,m urmurs.
Abdomen: Tenderness,hepatom egaly.
LaboratoryE valuation:C BC,el ectrolytes,ty mpanocentesis.
Differential D iagnosis: Acute oti tis m edia, m astoiditis, oti tis externa, oti tis mediaw itheffusi on,chol esteatoma,ty mpanosclerosis,chol esteatoma.

Pharyngitis

ChiefCo mplaint:S orethroat.
HistoryofP resentIllness: Sore throat,fever,cough,irritability ,earpain.Nasal discharge,headache,abdom inalpai n;pri orstreptococcal phary ngitis, past streptococcalphary ngitis,scarl etfever,rheum aticfever.
PastM edicalH istory: Previousepi sodesofoti tism edia,pneum onia,asthm a, diabetes,i mmunosuppression.
Allergies:A ntibiotics.
FamilyHisto ry:S treptococcalthroati nfections.

PhysicalE xamination
GeneralA ppearance:N otew hetherthepati entappearsw ellortox ic.
VitalSi gns: Temperature(fever),pul se,bl oodpressure,respi ratoryrate.
Skin: Rash(" sandpaper"feel ,scarl etfever).
LymphN odes: Tendercervi caladenopathy .
Ears:T ympanicm embraneery thema,bul ging.
Nose:M ucosalery thema.
Throat:E rythema,vesicles,ulcers,softpalatepetechiae.T onsillarex udate.
Mouth: Foul breath.
Abdomen: Tenderness(m esentericadeni tis),hepatom egaly,spl enomegaly.

ClinicalM anifestationsofP haryngitis			
	GroupA str eptococcus	**Viral(oth erth anE BV)**	**Epstein-Barrv irus**
Age	Generally3yearsorol der	Anyage	Over5yrs(especi allyl ateschool age/adolescent)
Season	Falltospri ng	Any	Any
Clinical	Tendercervi caladenopathy, foulb reath,t onsillar exudates,softpal ate petechiae,abdom inalpai n (mesentericadeni tis),head-ache,rash("sandpaper"feel , scarletfever),norhi norrhea, nocough,conj unctivitis(i e, noU RIsym ptoms)	Papular-vesicularl esionsor tonsillaru lcers(eg,h erpangina, CoxsackieA),URIsym ptoms. Rash,oftenpapul osquamous.	Indolentonset,tons illare xudates, lymphadenopathy,fati gue,hepato-splenomegaly,atypi call ymphocytes inperi pheralsm ear.R ashw ithpeni - cillin.I llnessla stsm oret han7-10 days(GABHSi nfectionr esolves within7days).

LaboratoryE valuation:R apidanti gendetecti ontest,throatcul ture.
DifferentialD iagnosisofP haryngitis:V iruses(i nfluenza,adenovi rus,E pstein-Barr virus), groups CandGstreptococci ,C orynebacteriumdi phtheriae(gray exudatei nthephary nx),C hlamydia.

Peritonsillar, Retropharyngealor Paraphary ngeal Abscess

ChiefCo mplaint:T hroatpai n.
History of P resent Illness: R ecent tonsi llopharyngitis or U RI. S tridor, dysphagia,drool ing.
Past M edical H istory: P revious peritonsillar abscesses, phary ngitis, otitis media,pneum onia,asthm a,di abetes,i mmunosuppression.
Medications:I mmunosuppressants.
Allergies:A ntibiotics.
FamilyHisto ry:S treptococcalphary ngitis.

PhysicalE xamination
GeneralA ppearance:S everethroatpai nanddy sphagia.I llappearance.
Throat: T rismus, " hot potato voi ce," uvul a poi nting toward unaffected si de (peritonsillar abscess). S tridor, drooling, anterior phary ngeal w alldisplacement(retrophary ngealabscess).
LymphN odes:C ervicall ymphadenopathy.
Chest: Breathsounds,rhonchi .
Heart: Murmurs,rubs.
Abdomen: Tenderness,hepatom egaly,spl enomegaly.
LaboratoryE valuation:C ulturesofsurgi caldrai nage.Lateral neck X ray .

Epiglottitis

ChiefCo mplaint:S orethroat.
HistoryofP resent Illness:3to7y earsofageandanabruptonsetofhi gh fever,severesorethroat,dy sphagia,drool ing.R efusalto swallow,drool ing; quiet,hoarsevoi ce.
PastM edicalH istory:I mmunosuppression.
Medications:I mmunosuppressants.
Vaccinations:H aemophilusi nfluenzai mmunization.

PhysicalE xamination
General A ppearance: I nspiratory stri dor, “tox ic” appeara nce. R espiratory distress(si ttingi ntri podposturew ithneck ex tended),apprehensi on.
Chest:S tridor,decreasedbreathsounds.
Heart: Mu rmurs.
Abdomen:T enderness,spl enomegaly.
Extremities:C yanosis.
LaboratoryE valuation: Lateralneck x -rays

DifferentialDiag nosiso fE piglottitis		
Epiglottitis	**ViralL aryngo-tracheitis**	**BacterialTr acheitis**
Highfever,dysphagi a, drooling,"tox ic"ap-pearance,refusal to speak	Low-gradefever,coryza. barkingcough,hoarse voice	Improvingcroupthat worsens;hi ghfever, stridor,anteri orneck tenderness:nodrool - ing

Croup(ViralLary ngotracheobronchitis)

ChiefCo mplaint: Cough.
History of P resent Illness: M ild upper respiratory sy mptoms, fol lowed by suddenonsetofabark ingcoughandhoarseness,oftenatni ght.
PastM edicalH istory:I mmunosuppression.
Past M edical H istory: Prematurity, respi ratory di stress sy ndrome, bronchopulmonarydy splasia.
Medications:A ntibiotics.
Vaccinations:H aemophilusi nfluenzai mmunization.

PhysicalE xamination
GeneralA ppearance: Low -gradefever, non-toxicappearance.C omfortableat rest,bark y,seal -likecough.R estlessness,al teredm entalstatus.
Vital Si gns: Respirations (tachy pnea), bl ood pressure, pul se (tachy cardia), temperature(l ow-gradefever).
Skin:P allor,cy anosis.
Chest:I nspiratorystri dor,tachy pnea,retracti ons,di minishedbreathsounds.
Abdomen:R etractions,paradox icalabdom inalw allm otion(abdom enri ses on inspiration),tenderness.
LaboratoryE valuation:A nteroposteriorneck radi ographs:subgl otticnarrow - ing,(" steeplesi gn");pul seox imetry.
Differential D iagnosis: E piglottitis, acute croup, forei gn body aspi ration, anaphylaxis;spasm odiccroup(recurrental lergicupperai rwayspasm).

Bronchiolitis

ChiefCo mplaint:W heezing.
History of P resent Ill ness: Duration of w heezing, cough, m ild fever, nasal discharge,congesti on.C oldw eatherm onths.Ox ygensaturati on.
Past M edical H istory: C hronic pulmonary disease (i e, prem aturity, bronchopulmonarydy splasia),heartdi sease,i mmunocompromise.
Medications: Bronchodilators.
Allergies:A spirin,foodal lergies.
FamilyHisto ry: Asthma,hay fever,ecz ema.
SocialH istory:E xposuretopassi veci garettesm oke.

PhysicalE xamination
GeneralA ppearance:C omfortableappeari ng,non-tox ic.
VitalSi gns:T emperature(l ow-gradefever),respi rations,pul se,bl oodpressure.
Ears: Tympanicm embraneery thema.
Nose:R hinorrhea
Mouth: Fl aringofthenostri ls.
Chest: Chest wall retractions,w heezing,fi necrack lesoni nspiration,di minished airex change.
Heart: Mu rmurs.
Abdomen: P aradoxical abdominalw allm otionw ithrespi ration(i e,abdom en collapsesw itheachi nspiration).
Laboratory E valuation: C BC, el ectrolytes, pul se ox imetry. N asopharyngeal washingsforR SVanti gen.
ChestX -ray:H yperinflation,fl atteneddi aphragms,patchy atel ectasis.
Differential D iagnosis: Forei gn body aspi ration, asthm a, pneum onia, congestiveheartfai lure,aspi rationsy ndromes(gastroesophageal refl ux).

Meningitis

ChiefCo mplaint: Feverandl ethargy.
History of P resent Illness: D uration and degree of fever; headache, neck stiffness, cough; lethargy , irritability (high-pitched cry), vom iting, ano rexia, rash.
PastM edicalH istory: Pneumonia,oti tis media, endocarditis.D iabetes,si ckle celldi sease;recentupperrespi ratoryi nfections.T ravelhi story.
PerinatalHi story:P rematurity,respi ratorydi stress.
Medications: Antibiotics.
SocialH istory:H omesi tuation.
FamilyHisto ry:E xposuretoH i nfluenzaornei sseriam eningitis.

PhysicalE xamination
GeneralA ppearance: Level ofconsci ousness;obtundati on,l abored respi rations.N otew hetherthepati entl ooks "ill,"w ell,orm alnourished.
Vital Si gns: T emperature (fe ver), pul se (tachy cardia), respi ratory rate (tachypnea),B P(hy potension).
Skin: Capillary refill,rashes,petechia,purpura(m eningococcemia).
Head: Bulgingorsunk enfontanel le.
Eyes:E xtraocularm ovements,papi lledema,pupi lreacti vity,i cterus.
Neck: Nuchal ri gidity. B rudzinski's si gn (neck fl exion causes hi p fl exion); Kernig'ssi gn(fl exinghi pandex tendingk neeel icitsresi stance).
Chest:R honchi,crack les,w heeze.
Heart: Rateofrhy thm,m urmurs.
Extremities: Splinterhem orrhages(endocardi tis).
Neurologic:A lteredm entalstatus,w eakness,sensory defi cits.
LaboratoryE valuation:
CSFTube1 - Gramstai n,cul tureandsensi tivity,bacteri alanti gen screen (1-2m L).
CSFTube2 -Gl ucose,protei n(1-2m L).
CSFTube3 -C ellcountanddi fferential(1-2m L).
Electrolytes, BUN, creatinine. CBC withdi fferential,bl oodcul tures,sm earsand cultures from purpuri c l esions: cul tures of stool , uri ne, j oint f luid, abscess;

purifiedprotei nderi vative(P PD).

CerebralS pinalFluidA nalysis

Disease	Color	Protein	Cells	Glucose
NormalC SFFl uid	Clear	<50 mg/100 mL	<5 lymphs/mm^3	>40m g/100 mL, ½-2/3of bloodgl ucose level
Bacterialm eningitis ortubercul ousm en-ingitis	Cloudy	Elevated 50-1500	>100 WBC/mm^3 predomi-nantlyneutro-phils.B acte-riapresenton Gram'sstai n.	Low,< ½of blood glucose
Tuberculous,fungal , partiallytreatedbac-terial,syp hiliticm en-ingitis,m eningeal metastases	Clear opal-escent	Elevated usually <500	10-500W BC withpredom i-nantl ymphs	20-40,l ow
Viralm eningitis,par-tiallytreatedbacte-rialm eningitis,en-cephalitis,tox o-plasmosis	Clear opal-escent	Slightly elevated ornor-mal	10-500W BC withpredom i-nantl ymphs	Normaltol ow

UrinaryT ractInfection

ChiefCo mplaint:P ainw ithuri nation.

HistoryofP resentIllness: D ysuria, frequency (voi dingrepeatedl yofsm all amounts),m alodorousuri ne,i ncontinence;suprapubi cpai n,l ow-backpai n, fever,chills(py elonephritis),v omiting,irritability ;constipation.Urineculture results(suprapubi caspi rationorurethral catheteri zation).

PastM edicalH istory: Ur inaryin fections.

Age	Signs/Symptoms
Neo-nate/infant	Hypothermia,hy perthermia,fai luretothri ve.vom iting, diarrhea,sepsis,irritability ,lethargy ,jaundice,m al-odorousuri ne
Toddler	Abdominalpai n,vom iting,di arrhea,consti pation,abnor-malvoi dingpattern,m alodorousuri ne,fever,poor growth

Age	Signs/Symptoms
Schoolage	Dysuria,frequency ,urgency ,abdom inalpai n, incontinenceorsecondary enuresi s,consti pation,m al-odorousuri ne,fever
Adolescent	Dysuria,frequency ,urgency ,abdom inalpai n,m alodor-ousuri ne,fever

PhysicalE xamination

General A ppearance: D ehydration, septi c appearance. N ote w hether the patientl ookstox icorw ell.

VitalSi gns: T emperature(hi ghfever[> 38°C]py elonephritis),respi ratoryrate, pulse,B P.

Chest: B reathsounds.

Heart: R hythm,m urmurs.

Abdomen: S uprapubic tenderness, costovertebral angle t enderness (pyelonephritis), renal m ass, nephrom egaly. Low er abdom inal m ass (distendedbl adder),stool i ncol on.

Pelvic/Genitourinary: C ircumcision, hy pospadia, phi mosis, foresk in; vagi nal discharge.

LaboratoryE valuation: U Aw ithm icro,uri neGram stain,uri neC &S.C BCw ith differential,el ectrolytes.U ltrasound,voi ding cystourethrogram, renal nuclear scan.

DifferentialD iagnosis: C ystitis, py elonephritis, vul vovaginitis, gonococcal or chlamydia urethritis,herpesi nfection,cervi citis,appendi citis,pel vic inflamma-torydi sease.

DifferentialD iagnosisofU rinaryTr actS ymptoms	
Urinarytr actin fection Urethritis Urethrali rritationby soaps,deter-gents,bubbl ebath Vaginalforei gnbodi es	Emotionaldi sturbances Vulvovaginitis Trauma(sex ualabuse) Pinworms

LymphadenopathyandLy mphadenitis

ChiefCo mplaint: S wollenl ymphnodes.

HistoryofP resentIllness: D urationofgeneral ized orregi onaladenopathy . Fever,pattern,spik ing fevers,relapsingfever,rash,arthralgias.S orethroat, nasaldi scharge,cough,travel hi story.A nimalex posure (catscratch,k ittens). Localized traumaorsk ini nfection,ex posuretotubercul osis,bl oodproduct exposure.C onjunctivitis,recurrenti nfections.

PastM edicalH istory: D evelopmentaldel ay,grow thfai lure.

SocialH istory: I ntravenousdruguse,hi gh-risksex ualbehavi or.

Medications:P henytoin.
Review of S ystems: W eight l oss, ni ght sweats, bone pai n. P allor, easy bruising.

HistoricalE valuationofLy mphadenopathy	
Generalizedorregi onaladenopathy Fever Rash Exposuretoi nfection Travel	Animalex posure Bloodproductex posure Arthralgia/arthritis Delayedgrow th/development Weightl oss,ni ghtsw eats Lesionsatbi rth

PhysicalE xamination
General A ppearance: D ehydration, septi c appearance . N ote w hether the patientl ookstox icorw ell.
Vital Si gns: T emperature (fever), pul se (tachy cardia), blood pressure, w ide pulsepressure(hy perthyroidism).Grow thpercenti les.
LymphN odes: General izedorregi onaladenopathy .Locati on,si ze of enlarged lymph nodes; discreteness, m obility, consistency , tenderness, fluctuation. Supraclavicularorposteri ortri anglel ymphadenopathy.
Skin: Lesioni n the area(s)drai nedby affectedl ymphnodes.S andpaperrash (scarlet fever), punctum s, pustul es, spl inter hem orrhages (endocardi tis), exanthemsorenanthem s,m alarrash(sy stemicl upusery thematosus).
Eyes:C onjunctivitis,uvei tis.
Chest:B reathsounds,w heeze,crack les.
Heart:R hythm,m urmurs.
Abdomen:T enderness,m asses,hepatom egalyspl enomegaly.
Extremities: Jointsw elling,j ointtenderness, extremity lesions, nasopharyngeal masses.

Generalizedorregi onal adenopathy Growthfai lure Fever Tachycardia,w idepul sepr essure, briskrefl exes Rash/exanthem	Hepatosplenomegaly Skinpustul e/puncture Conjunctivitis/uveitis Midlineneckm assthatretracts withtongueprotrusi on Massi nposteri ortri angle Supraclavicularm ass

LocationofN ode(s)	EtiologyofI nfectionor P rocess
Posteriorauri cular,posteri or/ suboccipital,occi pital	Measles,scal pi nfections(eg,ti neacapi tis)
Submandibular,anteri orcervi - cal	Oropharyngealorfaci ali nfections(uni lateral, "cold"subm andibularnodesw ithouti nfection indicatesatypi calm ycobacteria)
Preauricular	Sinusitis,tul aremia
Posteriorcer vical	Adjacentski ni nfection
Bilateralc ervicalo fm arked degree	Kawasaki'sdi sease,m ononucleosis, toxoplasmosis,secondary syphilis
Supraclaviculararscal ene, lowerc ervical	Infiltrativeprocess(m alignancy)
Axillary	Catscr atchd isease,sp orotrichosis
Generalizedadenopathy,i n- cludinga xillary,e pitrochlear, inguinal	Generalizedi nfection(m ononucleosis,hepati tis), immunodeficiency(H IV),sarcoi dosis
Recurrentepi sodesofadeni tis	Chronicgranul omatousdi sease,i mmunodefi- ciency

DifferentialD iagnosisofG eneralizedLy mphadenopathy	
SystemicI nfections	
Bacterialin fections	Tuberculosis
Scarletfever	Syphilis
Viralex anthems(eg,rubel laor rubeola)	Toxoplasmaorgani sms
	Brucellaorgani sms
Epstein-Barrv irus	Histoplasmosis
Cytomegalovirus	Coccidioidomycosis
Hepatitisvi rus	Typhoidfever
Cat-scratchdi sease	Malaria
Mycoplasmaorgani sms	Chronicgranul omatousdi sease
Bacterialendocardi tis	HIVin fection
Immune-MediatedI nflammatory	**Disorders**
Systemicl upuserythem atosus	Kawasakisyndr ome
Juvenilerheum atoidarthri tis	HyperIgD syndrom e
Serumsi ckness	HyperIgE syndrom e
StorageD iseases	

Gaucherdi sease Niemann-Pickdi sease	Tangierdi sease
Malignancies	
Leukemia Lymphoma Neuroblastoma	HistiocytosisX X-linkedl ymphoproliferative syndrome
MetabolicDiso rders	
Hyperthyroidism	Adrenali nsufficiency
Miscellaneous	
Drugreacti ons(phenytoi n,al lopurinol) Hemolyticanem ias Immunoblasticl ymphadenopathy	Sarcoidosis Sinushi stiocytosis

LaboratoryE valuation: Th roatcu lture,EBV, CM V,t oxoplasmosist iters,CBC and di fferential, E SR, P PD. B lood cul tures, chest X ray , V DRL. N eedle aspiration of the node, after sal ine i nfusion, for Gram 's stai n and aci d-fast stains, and cul ture for aer obes, a naerobes, and m ycobacteria. C atscratch bacillus(B artonellahenselae)titer.

DifferentialD iagnosisofC ervicalLy mphadenopathy	
Viralupperrespi ratorytracti nfection (EBVo rCM Vi nfection) Suppurativei nfections(staphyl ococcal, streptococcal) Coldi nflammation Cat-scratchdi sease Atypicalm ycobacterialadeni tis Toxoplasmosis	Systemicdi sorders Kawasakisyndr ome Kikuchidi sease HyperIgD syndrom e HyperIgE syndrom e Sinushi stiocytosis Sarcoidosis Drugs

Cellulitis

ChiefCo mplaint:R edsk inl esion.
HistoryofP resentIllness: Warm,red,painful,induratedlesion. Fever, chills, headache; di arrhea, l ocalized pai n, ni ght sw eats. I nsect bi te or sti ng; j oint pain.
PastM edicalH istory: Cirrhosis, diabetes,heartm urmur,recentsurgery ;A IDS riskfactor s.
Allergies: Dr uga llergies.
ReviewofS ystems:A nimalex posure(pets),travel hi story,drugtherapy .
FamilyHisto ry:D iabetes,cancer.
SocialH istory:H omesi tuation.

PhysicalE xamination
GeneralA ppearance:N otew hetherthepati entl ooks “ill”o rw ell.

Vital Si gns: T emperature (fever curve), respi ratory rat e (tachypnea), pul se (tachycardia),B P(hy potension).
Skin: W arm, ery thematous, tender, i ndurated l esion. P oorly dem arcated erythema w ith fl at borders. B ullae, sk in bre aks, petechia, ecthy ma gangrenosum(purpuri cofP seudomonas),pustul es,abscesses.
LymphN odes:A denopathyl ocalizedorgeneral izedl ymphadenopathy.
HEENT:C onjunctivalery thema,peri odontitis,ty mpanicm embranei nflammation,neck ri gidity.
Chest:R honchi,crack les,dul lnesstopercussi on(pneum onia).
Heart:M urmurs(endocardi tis).
Abdomen: Li ver tenderness, h epatomegaly, spl enomegaly. C ostovertebral angletenderness,suprapubi ctenderness.
Extremities:W ounds,j ointorbonetenderness(septi carthri tis).
LaboratoryE valuation:C BC,E SR,bl oodcul turesx 2,el ectrolytes,gl ucose, BUN, creati nine, U A, uri ne Gram stai n, C &S; s kin lesion cul tures. N eedle aspirationofborderforGram 'sstai nandcul ture.A ntigendetecti onstudi es.
DifferentialD iagnosis:C ellulitis,ery sipelas,derm atitis,derm atophytosis.

InfectiveEndocar ditis

ChiefCo mplaint:F ever
HistoryofP resentIllness: Chronicfever,m urmur,m alaise,anorex ia,w eight loss, arthralgias,abdom inalpai n.R ecentgastroi ntestinalprocedure, urinary procedure, dental procedure. val vular di sease, rheum atic fever, sei zures, stroke.
PastM edicalH istory:C ongenitalheartdi sease.

PhysicalE xamination
GeneralA ppearance: N otew hetherthepati entl ookstox icorw ell.
Vital Si gns: B lood pressure (h ypotension), pul se (tachy cardia), tem perature (fever),respi rations(tachy pnea).
Eyes: Rothspots(w hitereti nalpatchesw ithsurroundi nghem orrhage)
Chest:C rackles,rhonchi .
Heart:R egurgitantm urmurs.
Skin:P etechiae,Janew ayl esions,Osl er'snodes,spl interhem orrhages.
Extremities:E dema,cl ubbing.
Abdomen: Hepatomegaly,spl enomegaly,tenderness.
Neurologic: Weakness,sensory defi cits.
LaboratoryS tudies:CB C(leuk ocytosis with left shift),E SR,CX R,E CG,blood cultures,uri nalysisandcul ture, BUN/creatinine,cul turesofi ntravenousl ines andcatheterti ps;echocardi ography.
Differential D iagnosis: I nfective endocardi tis, rheumatic fever, sy stemic infection,tubercul osis,uri narytracti nfection.

SepticA rthritis

ChiefCo mplaint: Joi ntpai n.

History of P resent Illness: Joint pain and w armth, redness, sw elling, decreasedrangeof motion.A cuteonsetoffever,l imp,orrefusal tow alk. Penetrating injuriesorl acerations.P reexistingj ointdi sease (eg, rheumatoid arthritis),prostheti cj oint;sex uallytransm itteddi seaseex posure.

Past M edical H istory: H . i nfluenzae i mmunization, si ckle cel l anem ia, M . tuberculosisex posure.

PhysicalE xamination

GeneralA ppearance:N otew hetherthepati entl ookstox icorw ell.

Vital Si gns: T emperature (fever), bl ood pressure (hy potension), pul se (tachycardia),respi rations.

Skin:E rythema,sk inpuncture.V esicularrash,petechi a.

HEENT: Neckri gidity.

Chest:C rackles,rhonchi .

Heart:M urmurs,fri ctionrub.

Abdomen:T enderness,hepatom egaly,spl enomegaly.

Extremities: E rythema, l imitation i n j ointrange of m otion, j ointt enderness, swelling.R efusaltochangeposi tion.

Laboratory E valuation: X -rays of j oint (j oint space di stention, peri osteal reaction),C TorM RI.A rthrocentesisforcel lcount,Gram 'sstai n,gl ucose, mucinclot, cultures.B one-jointscans(gallium ,technetium).B loodcultures. Cultureofcervi xandurethraonT hayer-Martinm ediaforgonorrhea.Ly me titer,anti-streptoly sin-Otiter.

SynovialFl uidFi ndingsi nV ariousTy pesofA rthritis

	WBCCo unt/mm^3	%P MN	JointFl uid:Blood GlucoseR atio
Septicarthri tis	>50,000	$\geq$ 90	Decreased
Juvenilerheum a-toidarthri tis	<15,000-20,000	60	Normalto decreased
Lymearthri tis	15,000-100,000	50+	Normal

Differential D iagnosis: S eptic arthri tis, Ly me di sease, j uvenile rheum atoid arthritis,sy stemicl upusery thematosus,acute rheumaticfever,i nflammatory boweldi sease,l eukemia(bonepai n),sy novitis,traum a,cel lulitis.

Osteomyelitis

ChiefCo mplaint: Legpai n.

HistoryofP resentIll ness: Extremitypai n,degreeoffever,durati onoffever, limitationofex tremityuse;refusal tousetheex tremityorbearw eight.H ip pain, abdom inal pai n, penetrati ng traum a, dog or cat bi te (P asteurella multocida),hum anbi tes,i mmunocompromise,tubercul osis.

PastM edicalH istory: Diabetes mellitus, sickle cellldisease;surgery ,prosthetic devices.
Medications:I mmunosuppressants.
SocialH istory:I ntravenousdrugabuse.

PhysicalE xamination
GeneralA ppearance: N otew hetherthepati entl ookssepti cor well.
Vital Si gns: B lood pressure (hy potension), pul se (tachy cardia), tem perature (fever),respi rations(tachy pnea).
Skin: Pe techiae,ce llulitis,r ash.
Chest:C rackles,rhonchi .
Heart:R egurgitantm urmurs.
Extremities: P oint tenderness, sw elling, w armth, ery thema. T enderness of femur,ti bia,hum erus.
Back:T endernessoverspi nusprocesses.
Abdomen:T enderness,rectal m ass.
Feet:P uncturew ounds.
LaboratoryE valuation:C BC(el evatedW BC), ESR (>50), bloodcul ture;X -rays (softti ssueedem a),C TorM RI.T echnetiumbonescan.
DifferentialD iagnosis:C ellulitis, skeletal orbl oodneopl asia(E wing'ssarcom a, leukemia), bone infarction (hemoglobinopathy), hem ophilia w ith bleeding, thrombophlebitis,chi ldabuse/traum a,sy novitis.

GastrointestinalDi sorders

AcuteA bdominalPainandtheA cuteA bdomen

ChiefCo mplaint: Abdominalpai n.

HistoryofP resentIllness: D urationofpai n,l ocationofpai n;characteri stics of pain (di ffuse, burni ng, cram py, sharp, dul l); constant or i ntermittent; frequency.E ffectofeati ng,defecati on,uri nation,m ovement.C haracteristicsof lastbow elm ovement.R elationtol astm enstrualperi od.

Relationshiptom eals. What does the patientdow henthepai noccurs?Fever, chills, nausea, vom iting (bilious, undigested food, blood, sore throat, constipation,di arrhea,hem atochezia,m elena,anorex ia,w eightl oss.

PastM edicalH istory: D iabetes,asthm a,prem aturity,surgery .E ndoscopies, X-rays.

Medications: A spirin,N SAIDs,narcoti cs,anti cholinergics,l axatives.

Family H istory. A bdominal pai n i n fam ily m embers, pepti c ul cer di sease, irritablebow elsy ndrome.

SocialH istory: R ecenttravel ,changei nfoodconsum ption,drugsoral cohol.

ReviewofS ystems: Grow thdel ay,w eightgai n,em esis,bl oating,di stension. Headache,fati gue,w eakness,stress-ortensi on-relatedsy mptoms.

PhysicalE xamination

General A ppearance: D egree of di stress, body posi tioning to rel ieve pai n, nutritionalstatus.S ignsofdehy dration,septi cappearance.

Vitals: T emperature (fever), pul se (tachy cardia), B P (hy pertension, hypotension),respi ratoryrateandpattern(tachy pnea).

Skin: Jaundi ce,petechi a,pal lor,rashes.

HEENT: P aleconj unctiva,phary ngealery thema,pus,fl atneck vei ns.

Lymph N odes: Cervical ax illary, periumbilical, inguinal ly mphadenopathy, Virchownode(supracl avicularm ass).

Abdomen

Inspection: D istention,vi sibleperi stalsis(sm allbow elobstructi on).

Auscultation: A bsentbow elsounds(l ateobstructi on),hi gh-pitchedrushes (earlyobstructi on),brui ts.

Palpation: Masses, hepatom egaly, l iver tex ture (sm ooth, coarse), splenomegaly. B imanual pal pation of fl ank, nephrom egaly. R ebound tenderness, hernias, (inguinal, fem oral, um bilical); costovertebra l angle tenderness. R etained f ecal m aterial, di stended bl adder (obstructi ve uropathy).

McBurney'sP ointTender ness: Located two-thirdsofthew aybetw een umbilicusandanteriorsuperioriliacspine(appendicitis).

IliopsoasS ign: E levationofI egsagai nstex aminer'shandcausespai n, retrocecal appendi citis. Obturator si gn: Fl exion of right thi gh and externalrotati onofthi ghcausespai ni npel vicappendi citis.

Rovsing's S ign: M anual pressure and rel ease at l eft l ower quadrant causesreferredpai natM cBurney'spoi nt(appendi citis).

Percussion: Li verandspl eenspan,ty mpany.

Rectal E xamination: I mpacted st ool, ma sses, t enderness; g ross o r o ccult blood.

PerianalE xamination: Fi ssures,fi stulas,hem orrhoids,sk intags,soi ling(fecal

oruri naryi ncontinence).

MaleGen italE xamination:H ernias,undescendedtestes,hy pospadias.

Female G enital E xamination: Urethra, di stal vagi na, traum a; i mperforate hymen. P elvic examination i n pubertal gi rls. C ervical di scharge, adnex al tenderness,m asses,cervi calm otiontenderness.

Extremities:E dema,di gitalcl ubbing.

Neurologic: Observati onofthepati entm ovingonandoffoftheex amination table.Gai t.

LaboratoryE valuation:C BC,el ectrolytes,l iverfuncti ontests,am ylase, lipase, UA,pregnancy test.

ChestX -ray: Freeai runderdi aphragm,i nfiltrates.

Acute A bdomen X -ray S eries: Fl ank stri pe, subdi aphragmatic free ai r, distendedl oopsofbow el, sentinell oop,ai rfl uidl evels,cal cifications,fecal iths.

DifferentialD iagnosisofA cuteA bdominalP ain

Generalized P ain: I ntestinal obstructi on, di abetic k etoacidosis, consti pation, malrotation of the bow el, volvulus, si ckle cri sis, acute porphy ria, musculoskeletaltraum a,psy chogenicpai n.

Epigastrium: Gastroesophageal refl ux,i ntestinal obstructi on, gastroenteri tis, gastritis,pepti cul cerdi sease,esophagi tis,pancreati tis,perforatedvi scus.

RightLow er Quadrant:A ppendicitis,i ntussusception,sal pingitis, endometritis, endometriosis, ectopi c pregnancy , hem orrhage or rupture of ovari an cy st, testiculartorsi on.

Right Up per Qu adrant: A ppendicitis, chol ecystitis, hepati tis, gastri tis, gonococcalperi hepatitis(Fi tz-Hugh-Curtissy ndrome),pneum onia.

Left U pper Quadrant: Gastroesophageal refl ux, pepti c ul cer, gastri tis, pneumonia,pancreati tis,vol vulus,i ntussusception,si cklecri sis.

Left L ower Quadrant: V olvulus, i ntussusception, m esenteric l ymphadenitis, intestinal obstructi on, sickle cri sis, c olitis, strangul ated herni a, testi cular torsion, psy chogenic pai n, i nflammatory bow el di sease, gastroenteritis, pyelonephritis,sal pingitis,ovari ancy st,ectopi cpregnancy ,endom etriosis.

Hypogastric/Pelvic: C ystitis, urol ithiasis, appendicitis, pel vic i nflammatory disease, ectopicpregnancy ,strangul atedherni a,endom etriosis,ovari an cyst torsion,bl adderdi stension.

RecurrentA bdominalPain

ChiefCo mplaint: Abdominalpai n.

History of P resent Illness: Qual ity of pain (burni ng, cram py, sharp, dul l); location(di ffuseorl ocalized).D urationof pain, change in frequency; constant orinterm ittent.

Effect of eati ng, vom iting, defecati on, uri nation, i nspiration, m ovement and position. C haracteristics of bow el m ovements. R elation to l ast m enstrual period. V omiting (bi lious, undi gested food, bl ood), co nstipation, di arrhea, hematochezia, m elena; dy suria, hem aturia, anorex ia, weight l oss. R elationshiptom eals;tri ggersandrel ieversofthepai n(antaci ds).R elationship tothem enstrualcy cle.

Whatdoesthepati entdow henthepai n occurs?H owdoesi taffectacti vity? Schoolattendance,school str ess,school phobi a.W hatfearsdoesthechi ld have?W hatacti vitieshasthechi lddi scontinued?

PastTesting: E ndoscopies,x -rays,upperGI seri es.

PastM edical History:D iabetes,asthm a,surgery ,di abetes,prem aturity. Prior treatmentforaabdom inalpai n.

Family H istory: A bdominal pai n i n fam ily m embers, urol ithiasis, migraine, peptic ul cer di sease, i rritable bow el syndrome, hem olytic anem ia, chroni c pain.

Social H istory: R ecenttravel , changei nschool s, changei nw ater and foo d consumption, maritaldi scord,recentl osses(grandparent,pet),general fam ily function. R eviewofaty picalday , i ncludingm eals, acti vities, sl eep pattern, schoolsc hedule, t imeo fb owelmo vements; d rugs/alcohol, sex ual acti vity, sexualabuse.

ReviewofS ystems: Growth, w eightgai n, stool pattern, bl oating, di stension, hematemesis, hem atochezia, j aundice. H eadache, l imb pai n, di zziness, fatigue, w eakness. S tress-ortensi on-relatedsy mptoms.

PhysicalE xamination

GeneralA ppearance:D egreeofdi stress,septi cappearance. N otew hetherthe patientl ooks “ill”o rw ell.

Vitals: T emperature (fever), pul se (tachy cardia), B P (hy pertension, hypotension),respi ratoryrate(tachy pnea). Grow thpercenti les,decel eration ingrow th, w eight-for-height.

Skin:P allor,rashes,nodul es,j aundice,purpura,petechi a.

HEENT:P aleconj unctiva,scl erali cterus.

Lymph N odes: Cervical, perium bilical, inguinal ly mphadenopathy, V irchow node(enl argedsupracl avicularnode).

Chest:B reathsounds,rhonchi ,w heeze.

Heart: Murmurs,di stantheartsounds,peri pheralpul ses.

Abdomen

Inspection:A bdominaldi stention,scars,vi sibleperi stalsis.

Auscultation: Qual ity and pattern of bow el sounds; hi gh-pitched bow el sounds(parti alobstructi on),brui ts.

Palpation: P alpationw hile noti ng the pati ent's appearance, react ion, and distractibility. T enderness, rebound, m asses, hepatomegaly; livertex ture (smooth, coars e), spl enomegaly; retai ned fecal m aterial. B imanual palpationofflank (nephrom egaly), hernias(inguinal,fem oral,um bilical); costovertebralangl etenderness.

McBurney'spointtender ness: Locatedtw o thi rdsofthe w aybetw een umbilicusandanteriorsuperioriliacspine,appendicitis.

Rovsing's sign: M anual pressure and rel ease at l eft lower quadrant causesreferredpai natM cBurney'spoi nt,appendi citis.

Percussion:T ympany,l iverandspl eenspanby percussi on.

PerianalE xamination: Fi ssures,fi stulas,hem orrhoids,sk intags,underw ear soiling(fecal oruri naryi ncontinence).

Rectal E xamination: I mpacted stool, m asses, tenderness; gross or occul t blood.

MaleGen italE xamination: Hernias,undescendedtestes,hy pospadias.

Female Gen ital Examination: H ymeneal ri ng traum a, i mperforate hy men, urethra,di stalvagi na. Pelvicex aminationi npubertal gi rls. C ervicaldi scharge, adnexaltenderness,m asses,cervi calm otiontenderness.

Extremities:B rachialpul ses,fem oralpul ses,edem a. D igitalcl ubbing,l ossof nailbedangl e(osteoarthropathy).

NeurologicE xamination: Observati onofthepati entm ovingonandoffofthe examinationtabl e;gai t.

LaboratoryE valuation:C BC, electrolytes, BUN, liverfuncti ontests,am ylase,

lipase,U A,pregnancy test.

ChestX -ray: Freeai runderdi aphragm,i nfiltrates.

X-raysofA bdomen(acuteabdom enser ies): Fl ankstri pe,subdi aphragmatic free air, distended loops ofbow el,ai rfl uidl evels,m asseffects, calcifications, fecaliths.

DifferentialD iagnosisofR ecurrentA bdominalP ain	
GastrointestinalC auses Antralgastri tis,pepti cul cer Constipation Crohndi sease Carbohydratem alabsorption Pancreatitis Cholelithiasis Malrotationandvol vulus Intestinalparasi tici nfection(G. lamblia) **UrinaryTr actD isorders** Ureteropelvicj unctionobstructi on Urinarytr actin fection Urolithiasis	**PsychogenicC auses** Conversionreacti on Somatizationdi sorder Anxietydi sorder **OtherC auses** Intervertebraldi skdi sease Spinedi sease Musculoskeletaltraum a Migraineorcy clicvom iting Abdominalepi lepsy

PersistentVomiting

ChiefCo mplaint:V omiting.

HistoryofP resentIllness: C haracterof emesis (effortless,forceful ,proj ectile, color,food,uncurdledm ilk,bilious,feculent,bl ood,c offeeg roundm aterial); abdominalpai n,retchi ng,fever,headache,cough.

Jaundice,recentchangei nm edications.I ngestionofspoi ledfood;ex posureto illcontacts.Overfeedi ng,w eightandgrow thparam eters,vi gorous han d or fingersuck ing,m aternalpoly hydramnios.W heezing,irritability ,apnea.

Emesis related tom eals;speci ficfoodsthati nduceem esis(foodal lergyor intolerance to milk, soy , gl uten). P ain on sw allowing (ody nophagia), di fficulty swallowing(dy sphagia).D iarrhea,consti pation.

Proper formula preparation, airgul ping,postci balhandl ing.C onstantheadache, worsew ithV alsalvam aneuverandoccurri ng with morning emesis(i ncreased ICP).

Possibilityofpregna ncy (lastm enstrualperiod,contraception,sex ualhistory). PriorX -rays,upperGI seri es,endoscopy .

PastM edical History:D iabetes,pepti cul cer,C NS disease. Travel, animal or petex posure.

Medications: Digox in,theophy lline, chemotherapy, anticholinergics,m orphine, ergotamines,oral contracepti ves,progesterone,ery thromycin.

FamilyHisto ry:M igraineheadaches.

HistoricalF indingsin P ersistentV omiting	
AppearanceofV omitus Largevol ume,bi lious Uncurdledm ilk,fo od Bile Feculentem esis Bloody,coffee-grounds **CharacterofE meticA ct** Effortless,nonbilious Tonguethrusti ng Fingersuck ing,gaggi ng Projectilevom iting **TimingofE mesis** Earlym orning Relatedtom ealsorfoods	**OtherGastr ointestinal Symptoms** Nausea Swallowingd ifficulties Constipation Pain Jaundice **NeurologicS ymptoms** Headache Seizures **General** Respiratorydi stress Travel,ani mal/petex posure Illfa milym embers Stress

PhysicalE xamination

GeneralA ppearance:S ignsofdehy dration,septi c appearance. Note whether thepati entl ooks "ill"o rw ell.

VitalS igns: B P (hy potension, hy pertension), pul se (tachy cardia), respi ratory rate,tem perature(fever).Grow thpercenti les.

Skin:P allor,j aundice,fl ushing,rash.

HEENT:N ystagmus,papi lledema; ketone odoronbreath(appl eodor,di abetic ketoacidosis);jugularvenousdistention.B ulgingfontanelle,papilledem a.

Lungs:W heezes,rhonchi ,ral es.

Abdomen: Tenderness t o p ercussion, d istention, i ncreased b owel sounds, rebound tenderness (peri tonitis). N ephromegaly, m asses, hepatom egaly, splenomegaly,costovertebral angl etenderness.

Extremities:E dema,cy anosis.

Genitourinary:A dnexaltenderness,uteri neenl argement.

Rectal:P erirectall esions,l ocalizedtenderness,m asses,occul tbl ood.

Neurologic E xamination: S trength, sensati on, posture, gai t, deep tendon reflexes.

VitalSi gns: Tachycardia,br adycardia, tachypnea,fever,hypotensi on,hy-pertension,shortstature,poorw eight gain **Abdomen** Distension Absentbow elsounds Increasedbow elsounds Reboundtenderness Masses	**GenitourinaryS ystem** Adnexalpai n Mass Rectalm ass **Respiratory:**B ronchospasm,pneum o-nia **Neurologic:**M igraine,sei zures,i n-creasedi ntracranialpressure **Renal**:Fl ankpai n **Skin**:R ash,purpura

Laboratory E valuation: C BC, el ectrolytes, U A, am ylase, l ipase, LF Ts, pregnancytest,abdom inalX -rayseri es.

46Pe rsistentVo miting

Functional

- Innocentvom iting
- Gastroesophagealrefl ux
- Postcibalhandl ing
- Improperform ulapreparati on
- Aerophagia

GastrointestinalObstr uction

- Esophageal:obstructi onatresi a,stenosi s,vascul arri ng,tracheal esophagealfi stula,cri copharyngeali ncoordination,achal asia,natal herni a, diaphragmaticherni a

Torsionofthestom ach
Malrotationofthebow el
Volvulus
Intestinalatresi a,stenosi s,m econiumi leusw ithcysti cfi brosis,m econiumpl ug
Webs
Annularpancreas
Paralytici leus(peri tonitis,postoperati ve,acutei nfection,hypokal emia)

- Hirschsprungdi sease
- Imperforateanus
- Entericdupl ication

Othergastr ointestinalcau ses:N ecrotizingenterocol itis,congeni tall actose intolerance,m ilk-soyprotei ni ntolerance,l actobeazor,GIperforati on, hepatitis,pancreati tis

Neurologic: Increasedi ntracranialpressure,subdural hydrocephal us,edem a, kernicterus

Renal: Obstructi veuropathy,renal i nsufficiency

Infection:S ystemici nfections,pyel onephritis

Metabolic: Ureacycl edefi ciencies,am inoacidopathies,di sordersofcarbohydrate metabolism,aci dosis,congeni taladrenal hyperpl asia,tetany,hypercal cemia

Drugs/toxins: Theophy lline,caffei ne,di goxin

Blood:S wallowedm aternalbl ood,gastri tis,ul cers

Pneumonia
Dysautonomia
Postoperativeanesthesi a

Gastroesophagealrefl ux,esophagi tis

Functional

- Innocent
- Improperform ulapreparati on
- Aerophagia
- Postcibalhandl ing
- Nervous
- Rumination

Esophageal: Forei gnbody,stenosi s,vascul arri ng,tracheoesophageal fi stula cricopharyngeali ncoordination,achal asia,hi atalherni a

Stomach:B ezoar,l actobeazor

Intestinalobstr uction,pyl oricstenosi s,m alrotation,M eckeldi verticulitis, intussusception,i ncarceratedherni a,H irschsprungdi sease,appendi citis,i ntestinal duplications

Othergastr ointestinalcau ses:A nnularpancreas,paral ytici leus,hypokal emia, Helicobactersp.i nfection,peri tonitis,pancreati tis,cel iacdi sease,vi raland bacterialenter itis,l actosei ntolerance,m ilk-soypr oteini ntolerance,chol ecystitis, gallstones,pseudo-obstructi on

Neurologic: Increasedi ntracranial(subdural hem atoma,hydrocephal us,cerebral edema)

Renal: Obstructi veuropathy,renal i nsufficiency,stones

Infectious:M eningitis,sepsi s,pyel onephritis,oti tism edia,si nusitis,pertussi s, hepatitis,parasi tici nfestation

Metabolic: Ureacycl edefi ciencies,am inoacidopathies,di sorderofcarbohydrate metabolism,aci dosis,congeni taladrenal hyperpl asia,tetany,hypercal cemia

Drugs/toxins: Theophy lline,di goxin,i ron,i pecac

Blood

Hydrometrocolpos

Radiation/chemotherapy

Reyes yndrome

Psychogenicvo miting

Munchausens yndromeb yp roxy

DifferentialDiag nosiso fV omitingin Ch ildrenOld erT han12M onths ofA ge

Gastroesophagealr eflux
Gastrointestinalobstr uction
Esophagea:E sophagitis,forei gnbody,corrosi vei ngestion,hi atalherni a
Stomach:Forei gnbody,bezoar,chroni cgranul omatousdi sease
Intestinalobstructi on:P yloricchannel ul cer,i ntramuralhem atoma,m alrotation, volvulus,M eckeldi verticulitis,m econiumi leusi ncysti cfi brosis,i ncarcerated hernia,i ntussusception,H irschsprungdi sease,ul cerativecol itis,C rohn disease,superi orm esentericarterysyndrom e
Othergastr ointestinalcau ses: Annularpancreas,paral ytici leus,hypokal emia, Helicobacterpyl orii nfection,peri tonitis,pancreati tis,cel iacdi sease,vi ralor bacterialenteri tis,hepatobilia ryd isease,g allstonei leus,H enoch-Schönlein purpura.
Neurologic: Increasedi ntracranialpressure,Lei ghdi sease,m igraine,m otion sickness,sei zures
Renal: Obstructi veuropathy,renal i nsufficiency,stones
Infection: Meningitis,sepsi s,pyel onephritis,oti tism edia,si nusitis,hepati tis,parasi tic infestation,streptococcal pharyngi tis,I abyrinthitis
Metabolic: Inbornerrorsofm etabolism,aci dosis,di abeticketoaci dosis,adrenal insufficiency
Drugs/toxins: Aspirin,di goxin,i ron,I ead,i pecac,el icitdrugs
Torsiono fth etestiso ro vary
Blood
Radiation/chemotherapy
Reyes yndrome
Postoperativevo miting
Cyclicv omiting
Pregnancy
Psychologic: Bulimianervosa,anorex ianervosa,stress,M unchausensyndrom eby proxy

JaundiceandHepatitis

ChiefCo mplaint: Jaundice.
History of P resent Illness: T iming, progressi on, di stribution of j aundice. Abdominalpai n,anorex ia,vom iting,fever,dark uri ne,pr uritus,arthral gias, rash,di arrhea.Gradual ,caudal progressi on ofj aundice(phy siologicj aundice orbreast-feedi ngj aundice),bl oodpr oducts,r awsh ellfish,d ayca rece nters, foreigntravel .
PastM edicalH istory: H epatitisserol ogies, liverfuncti ontests,l iverbi opsy, hepatitisi mmunization.
PerinatalHi story: Courseofthepregnancy , illnesses,infections,m edications taken d uring th e p regnancy. I nability to p ass m econium (cystic fib rosis), failure to thrive, irritability . New born hy poglycemia, lethargy after the first formulafeedi ngs (carbohydratem etabolicdi sorders).
Medications:A cetaminophen,i soniazid,pheny toin.
FamilyH istory: Liverdisease,fam iliaJaundice,lungdisease,alpha $_1$-antitrypsin deficiency.H istoryofperi natali nfantdeath(m etabolicdi sorders).
SocialH istory:I Vdrugabuse,al cohol,ex posuretohepati tis.

HistoricalF indingsin Jau ndice	
Neonate	**OlderCh ild**
Familyhi story:F amilialjaundice, emphysema,i nfantdeaths **Prenatalhistor y:**I nfectionin pregnancy,m aternalri sk forhepati tis,m edications **Perinatalhi story:** Hypoglycemia,vom iting,l eth-argyw ithfeedi ngs,fai lureto passm econium, icterus,achol icstool s.	**Acuteilln ess** **Failureto th rive** **Familyh istoryo fjau ndice** **Exposure:**B loodproducts,raw shellfish,travel ,drugabuse

PhysicalE xamination

GeneralA ppearance: Signsofdehy dration,septicappearance,irritability . Note whetherthepati entl ooks "ill"or well.

VitalSi gns:P ulse,B P,respi ratoryrate,tem perature(fever).

Skin: E cchymoses, ex coriations, j aundice, urti caria, bronz e di scoloration (hemochromatosis), di ffuse rash (peri natal i nfection). M alar rash, di scord lesions(l upus),ery thematousscal ingpapul es(cy sticfi brosis).

LymphN odes:C ervicalori nguinall ymphadenopathy.

Head: C ephalohematoma, hy pertelorism, hi gh forehead, l arge fontanelle, pursedl ips(Zel lwegersy ndrome),m icrocephaly.

Eyes: S cleral i cterus, cataracts, K ayser-Fleischer ri ngs (bronz e corneal pigmentation,W ilson'sdi sease),x anthomas(chroni cl iverdi sease).

Mouth: Sublingualj aundice.

Heart:R hythm,m urmurs.

Chest: Gy necomastia,breathsounds.

Abdomen:B owelsounds,brui ts,ri ght upperquadranttenderness;l iverspan, hepatomegaly; l iver m argin tex ture (bl unt, i rregular, firm, smooth), splenomegaly;asci tes.

Extremities: Joi nt tenderness, j oint sw elling, pal mar ery thema, edem a, anasarca.Jaundi ce,ery thematousnodul esovershi ns(ery themanodosum).

Neurologic: Lethargy ,hy potonia,neurom usculardefi cits.

Rectal:P erianalsk intags(i nflammatorybow eldi sease),hem orrhoids,occul t blood.

ScreeningLabs

Completebl oodcount,pl atelets,di fferential,sm ear
AST,A LT,GGT ,al kalinephosphatase
Totalandfractionatedbilirubin
Protein,al buminl evels
INR,PT T
Stoolcol or

AssessmentLabs

Infection

- Culturesofbl ood,uri ne,cerebrospi nalfl uid
- Serologies:T oxoplasmosis,rubel la,cy tomegalovirus,herpes,hepati tis panel,sy philis,E pstein-Barrvirus

Metabolic

- $Alpha_1$-antitrypsinl evelandP ity ping
- Thyroxineandthy roidsti mulatinghorm one
- Metabolicscreen:U rine/serumam inoaci ds
- Sweatchl oridetest
- Ceruloplasmin,uri narycopperex cretion
- Toxicologyscreen

Structural

- 24-hourduodenalintubationforbilirubinex cretion
- Ultrasound
- Radionuclideorhepatobiliary scan
- Operativechol angiogram

Autoimmune/inflammatory: ESR, ANA

PathologicD iagnosis

Liverbi opsy

Bonem arrowbi opsy(enz ymedefi ciency,hem oglobinopathies,hem olytic anemias)

NonpathologicC auses
Physiologicj aundice
Breastm ilkj aundice
PathologicC auses
Unconjugatedh yperbilirubinemia
Bilirubino verproduction
- ABO/Rhin compatibility
- Hemoglobinopathies
- Erythrocytem embranedefects
- Polycythemia
- Extravascularbl ood

Increaseduptake
- Increasedenterohepati cuptake
- Intestinalobstructi on

Genetic
- Crigler-NajjartypesIandII
- Gilbertsyndrom e

Miscellaneous
- Hypothyroidism
- Sepsis,uri narytracti nfection
- Hypoxia,aci dosis
- Hypoglycemia
- Maternaldi abetesm ellitus
- Highi ntestinalobstructi on
- Drugs
- Fattyaci ds(hyperal imentation)
- Lucy-Driscollsyndr ome

Conjugatedh yperbilirubinemia
Anatomic
- Extrahepatic
  - Biliarya tresia
  - Bileductstenosi s
  - Choledochalcyst
  - Bileductperforati on
  - Biliarysl udge
  - Biliaryst oneorneopl asm
- Intrahepatic
  - Alagillesyn drome
  - Nonsyndromici nterlobularductal hypoplasia
  - Carolidi sease
  - Congenitalhepati cfi brosis
  - Inspissatedbi le

Conjugatedh yperbilirubinemia(co n-tinued)
Metabolic/genetic
- Alpha1-antitrypsindefi ciency
- Galactosemia
- Fructosei ntolerance
- Glycogenstoragedi sease
- Tyrosinemia
- Zellwegersyndrom e
- Cysticfi brosis

Excretorydefects
- Dubin-Johnsonsyndrom e
- Rotorsyndrom e
- Summerskills yndrome
- Bylerdi sease

Infections
- TORCH(toxoplasmosis,o ther agents,rubel la,cytom egalovirus, herpessi mplex)
- Syphilis
- HIV
- Varicella-zosterv irus
- Coxsackievirus
- Hepatitis(A ,B ,C ,D ,andE)
- Echovirus
- Tuberculosis
- Gram-negativei nfections
- Listeriam onocytogenes
- Staphylococcusaureus
- Sepsis,uri narytracti nfections

Miscellaneous
- Trisomies17,18,21
- Totalparenteral nutri tion
- Postoperativej aundice
- Extracorporealm embraneox ygena-tion
- Idiopathicneonatal hepati tis

DifferentialDiag nosiso fJau ndicein Old erCh ildren

Metabolic/Genetic
Gilbertsyndrom e
Dubin-Johnsonsyndrom e
Rotorsyndrom e
Cysticfi brosis
Indianchi ldhoodci rrhosis
Wilsondi sease
Tyrosinemia
Alpha$_1$-antitrypsindefi ciency

Anatomic
Carolidi sease
Congenitalhepati cfi brosis
Choledochalcyst
Cholelithiasis
Pancreasandpancreati cduct abnormalities

Infections
Viral
- Hepatitis(A ,B ,C ,D ,E),C MV
- Epstein-Barrv irus

Infections(con tinued)
Viral
- Herpessi mplexvi rus
- Varicella-zosterv irus
- Adenovirus
- Enterovirus
- Rubellavi rus
- Arbovirus
- HIV
- Echovirus

Bacterial
- Sepsis
- Toxicshocksyndrom e
- Lymedi sease
- Rockym ountainspotted fever

Miscellaneous
- Viscerall arvalm igrans
- Schistosomiasis
- Reyesyndrom e

Hepatosplenomegaly

ChiefCo mplaint: Liverorspl eenenl arged.

History of P resent Illness: Duration of enl argement of the l iver or spl een. Acuteorchroni ci llness,fever,j aundice, pallor, bruising, weightl oss,fati gue, joint pain, j oint stiffness. Nutritional history, grow th del ay. Neurodevelopmentaldel ayorl ossofdevel opmentalm ilestones.

PastM edicalH istory: P reviousorganom egaly, neurologic symptoms.General health.

PerinatalHi story: P renatalcom plications,neonatal j aundice.

Medications: C urrentandpastdrugs,anti convulsants,tox ins.

FamilyH istory: S toragedi seases,m etabolic disorders, hepatic fibrosis,al pha$_1$-antitrypsindefi ciency.H istoryofneonatal death.

SocialH istory: Infections,tox in,ex posures,drugsoral cohol.

PhysicalE xamination

GeneralA ppearance: W asting,illappearance,m alnutrition.

VitalSi gns: B loodpressure,tem perature,pul se,respi rations.Grow thcurve.

HEENT: H ead si ze and shape, i cterus, cataracts (gal actosemia), K ayser-Fleischer ri ngs (W ilson di sease). Coarsening of faci al features (mucopolysaccharidoses).

Skin: E xcoriations,spi derangi omas(chroni cl iverdi sease, bilary obstruction of the biliary tract); pallor, petech iae, bruising (m alignancy, chronic liver disease);ery themanodosum (i nflammatorybow eldi sease,sarcoi dosis).

LymphN odes: Locati onandsi zeofl ymphadenopathy.

Lungs: Crackles,w heeze,rhonchi .

Abdomen: Distension,prom inentsuperficialveins(portalhy pertension), umbilical herni a, brui ts. P ercussion of fl anks for shi fting dul lness. Li ver span by

percussion,hepatom egaly. Liverconsi stencyandtex ture.S pleensi zeand texture,spl enomegaly.

Perianal: H emorrhoids (portal hy pertension), fi ssures, sk in tags, fi stulas (inflammatorybow eldi sease).

RectalE xam:M asses,tenderness.

Extremities:E dema,jointtende rness,jointsw elling,jointery thema(juvenile rheumatoidarthri tis,m ucopolysaccharidoses).C lubbing(hy poxia,i ntestinal disorders,hepati cdi sorders).

Growthcurvefai lure
Skin:Icterus,pal lor,edem a,pruri tus,spi dernevi ,petechi aeandbrui ses,rashes
Head--microcephalyorm acrocephaly
Eyes--cataracts(gal actosemia);K ayser-Fleischerri ngs(W ilsondi sease)
Nodes--generalizedl ymphadenopathy
Chest--adventitioussounds
Heart--gallop,tachycardi a,rub,pul susparadox us
Abdomen--ascites,l argeki dneys,prom inentvei ns,hepatospl enomegaly
Rectal--hemorrhoids,sphi nctertone,fi ssures,fi stulas,ski ntagsw ithi nflammatory boweldi sease
Neurologic--devel opmentaldel ay,dystoni a,trem or,absentrefl exes,atax ia

DifferentialD iagnosisofH epatosplenomegaly

PredominantS plenomegaly	PredominantH epatomegaly
Infection	CMV,syp hilis, neonatalhepati tis
Viral–Epstein-Barr,cytom egalovirus, parvovirusB 19	Hepatitis--A,B ,C ,D ,E ,tubercul osis, sarcoidosis,chroni cgranul omatousdi sease
Bacterial--endocarditis,shunti nfection	Drugs--alcohol,phenytoi n
Protozoal--malaria,babesi osis	Sclerosingchol angitis,i nfectious cholangitis
Hematologic	Abscess
Hemolyticanem ias	Chronicacti vehepati tis
Porphyrias	Cardiac--failure,peri carditis
Osteopetrosis,m yelofibrosis	Budd-Chiarisyndrom e
Vascular	Paroxysmalnocturnal hem oglobinuria
Portalvei nanom alies	Biliarya tresiao rh ypoplasia
Hepaticscarri ngorfi brosis	Choledochalcyst
Tumorandi nfiltration	Congenitalhepati cfi brosis
Cysts,hem angiomas,ham artomas	Childabuse--traum a
Lymphoreticularm alignancies	Galactosemia,gl ycogenstoragedi sease, fructosei ntolerance
Neuroblastoma	Tyrosinemia,ur eacycl edi sorders
	Cysticfi brosis
	Alpha$_1$-antitrypsindefi ciency
	Wilsondi sease,hem ochromatosis
	Fattychange:M alnutrition,obesi ty,al cohol,corti costeroids,di abetes
	Primaryorm etastatictum ors

AcuteD iarrhea

ChiefCo mplaint: Diarrhea.

HistoryofP resentIllness: D urationandfrequency ,ofdi arrhea;num berof stools per day, characteristicsofstool s(bl oody,m ucus,w atery,form ed, oily, foulodor);fever,abdom inalpai norcram ps,fl atulence,anorexi a,vom iting. Season (rotavi rus occurs i n the w inter). A mount of fl uid i ntake and food intake.

PastM edicalH istory:R ecenti ngestionofspoi ledpoul try(sal monella), spoiled milk, seafood (shri mp, shel lfish; V ibrio parahaem olyticus); com mon food sources (restaurants), travel hi story. I ll contacts w ith di arrhea, sex ual exposures.

FamilyHisto ry:C oeliacdi sease.

Medications A ssociated with D iarrhea: M agnesium-containing antaci ds, laxatives,antibiotics.

Immunizations: Rotavirusi mmunization.

PhysicalE xamination

General A ppearance: S ignsofdehy dration. N otew hetherthepati entl ooks septic,w ell,orm alnourished.

VitalSi gns:B P(hy potension),pul se(tachy cardia),respi ratoryrate, temperature(fev er).

Skin:T urgor,delay edcapillary refill,jaundice.

HEENT:D rym ucousm embranes.

Chest:B reathsounds.

Heart: Rhythm,gal lops,m urmurs.

Abdomen: D istention, hi gh-pitched rushes, tenderness, spl enomegaly, hepatomegaly.

Extremities: Joi ntsw elling,edem a.

Rectal:S phinctertone,guai actest.

LaboratoryE valuation: Electrolytes, CBCw ithdi fferential.Gram 'sstai n of stool forl eukocytes.C ulturesforenteri cpathogens,stool forovaandparasi tesx 3;stool andbl oodforcl ostridiumdi fficiletox in;bl oodcul tures.

Stool occult blood. Stool culturesforchol era,E .col i0157:H 7,Y ersinia;rotavi rus assay.

DifferentialD iagnosisofA cuteD iarrhea: Rotavir us,Nor walkvir us,salm onella, shigella, E coli, Cam pylobacter, B acillus cereus, traveler's diarrhea, antibiotic-relateddi arrhea.

ChronicD iarrhea

ChiefCo mplaint: Diarrhea.

History of P resent Illness: D uration, frequency , and ti ming of di arrheal episodes.V olumeofstool output(num berofstool sperday).E ffect of fasting ondi arrhea. Prior dietarym anipulationsandthei reffectonstool ing.Form ula changes, fever, abdom inal pai n, fl atulence, t enesmus (pai nful urge to defecate),anorex ia,vom iting,m yalgias,arthral gias,w eightl oss,rashes.

StoolA ppearance:W atery,form ed,bl oodorm ucus,oi ly,foul odor.

Travelhi story,l axative abuse,i nflammatorybow eldi sease.S exualex posures, AIDSri skfactors.E xacerbationby stress.

PastM edicalH istory:P atternofstool ingfrom bi rth.Grow th deficiency, weight

gain.T hree-dayd ietaryr ecord,illco ntacts.

Medications and S ubstances A ssociated with D iarrhea: Lax atives, magnesium-containingantaci ds,chol inergicagents,m ilk (lactase deficiency), gum(sorbi tol).

Family H istory: Fam ily m embers w ith di arrhea, m ilk i ntolerance, coel iac disease.

Social H istory: W ater suppl y, m eal p reparation, sa nitation, p et o r a nimal exposures.

HistoricalFindingsinC hronicD iarrhea	
Ageofonset Stoolcharacteri stics Diet(new food/form ula) Growthdel ay Familyhi storyofal lergy;geneti c,m eta-bolic,ori nbornerrors	Secretorysym ptoms:Largevol ume, waterydi arrhea Osmoticsym ptoms:Largenum bersof softstool s Systemicsym ptoms:Fever,nausea, malaise

PhysicalE xamination

GeneralA ppearance:S ignsofdehy drationorm alnutrition.S eptic appearance. Notew hetherthepati entl ooks “ill,”w ell,orm alnourished.

VitalSi gns: Grow thpercenti les,pul se(tachy cardia),respi ratoryrate,tem pera-ture (fever), bl ood pressure (hypertension, neurobl astoma; hy potension, dehydration).

Skin: T urgor, delay ed capillary refill, jaundice, pallor (anem ia), hair thinning, rashes, erythemanodosum ,py odermagangrenosum , maculopapular rashes (inflammatorybow eldi sease),hy perpigmentation(adrenal i nsufficiency).

Eyes:B itotspots(vi taminA defi ciency),adenopathy .

Mouth: Oral ulcers (Crohndi sease,coel iacdi sease),dry m ucousm embranes; cheilosis(crack ed lips, riboflavindefi ciency);gl ossitis(B 12,fol atedefi ciency); oropharyngealcandi diasis(A IDS).

LymphN odes: Cervical,ax illary,inguinally mphadenopathy.

Chest: Thoracicshape,crack les,w heezing.

Abdomen: Distention (m alnutrition), hy peractive, bow el sounds, tender ness, masses,pal pablebow ell oops,pal pable stool. Hepatomegaly, splenomegaly.

Extremities: Joint tenderness, sw elling (ulcerative colit is); gluteal w asting (malnutrition),dependentedem a.

Genitalia:S ignsofchi ldabuseorsex ualacti vity.

PerianalE xamination:S kintagsandfi stulas.

Rectal:P erianalorrectal ul cers,sphi nctertone,tenderness, masses, impacted stool,occul tbl ood,sphi ncterrefl ex.

Neurologic: Mentalstatuschanges ,peri pheralneuropathy (B 6,B 12defi ciency), decreased peri anal sensati on. A taxia, di minished deep tendon reflexes, decreasedpropri oception.

PhysicalE xaminationFindingsinC hronicD iarrhea	
Poorgrow th	Clubbing
Hypertension	Lungcrackl es,w heezing
Fever	Abdominalm ass
Jaundice	Organomegaly
Rash	Abnormalgeni talia
Erythemanodosum	Perianaltags
Pyodermagangrenosa	Rectali mpaction
Edema	Ataxia,decreaseddeeptendonrefl exes

LaboratoryE valuation: E lectrolytes,C BCw ith differential.W right'sstai nfor fecal l eucocytes; cul tures for enteri c pathoge ns, ova and parasi tes x 3; clostridiumdi fficiletox in.S toolcarbohy dratecontent. Stoolforoccul tbl ood, neutralfat(m aldigestion);spl itfat(m alabsorption).

SmallInfantsandB abies
Chronicnonspeci ficdi arrheaofi nfancy/postinfectiousdi arrhea
Milkandsoy protei ni ntolerance
Protractedi nfectiousenteri tis
Microvillousi nclusiondi sease
Celiacd isease
Hirschsprung'sdi sease
Congenitaltransportdefects
Nutrientm alabsorption
Munchausen'ssy ndromeby prox y

Toddlers
Chronicnonspeci ficdi arrhea
Protractedvi ralenteri tis
Giardiasis
Sucrasei somaltasedefi ciency
Tumors(secretotory di arrhea)
Celiacd isease
Ulcerativeco litis

School-AgedC hildren
Inflammatorybow eldi sease
Appendicealabscess
Lactasedefi ciency
Constipationw ithencopresi s
Laxativeabuse
Giardiasis

Constipation

ChiefCo mplaint: Constipation.

HistoryofP resentIllness: S toolfrequency , consistency, size;stool ingpattern birth to the present. E ncopresis, bul ky, fatty stool s, f oul odor. H ard stool s, painfuldefecati on, strai ning, streaks of bloodonstool s.D ehydration,uri nary incontinence,enuresis.A bdominalpain,fever.Recentchange indiet.S oiling characteristicsandti meofday .A restool sf ormedorscy balous(sm all,dry , rabbit-likepel lets)?W ithholdingbehavi or.

Dietary H istory: E xcessive cow 's m ilk or l imited fi ber consum ption; breast-feeding.

PastM edicalH istory: R ecenti llness,bedrest,fever.

Medications A ssociated with C onstipation: Opi ate anal gesics, al uminum-containingantaci ds,i ronsuppl ements,anti histamines,anti depressants.

SocialH istory: Recentbi rthofasi bling,em otionalstress,housi ngm ove.

FamilyHisto ry: C onstipation.

PhysicalE xamination

General A ppearance: D ehydrationorm alnutrition. S epticappearance,w eak cry. N otew hetherthepati entl ooks "ill,"w ell,orm alnourished.

Vital Si gns: BP (hy pertension, pheochrom ocytoma), pul se, respi ratory rate, temperature. Grow thpercenti les,poorgrow th.

Skin: Ca féaul aitspots(neurofi bromatosis),j aundice.

Eyes: Decreasedpupillary response,icterus.

Mouth: C heilosis(crack ed lips,ri boflavindefi ciency),oral ul cers(i nflammatory bowel, coel iac di sease), dry m ucous membranes, gl ossitis (B 12, fol ate deficiency),orophary ngealcandi diasis(A IDS).

Abdomen: D istention, peri staltic w aves, w eak abdom inal m usculature (muscular dy strophy, prune-bel ly sy ndrome). H yperactive bow el sounds, tenderness, hepatom egaly. P alpable stool , fecal m asses above the pubi c symphysisandi nthel eftl owerquadrant.

Perianal: Anteriorectopi canus,anteri oranal di splacement. A nal fissures, ex-coriation, dermatitis,perianalulcers. Rectalprolapse. S oilingintheperianal area. S phincterrefl ex: Gentl e rubbi ng ofthe peri anal sk inresul ts i n reflex contractionoftheex ternalanal sphi ncter.

Rectal: S phincter tone, rectalul cers,tenderness,hem orrhoids,m asses. S tool inacavernousam pulla,occul tbl ood.

Extremities: Jointtenderness,jointsw elling(ulcerativecolitis).

Neurologic: D evelopmentaldel ay,m entalretardati on,peri pheralneuropathy (B6,B 12defi ciency),decreasedperi analsensati on.

LaboratoryE valuation: E lectrolytes,CB Cw ithdifferential,calcium .

AbdominalX -ray: A irfl uidl evels,di lation,pancreati ccal cifications.

DifferentialD iagnosisofC onstipationi nN eonatesandYoung Infants	
Meconiumi leus Meconiumpl ugsyndrom e Functionali leusofthenew born Smalll eftcol onsyndrom e Volvulus Intestinalw eb Intestinalstenosi s Intestinalatresi a Intestinalstri cture(necroti zing enterocolitis) Imperforateanus Analstenosi s Anteriorectopi canus Anterioranal di splacement	Hirschsprungdi sease Acquiredagangl ionosis Tumors Myelodysplasia Hypothyroidism Maternalopi ates Inadequatenutri tion/fluids Excessivecow 'sm ilkconsum ption Absenceofabdom inalm usculature (prune-bellysyndrom e) Cerebralpal sy

DifferentialDiag nosiso fCo nstipationin Old erIn fantsan dCh ildren	
PhysiologicC auses Breastm ilk,cow 'sm ilk,l owroughage Deficientf luid:F ever,h eat,im mobility, anorexianervosa **VoluntarySt oolW ithholding** Megacolon Painfuldefecati on:A nalfi ssure, perianalderm atitis,hem orrhoids Behaviorali ssues Mentalretardati on **NeurogenicD isorders** Hirschsprungdi sease Intestinalpseudoobstructi on Cerebralpal sy Myelomeningocele Spinalco rdi njury Transversem yelitis Spinaldysraphi sm Neurofibromatosis Myopathies Rickets Prune-bellysyndrom e	**Endocrinean dM etabolicD isorders** Hypothyroidism Diabetesm ellitus Pheochromocytoma Hypokalemia Hypercalcemia Hypocalcemia Diabetesi nsipidus Renaltubul araci dosis Porphyria Amyloidosis Lipidstoragedi sorders **MiscellaneousD isorders** Analorrectal stenosi s Anteriorlypl acedanus Appendicitis Celiacdi sease Scleroderma Leadpoi soning Viralhepati tis Salmonellosis Tetanus Chagasdi sease Drugs

HematemesisandU pperG astrointestinalB leeding

ChiefCo mplaint:V omitingbl ood.

History ofP resentIllness: D urationandfrequency ofhem atemesis,characteristicsofvom itus(bri ght red blood, coffeegroundm aterial),vol umeofbl ood, hematocrit. Forceful retchi ng pri or to hem atemesis (M allory-Weiss tear).

Abdominal pain, melena,hem atochezia;pepti cul cer,pri orbl eedingepi sodes, nosebl eeds.W eightl oss,anorex ia,j aundice;bri ghtredfoods,dri nks.

PastM edicalH istory:D iabetes,bl eedingdi sorders,renal failure, liver disease. Gastrointestinalsur gery.

Medications:A lcohol, aspirin, nonsteroidalanti -inflammatorydrugs,anti coagulants,steroi ds.

PhysicalE xamination

General A ppearance: P allor, di aphoresis, confusi on, dehy dration. N ote whetherthepati entl ooks "ill,"w ell,orm alnourished.

Vital Si gns: S upine and u pright pul se and bl ood pressure (orthostati c hypotension) (resti ng tachy cardia i ndicates a 10-20% bl ood vol ume l oss; posturalhy potensioni ndicatesa20-30% bl oodl oss),tem perature.

Skin: Delayed capillary refill, pallor, petechiae. Hem orrhagic telangiectasia (Osler-Weber-Rendu sy ndrome), abnorm al pi gmentation (P eutz-Jeghers syndrome),j aundice,ecchy moses(coagul opathy),i ncreasedsk inel asticity (Ehlers-Danlossy ndrome).

Eyes: Scle ralp allor.

Mouth: Orophary ngeal lacerations, nasalbl eeding,l abialandbuccal pi gmentation(P eutz-Jegherssy ndrome).

Chest: Gy necomastia,breathsounds.

Heart:S ystolicej ectionm urmur.

Abdomen: Dila ted abdominal ve ins, b owel s ounds, di stention, tenderness, masses,hepati catrophy ,spl enomegaly.

Extremities:E dema,col dex tremities.

Neurologic:D ecreasedm entalstatus,gai t.

Rectal: Masses, hemorrhoids.P olyps,fi ssures;stool col or,occul t blood testing.

LaboratoryE valuation:C BC,pl ateletcount,reti culocytecount,i nternational normalized rati o (I NR), parti al throm boplastin ti me (P TT), b leeding t ime, electrolytes,B UN,creati nine,gl ucose.T ypeandcross-m atchfor2-4uni ts of packedR BCandtransfuseasneeded.A LT,A ST,GGT P,gl ucose,el ectrolytes.E sophagogastroduodenoscopy, colonoscopy, Meckel'sscan,bl eeding scan.

Age	Common	LessC ommon
Neonates(0-30 days)	Swallowedm aternalbl ood, gastritis,duodeni tis	Coagulopathy,vascul arm alformations,gastri c/esophagealdupl ication,l eiomyoma
Infants(30day s-1y ear)	Gastritis,gastri cul cer,esophagitis,duodeni tis	Esophagealvari ces,forei gn body,aortoesophageal fistula
Children(1-12 years)	Esophagitis,esophageal varices,gastri tis,gastri c ulcer,duodenal ul cer, Mallory-Weisstear,nasopharyngealbl eeding	Leiomyoma,sal icylates,vasculiarm alformation, hematobilia,N SAIDs

60M elenaandLower Gastr ointestinalB leeding

Age	Common	LessC ommon
Adolescents(12 years-adult)	Duodenalul cer,esopha-gitis,esophageal vari ces, gastritis,M allory-Weiss tear	Thrombocytopenia,D ieula-foy'su lcer,h ematobilia

MelenaandLow erG astrointestinalB leeding

ChiefCo mplaint: Analbl eeding

HistoryofP resentIllness: D uration,quanti ty,co lorofbl eeding(grossbl ood, streaksonstool ,m elena),recent hematocrit. Change inbow elhabi ts,change instool cal iber,abdom inalpai n, fever.C onstipation,di arrhea,anorectal pai n. Epistaxis,anorex ia,w eightl oss,m alaise,vom iting.

Fecal m ucus, ex cessive strai ning duri ng defecati on. C olitis, pepti c ul cer, hematemesis.

PastM edicalH istory:B ariumenem a,col onoscopy, sigmoidoscopy, upper GI series.

Medications:A nticoagulants,aspi rin,N SAIDs.

PhysicalE xamination

GeneralA ppearance: De hydration,p allor.No tew hetherth ep atientlo oksill, well,orm alnourished.

VitalSi gns:B P(orthostati chy potension),pul se,respi ratoryrate,tem perature (tachycardia).

Skin: Delay ed capillary refill, pallor, jaundice. S pider angiom ata, ras hes, purpura.

Eyes:P aleconjunctiva,icterus.

Mouth: B uccal m ucosa di scolorations or pi gmentation (H enoch-Schönlein purpuraorP eutz-Jegherssy ndrome).

Chest:B reathsounds.

Heart:S ystolicej ectionm urmurs.

Abdomen: M asses, di stention, tender ness, hernias, liver atrophy, splenomegaly.

Genitourinary:T esticularatrophy .

Extremities:C old,pal eex tremities.

Neurologic:A nxiety,confusi on.

Rectal:H emorrhoids,m asses;fi ssures,pol yps,ul cers.Grossoroc cultbl ood.

LaboratoryE valuation:C BC(anem ia),l iverfuncti ontests.A bdominal x-ray series(thum bprinting,ai rfl uidl evels).

Age	Common	LessC ommon
Neonates(0-30 days)	Anorectall esions,sw al-lowedm aternalbl ood, milka llergy,n ecrotizing enterocolitis,m idgut volvulus	Vascularm alformations, Hirschsprung'sentero-colitis,in testinald uplica-tion,coagul opathy

Age	Common	LessC ommon
Infants(30day s-1y ear)	Anorectall esions,m idgut volvulus,i ntussusception (under3years) Meckel'sd iverticulitis,in fectiousdi arrhea,m ilkproteina llergy	Vascularm alformations,in - testinaldupl ication,acqui r-edthrom bocytopenia
Children(1-12 years)	Juvenilepol yps,M eckel's diverticulitis,in tussusception(under3years), infectiousdi arrhea,anal fissure,nodul arl ymphoid hyperplasia	Henoch-Schönleinpurpura, hemolytic-uremicsyndrome,vascul itis(S LE), inflammatorybow eldi sease
Adolescents(12 years-adult)	Inflammatorybow eldi sease,pol yps, hemorrhoids,anal fi ssure,i nfectiousdi arrhea	Arteriovascularm alformation, adenocarcinoma,H enoch-Schönleinpurpura, Pseudomembranouscol itis

62M elenaandLower Gastr ointestinalB leeding

GynecologicDi sorders

Amenorrhea

ChiefCo mplaint:M issedperi od.

HistoryofP resentIllness: Dateofl astm enstrualperi od.P rimaryam enorrhea (absence of m enses by age 16) or secondary am enorrhea (cessati on of menses after previously normalm enstruation).A geofm enarche,m enstrual regularity; age of breast development;sex ualactivity ,possibility ofpregnancy , pregnancytesti ng.S ymptomsofpregnancy (nausea,breasttenderness).

Lifestylechanges,di eting,ex cessiveex ercise,drugs(m arijuana),psy chologic stress.H otfl ushes(hy poestrogenism), galactorrhea(prol actinoma).W eight lossorgai n,headaches,vi sionchanges.

PastM edicalH istory: Historyofdi lationandcurettage,postpartum i nfection (Asherman's sy ndrome), postpartum hem orrhage (S heehan's sy ndrome); priorpregnanci es.

Medications: C ontraceptives, tri cyclic antidepressants, di goxin, m arijuana, chemotherapeuticagents.

PhysicalE xamination

GeneralA ppearance: Secondary sexualcharacteri stics,body habi tus,obesi ty, deepvoi ce(hy perandrogenism).N otew hetherthepati entl ooks "ill"o rw ell.

VitalS igns: Pulse(brady cardia),tem perature(hy pothermia,hy pothyroidism), bloodpressure,respi rations.

Skin: A cne, hi rsutism, tem poral bal ding (h yperandrogenism, cool dry sk in (hypothyroidism).

Eyes:V isualfi elddefects,bi temporalhem ianopsia(pi tuitaryadenom a).

Neck:T hyroidenl argementornodul es.

Chest: Gal actorrhea,i mpairedbreastdevel opment,breastatrophy .

Heart:B radycardia(hy pothyroidism).

Abdomen:A bdominalstri ae(C ushing'ssy ndrome).

Gyn: Pubichai rdi stribution,i nguinalorl abialm asses,cl itoromegaly,i mperforatehy men,vagi nalseptum ,vagi nalatrophy ,uteri neenl argement,ov arian cystsor tum ors.

Extremities: Tremor(hy perthyroidism).

Neurologic:F ocalm otord eficits.

LaboratoryE valuation: Pregnancytest,prol actin,T SH,freeT_4.P rogesterone challengetest.

DifferentialD iagnosisofA menorrhea	
Pregnancy **Hormonalcon traception** **Hypothalamic-related:**S tress,athl et-ics,eati ngdi sorder,obesi ty,drugs tumor **Pituitary-related:**H ypopituitarism, tumor,i nfiltration,i nfarction **Ovarian-related:**D ysgenesis,agen-esis,ovari anfai lure	**Outflowtr act-related** Imperforatehym en Transversevagi nalseptum Agenesisofthevagi na,cervi x,uterus Uterinesynechi ae **Androgenexcess** Polycysticovar iansyndr ome Adrenaltum or Adrenalhyperpl asia Ovariantum or **Otheren docrinecau ses** Thyroiddi sease Cushingsyndrom e

AbnormalVaginalBleeding

ChiefCo mplaint: Abnormalvagi nalbl eeding.

HistoryofP resent Illness: Lastm enstrualperi od,num berofsoak edpadsper day; m enstrual regul arity, age of m enarche, durati on an d frequency of menses;passi ngofcl ots;postcoi talori ntermenstrualbl eeding;abdom inal pain, fever, lightheadedness; possibility of pregnancy , s exual activity , hormonalcontracepti on.

Psychologicstress,w eight changes, exercise. Changesi nhai rorsk intex ture.

PastM edicalH istory: Obstetri cal history.T hyroid,renal ,orhepati cdi sease; coagulopathies,endom etriosis,dental bl eeding.

FamilyHisto ry:C oagulopathies,endocri nedi sorders.

PhysicalE xamination

GeneralA ppearance: General body habi tus,obesi ty. Note whether the patient looks “ill”o rw ell.

Vital Si gns: Asse ss h emodynamic sta bility, ta chycardia, h ypotension, orthostaticvi tals;si gnsofshock .

Skin: P allor, hi rsutism, petechi ae, sk in tex ture; fi ne thi nning hair (hypothyroidism).

Neck:T hyroidenl argement.

Breasts: Masses,gal actorrhea.

Chest:B reathsounds.

Heart: Mu rmurs.

Gyn: C ervical m otion tenderness, adnex al tendernes s, uteri ne si ze, cervi cal lesions.

LaboratoryE valuation: C BC, pl atelets, beta-H CG, ty pe and screen, cervix culture for N. gonorrhoeae, Chlam ydia test, von W illebrand's screen, INR/PTT,bl eedingti me,pel vicul trasound.E ndometrialbi opsy.

DifferentialDiag nosiso fA bnormalV aginal Bleeding:C hronicanovul ation, pelvic inflammatory di sease, cervi citis, pregnancy (ectopi c pregnancy , spontaneous aborti on,m olarpr egnancy).H yperthyroidism,hy pothyroidism, adrenal di sease, di abetes mellitus. H yperprolactinemia, pol ycystic ovary syndrome, oral c ontraceptives, m edroxyprogesterone, anti coagulants, NSAIDs. C ervical pol yps, uteri ne m yoma endom etriosis, retai ned tampon, trauma,V onW illebrand'sdi sease.

PelvicPainandEctopicPregnancy

ChiefCo mplaint: Pelvispai n.

HistoryofP resentIllness: P elvic orabdom inalpai n(bi lateraloruni lateral), positivepregnancy test,m issedm enstrualperi od, abnormalvagi nalbl eeding (quantify). D ate of l astm enstrual period. sy mptoms of pregnancy (breast tenderness, bl oating); m enstrual i nterval, durati on, age of m enarche, characteristics ofpel vicpai n;onset,durati on,shoul der pain. Fever or vaginal discharge.

Past M edical H istory: S urgical hi story, sex ually transm itted di seases, Chlamydia, gonorrhea, obstetrical h istory. P rior p elvic i nfection, endometriosis,pri orectopi cpregnancy ,pel victum or,i ntrauterinedevi ce.

Medications: Oral contracepti ves.

PhysicalE xamination

GeneralA ppearance: Moderateo rse vered istress.N otew hethert hep atient looks “ill”o rw ell.

VitalSi gns: BP(orthostati chy potension),pul se(tachy cardia), respiratory rate (tachypnea),tem perature(l owfever).

Skin: Co ldsk in,p allor,d elayedca pillaryr efill.

Chest:B reathsounds.

Heart: Mu rmurs.

Abdomen: Cullen's sign (perium bilical dark ening, intraabdom inal blee ding), localthengeneral izedtenderness,reboundtenderness.

Pelvic: C ervical di scharge, cervi cal m otion tenderness; C hadwick's si gn (cervical cy anosis, pregnancy); H egar's sign (softeni ng of uteri ne i sthmus, pregnancy);enl argeduterus,adnex altenderness,cul -de-sacful lness.

LaboratoryE valuation: Quanti tative beta-HCG, transvaginalul trasound.T ype andhol d,R hty pe,C BC,U Aw ithm icro; GC, chlamydia culture.Laparoscopy .

DifferentialDiag nosiso fP elvicP ain

Pregnancy-Related C auses: Ectopic pregnancy , spontaneous aborti on, threatenedaborti on, incomplete abortion,i ntrauterinepregnancy w ithcorpus luteumbl eeding.

GynecologicD isorders:P elvic nflammatorydi sease,endom etriosis,ovari an cyst hem orrhage or rupture, adnex al torsi on, M ittelschmerz, primary dysmenorrhea,tum or.

NonreproductiveC ausesofP elvicP ain

Gastrointestinal: Appendicitis,i nflammatorybow eldi sease,m esenteric adenitis,i rritablebow elsy ndrome.

UrinaryTr act:U rinarytracti nfection,renal cal culus.

NeurologicDisorders

Headache

ChiefCo mplaint:H eadache

HistoryofP resentIllness: Qual ity ofpai n(dul l,band-l ike,sharp,throbbi ng), location(retro-orbi tal,tem poral, suboccipital,bi lateralor uni lateral); age of onset;ti me course ofty pical headache epi sode; rate ofonset(gradual or sudden); ti me of day , effect of supi ne posture. I ncreasing frequency . Progressioni nsev erity.D oestheheadachei nterferew ithnorm alacti vityor causethechi ldtostoppl aying?A wakening from sleep;anal gesicuse. "The worstheadacheever "(subarachnoi dhem orrhage).

Auraor Prodrome:V isualscotom ata,bl urredvi sion;nausea,vom iting, sensory disturbances.

AssociatedS ymptoms:N umbness,w eakness,di plopia,photophobi a,fever, nasaldi scharge(si nusitis),neck sti ffness(m eningitis).

Aggravating orR elievingFactor s: Reliefby anal gesicsorsl eep.E xacerbation byl ightorsounds,strai ning,ex ercising,o r changingp osition.E xacerbation byfoods(cheese),em otionalupset,m enses.

Past M edical H istory: Grow th del ay, devel opment del ay, al lergies, past illnesses.H eadi njuries,m otionsi ckness.A nxietyordepressi on

Medications:D osage,frequency of use, and effectofm edications.B irthcontrol pills.

FamilyHisto ry:M igraineheadachesi nparents.P arentaldescri ptionofth eir headaches.

Social H istory: S chool absences. S tressful events. E motional probl ems at homeorinschool.Cigarettes,alcohol,illegaldrugs.

ReviewS ystems: Changesinpersonality ,m emory,intellectualsk ills,vision, hearing, st rength, g ait, o r b alance. P ostural l ightheadedness, w eakness, vertigo.

PhysicalE xamination

GeneralA ppearance:N otew hetherthepati entl ooks "ill"o rw ell;in teraction withparents;sadorw ithdrawn?

Vital Si gns: B P (hy pertension), pul se, tem perature (fever), re spiratory rate. Height, weight, head circumference;grow thpercenti les.W eightl oss,l ack of lineargrow th.

Skin: Pallor, petechi ae, brui ses. Alopecia, rashes, and pai nless oral ul cers. Caféaul aitspotsi n theax illaeori nguinalareas(neurofi bromatosis).Faci al angiofibromas(adenom asebaceum).

Head:M acrocephaly, cranialtenderness, tem poraltenderness. Dilated scalp veins,frontal bossi ng.S inusestenderness(si nusitis)topercussi on,tem poral bruits(arteri ovenousm alformation).

Eyes: Downward devi ation of the ey es (" sunset-ring" i ncreased i ntracranial pressure),ex traocularm ovements,pupi lreacti vity;papi lledema,vi sualfi eld deficits.C onjunctivali njection,l acrimation(cl usterheadache).

Nose: Rhinorrhea(cl usterheadache).

Mouth:T ooth tenderness,gi ngivitis,phary ngeal ery thema.M asseterm uscle spasm,restri ctedj awopeni ng(T MJdy sfunction).

Neck:R igidity,neck m uscletenderness.

Extremities: A bsent fem oral pul ses, l ower bl ood pressures i n the l egs (coarctationoftheaorta).

NeurologicE xamination:M entalstatus,crani alnerve function, motorstrength, sensation, deep tendon refl exes. D isorientation, m emory i mpairment, extraocular muscle dy sfunction, spasti city, hy perreflexia, cl onus, B abinski sign,atax ia,coordi nation.

LaboratoryE valuation:E lectrolytes,E SR.CB C withdifferential,l NR/PTT,M RI scan.

RecurrentandC hronicH eadaches:Tem poralP atterns

AcuteR ecurrentH eadache	**ChronicP rogressiveH eadache**
Migraine	Centralner voussystem i nfection
Clusterheadache	Hydrocephalus
Acutesi nusitis	Pseudotumorcerebri
Hypertension	Braintum or
Intermittenthydrocephal us	Vascularm alformation
Vascularm alformation	Subduralhem atoma
Subarachnoidhem orrhage	Arnold-Chiarim alformation
Carbonm onoxidepoi soning	Leadpoi soning
ChronicN onprogressive Headache	
Tension-typeheadache	
Chronicsi nusitis	
Oculardi sorder	
Dentalabscess,tem poromandibular jointsyndrom e	
Postlumbarpuncture	
Posttraumaticheadache	

Seizures,SpellsandUnusualM ovements

ChiefCo mplaint: Se izure

History of P resentI llness: T ime of onset of sei zure, durati on, toni c-clonic movements,descri ptionofsei zure,frequency ofepi sodes,l ossof consciousness. P ast sei zures, noncompliance w ith anti convulsant m edication. A ura beforeseiz ure(irritability ,behavioralchange, lethargy), incontinence ofurine orfeces,post-i ctalw eaknessor paralysis, injuries.C anthepati enttel lw hen anepisodew illstart?W arningsigns, triggersfor the spells(cry ing, anger, boredom,anx iety,fever,traum a).D oeshespeak during thespel l?D oesthe child remember the spells afterward?W hati sthechi ldl ikefterthe episode (confused,al ert)?C anthechi lddescri bew hathappens?

Past M edical H istory: I llnesses, hospi talizations, previ ous funct ioning, rheumaticfever.E lectroencephalograms,C Tscans.

Medications:A ntidepressants,sti mulants,anti seizurem edications.

FamilyH istory: S imilarepi sodesi nfam ily,epi lepsy,m igraine,ti cs,trem ors, Tourette sy ndrome,sl eep di sturbance. Rheumatic fever, streptococcal i nfectionl iverdi sease,m etabolicdi sorders.

PhysicalE xamination

GeneralA ppearance: P ost-ictall ethargy. N otew hetherthepati entl ooksw ell orill. Observethepatientperform ingtask s(ty ingshoes,w alking).

Vital Si gns: Grow th percenti les, B P (hy pertension), pul se, respi ratory rate, temperature(hy perpyrexia).

Skin: Ca fé-au-lait spots, neurofi bromas (V on R ecklinghausen's di sease). Unilateral port-w ine faci al nevus (S turge-Weber sy ndrome); faci al angiofibromas (adenom a sebaceum), hypopigmented ash l eaf spots (tuberousscl erosis).

HEENT: H eadtraum a, pupi lreacti vityand equal ity, ex traocularm ovements; papilledema, gum hyperplasia (phenytoin); tongueorbuccal l acerations; neck rigidity.

Chest: R honchi,w heeze(aspi ration).

Heart: R hythm,m urmurs.

Extremities: C yanosis,fractures,traum a.

Perianal: I ncontinenceofuri neorfeces.

Neuro: D ysarthria,vi sualfi elddefi cits,crani alnervepal sies,sensory defi cits, focalw eakness(T odd'sparal ysis),B abinski'ssi gn,devel opmentaldel ay.

Laboratory E valuation: Gl ucose, el ectrolytes, C BC, uri ne tox icology, anticonvulsantl evels,R PR/VDRL,E EG,M RI,l umbarpuncture.

DifferentialDiag nosiso fS eizures,S pells,an dUn usualM ovements	
Epilepsy **Movementdisor ders** Tics Myoclonicsyndrom es Sleep Benign Hyperexplexia(ex aggeratedstar-tleresponse) Myoclonus-opsoclonus Shudderingspel ls Dystonia Torsion Transientt orticollis Sandifersyndrom e Drugs Dyskinesias Metabolic/genetic Reflexdystrophy Nocturnal Physiologic	Choreoathetosis Benign Familial Paroxysmal Sydenhamchorea Huntingtonchorea Drugs **Behavioral/PsychiatricD isorders** **Pseudoseizures** **Automatisms** **Dyscontrols yndrome** **Attention-deficith yperactivitydisor - der** **Benignpar oxysmalv ertigo** **Migraine** **Parasomnias** **Syncope** **Breathholdingsp ells**

Apnea

ChiefCo mplaint: Apnea.

HistoryofP resent Illness: Lengthofpausei nrespi ration. C hangei nsk incol or (cyanosis, pal lor), hy potonia or hy pertonia, resusci tative ef forts (rescue breaths, chestcom pressions). S tridor, w heezing, body posi tion duri ng the event, state of consci ousness before, duri ng and after the event . Unusual movements, i ncontinence, posti ctal confusi onal state. R egurgitation after feedings. V omitusi noral cavi tyduri ngtheevent.

Loudsnori ng, nocturnal enuresis, excessiveday timesl eepiness;pri oracutel ife-threateningevents(A LTEs).M edications accessible to the childi nthehom e.

PastM edicalH istory:A bnormalgrow th,devel opmentaldel ay,asthm a.

PerinatalH istory:P renatalex posuretoi nfectiousagents,m aternalex posure to opioids,di fficultiesduri ngl aboranddel ivery. Respiratoryd ifficultiesa fter birth.

Immunizations:P ertussis.

FamilyH istory: Geneticorm etabolic disorders,m entalretardati on,consang-uinity,fetal l oss, neonatal death, suddeni nfantdeathsy ndrome,el icitdrugs, alcohol.

Socialhistor y:P hysicalabuse,p revious involvementofthefam ilyw ithchi ld protectiveservi ces.

PhysicalE xamination

GeneralA ppearance:S epticappearance,l evelofconsci ousness.

Vital S igns: Length, w eight, head ci rcumference percenti les. P ulse, blood pressure,respi rations,tem perature.

Skin: Co ol,m ottlede xtremities;d elayedca pillaryr efill,b ruises,sca rs.

Nose:N asalfl aring,n asalsecreti ons,m ucosalery thema,obstructi on,septal deviationorpol yps.

Mouth:S tructureofthelips,tongue,palate;tonsillarlesions,m asses.

Neck:M asses,enl argedl ymphnodes,enl argedthy roid.

Chest:I ncreasedrespi ratory effort,i ntercostalretracti ons,barrel chest.I rregular respirations, peri odic breathi ng, prol onged pauses i n respi ration, stri dor. Grunting,w heezing,crack les.

Heart: Rateandrhy thm,S 1,S 2,m urmurs.P reductalandpostductal pul se delay (rightarm andl egpul secom parison).

Abdomen:H epatomegaly,nephrom egaly.

Extremities:D ependentedem a,di gitalcl ubbing.

Neurologic:M entalstatus,m uscletone,strength.C ranialnervefuncti on, gag reflex.

Laboratory E valuation: Gl ucose, el ectrolytes, B UN, creati nine, cal cium, magnesium,C BC,E CG,O_2saturation.

DifferentialD iagnosisofA pnea

CentralN ervousS ystem
- Dandy-Walkerm alformation
- Arnold-Chiarim alformation
- Seizures
- Hypotonia,w eakness
- Ondine'scurse

Metabolic/Toxic
- Hypoglycemia
- Hypocalcemia
- Hyponatremia
- Acidosis
- Hypomagnesemia
- Opioids
- Medium-chainacyl -CoA dehydrogenasedefi ciency

UpperA irway
- Craniofacialsyndrom es
- Laryngomalacia
- Rhinitis
- Choanalstenosi s/atresia
- Croup

UpperA irway(con tinued)
- Adenotonsillarh ypertrophy
- Epiglottitis
- Post-extubation
- Vocalcor dpar alysis
- Anaphylaxis

LowerA irway
- Pneumonia
- Bronchiolitis
- Pertussis

Cardiovascular
- Structuraldi sease
- Dysrhythmia

Gastrointestinal
- Gastroesophagealrefl ux

Miscellaneous
- Sepsis
- Meningitis
- Munchausensyndrom ebyprox y

Delirium,ComaandConfusion

ChiefCo mplaint: Confusion.

HistoryofP resentIllness: Level ofconsci ousness,obtundati on(aw ake but not alert), stupor (unconscious but aw akable w ith vi gorous sti mulation), com a (cannotbeaw akened).C onfusion,i mpairedconcentrati on, agitation. Fever, headache.A ctivityandsy mptomspri ortoonset.

Past M edical History: S uicide attem pts or depressi on, epi lepsy (post-i ctal state).

Medications:I nsulin,narcoti cs,drugs,anti cholinergics.

PhysicalE xamination

GeneralA ppearance: I ncoherentspeech, lethargy,som nolence.D ehydration, septicappearance.N otew hetherthepati entl ooks "ill"o rw ell.

Vital Si gns: B P (hy pertensive encephal opathy), pulse, tem perature (fever), respiratoryrate.

Skin: Cy anosis, jaundice, delay ed capillary refill, petechia, splinter hem or-rhages;i njectionsi tefatatrophy (di abetes).

Head: S kull t enderness, l acerations, p tosis, f acial w eakness. B attle's si gn (ecchymosis over m astoid process), raccoon si gn (peri orbital ecchy mosis, skullfracture),hem otympanum(basal sk ullfracture).

Eyes:P upilsiz eandreactivity ,ex traocularm ovements,papilledem a.

Mouth: Tongueorcheek l acerations;atrophi ctongue,gl ossitis (B12 deficiency).

Neck: Neck r igidity,m asses.

Chest:B reathing pattern(C heyne-Stokesh yperventilation),crack les,w heezes.

Heart:R hythm,m urmurs,gal lops.

Abdomen:H epatomegaly,spl enomegaly,m asses.

Neuro:S trength,cr anialn erves2 -12,mi ni-mentalst atuse xam;o rientationt o person,pl ace, time, recent events; Babinski'ssi gn,pri mitiverefl exes(snout,

suck,gl abella,pal momentalgrasp).

LaboratoryE valuation: Gl ucose,el ectrolytes,B UN,creati nine,O_2saturation, liverfuncti ontests.C T/MRI,uri netox icologyscreen.

DifferentialDiag nosiso fDelir ium: H ypoxia,m eningitis,encephal itis,sy stemic infection, el ectrolyte i mbalance, hy perglycemia, hy poglycemia (i nsulin overdose), drug i ntoxication, strok e, i ntracranial hem orrhage, sei zure; dehydration, head traum a, urem ia, vi tamin B 12 defi ciency, k etoacidosis, factitiouscom a.

Renaland EndocrinologicDisorders

Polyuria,EnuresisandUrinary Frequency

ChiefCo mplaint:E xcessiveuri nation.

History of P resentIl lness: T ime of onset of ex cessive uri nation. C onstant daytime thi rst or w aking at night to dri nk. P oor uri nary stream , persi stent dribbling of uri ne; strai ning to uri nate. E xcessive fl uid i ntake, dysuria, recurrent uri narytracti nfections; urgency , day time and ni ghttime enuresi s, fever.Gai t disturbances, history of lumbarpuncture,spi nalcordi njury.Low er extremity w eakness; back pai n, l eg pai n. U se of harsh soaps for bathi ng. Feeding schedul e, overfeedi ng, grow th pattern, dehydration. V omiting, constipation.A bdominalandperi nealpai n,consti pation,encopresi s

PastM edicalH istory:U rinarytracti nfections,di abetes,renal di sease.

SocialH istory:H istoryofforei gnbody i nsertionorsex ualabuse.

FamilyHisto ry: Fam ilym embersw ithpol ydipsia,pol yuria; early infant deaths, infantsw ithpoorgrow th or dehydration; genitourinarydi sorders.P arentalage oftoi lettrai ning.

PhysicalE xamination

GeneralA ppearance: Signsofdehy dration,septi cappearance.

VitalSi gns:B loodpressure (hypertension),pul se(tachy cardia),tem perature, respirations.Grow thpercenti les,grow thfai lure.

Chest:B reathsounds.

Heart:M urmurs,thi rdheartsound.

Abdomen:M asses,pal pablebl adder.P erinealex coriation; lumbosacral midline defects,sacral hai rypatch,sacral hyperpigmentation,sacral di mpleorsi nus tract,hem angiomas.

RectalE xamination:R ectalsphi ncterl axity,anal refl ex(sacral nerve function).

Extremities:A symmetricglutealcleft,gluteallipom a,glutealw asting.

NeurologicE xamination:D eeptendonrefl exes, musclestrengthi nthel egs andfeet.P erinealsensati on,gai tdi sturbance.

WaterD iuresis
Primarypol ydipsia
Diabetesi nsipidus
Obstructionbyposteri orurethral val ves,uteropel vicj unctionobstructi on,ectopi c ureter,nephrol ithiasis
Renali nfarctionsecondarytosi ckle-celldi sease
Chronicpyel onephritis

SoluteD iuresis: Glucose,urea,m annitol,sodi umchl oride,m ineralocorticoid deficiencyorex cess,al kalii ngestion

DifferentialD iagnosisofE nuresisandU rinaryFr equency	
Infection Uteropelvicj unctionobstructi on Obstructiveectopi cureter Posteriorurethral val ves Nephrolithiasis Diabetesm ellitus	Diabetesi nsipidus Wilmst umor Neuroblastoma Pelvict umors Fecali mpaction

Hematuria

ChiefCo mplaint: Bloodi nuri ne.

HistoryofP resentIllness: C olorofuri ne,durati onandti mingofhem aturia. Frequency,dy suria,suprapubi cpai n,fl ankpai n(renal col ic),a bdominalo r perinealpai n,fever,m enstruation.

Foleycatheteri zation,stonepassage,ti ssuepassagei nuri ne,j ointpai n.

Strenuous ex ercise, dehy dration, recent traum a. R ashes, a rthritis (sy stemic lupus ery thematosus, H enoch-Schönlein purpura). B loody di arrhea (hemolytic-uremicsy ndrome),hepati tisB orC ex posure.

Causes of R ed U rine: P yridium, pheny toin, i buprofen, cascara l axatives, rifampin,berri es,fl avabeans,foodcol oring,rhubarb,beets,hem oglobinuria, myoglobinuria.

PastM edicalH istory:R ecentsorethroat(groupA streptococcus), streptococcalsk ini nfection (glomerulonephritis). Recent orrecurrentupperrespi ratory illness(adenovi rus).

Medications A ssociated with H ematuria: W arfarin, a spirin, i buprofen, naproxen,phenobarbi tal,pheny toin,cy clophosphamide.

PerinatalHi story: Bir tha sphyxia,u mbilicalca theterization.

Family Histo ry: H ematuria, renal di sease, si ckle cell anem ia, bl eeding disorders,hem ophilia,deafness(A lport'ssy ndrome),hy pertension.

SocialH istory: Occupati onalex posuretotox ins.

PhysicalE xamination

GeneralA ppearance:S ignsofdehy dration.N otew hether the patientl ooks "ill" orw ell.

VitalSi gns:H ypertension(acuterenal failure, acutegl omerulonephritis),fever, respiratoryrate,pul se.

Skin: P allor, m alar rash, di scoid rash (sy stemic l upus ery thematosus); ecchymoses,petechi ae(H enoch-Schönleinpurpura).

Face: Periorbitaledem a(nephri tis,nephroti csy ndrome).

Eyes: Lensdi slocation,dot-and-fl eckreti nopathy(A lport'ssy ndrome).

Throat:P haryngitis.

Chest:B reathsounds.

Heart:R hythm,m urmurs,gal lops.

Abdomen:M asses,nephrom egaly(W ilms'tum or,pol ycystick idneydi sease, hydronephrosis),abdom inalbrui ts,suprapubi ctenderness.

Back:C ostovertebralangl etenderness(renal cal culus,py elonephritis).

Genitourinary:D ischarge,forei gnbody ,traum a,m eatalstenosi s.

Extremities: P eripheral edema (nephrotic sy ndrome), joint sw elling, joint tenderness(rheum aticfever),unequal peri pheral pulses (aorticcoarctati on).

LaboratoryE valuation:U rinalysisw ithm icroscopic,uri necul ture;creati nine,

BUN, C BC; si ckle cel l screen; uri ne cal cium-to-creatinine rati o, I NR/PTT. Urinalysis of first-degree relatives (A lport's sy ndrome or benign fam ilial hematuria),renal ul trasonography.

SpecificLabor atoryE valuation:C omplementl evels,anti -streptolysin-Oand anti-DNAseB (poststreptococcal gl omerulonephritis),an tinuclearanti body, audiogram (A lport's syndrome), anti glomerular basement m embrane antibodies(Goodpasture'ssy ndrome),anti neutrophilcy toplasmicanti bodies, purifiedprotei nderi vative(P PD).

Advanced Labor atory E valuation: V oiding cy stourethrogram, i ntravenous pyelography,C Tscan,M RIscan,renal scan,renal bi opsy.

DifferentialD iagnosisofM icroscopicH ematuria

GlomerularD iseases

Benignf amilialo rsp oradich ematuria (thinm embranenephropathy)
Acuteposti nfectiousgl omerulonephritis
Hemolytic-uremicsyndrom e
IgAnephropathy(B erger'sdi sease)
Alport'ssyn drome(familial nephritis)
Focalsegm entalgl omerulonephritis
Membranoproliferativegl omerulo-nephritis
Systemicl upuserythem atosus
Henoch-Schönleinnephri tis
Polyarteritis
Hepatitis-associatedgl omerulonephritis

NonglomerularD iseases

Strenuousex ercise
Dehydration
Fever
Menstruation
Foreignbodyi nurethraorbl adder
Urinarytracti nfection:bacteri al, adenovirus,tubercul osis
Hypercalciuria
Urolithiasis
Sicklecel ltrai tordi sease
Trauma
Drugsandtox ins
Masturbation
Tumors
Wilms't umor
Tuberousscl erosis
Renalorbl addercancer
Leukemia
Coagulopathy
Anatomicalabnorm alities
Hydronephrosis
Ureteropelvicj unctionobstructi on
Cysticki dneys
Polycysticki dneydi sease
Medullarycysti cdi sease
Vascularm alformations
Arteriovenousfi stula
Renalvei nthrom bosis
Nutcrackersyndr ome
Papillaryn ecrosis
Parenchymali nfarction
Munchausensyndrom e-by-proxy

Proteinuria

ChiefCo mplaint: Proteinuria.

HistoryofP resentIllness: Protein of 1+(30m g/dL)onauri nedi pstick.P rotein above4 m g/m^2/houri nati med12- to24-houruri necol lection(si gnificant proteinuria). P riorprotei nuria, hy pertension, edem a; s hort stature, heari ng deficits.

PastM edicalH istory:R enaldi sease,heartdi sease,arthral gias.

Medications:C hemotherapyagents.

FamilyHisto ry:R enaldi sease,deafness.

PhysicalE xamination

GeneralA ppearance:S ignsofdehy dration.N otew hetherthepati ent looks "ill" orw ell.

VitalSi gns:T emperature(fever).

Ears:D ysmorphicpi nnas.

Skin: Café-au-laitspots,hy popigmentedm acules,rash.

Extremities: Joinittenderness,jointsw elling.

LaboratoryE valuation:U rinalysisforspotprotei n/creatininerati o.R ecumbent andam bulatinguri nalyses.C BC,el ectrolytes,B UN,creati nine, totalprotei n, albumin, chol esterol, anti streptolysin-O ti ter (A SO), antinuclear anti body, complementl evels.R enalul trasound,voi dingcy stourethrogram.

Functional/Transient(< 2+onur inedi pstick)
Fever
Strenuousex ercise
Coldex posure
Congestiveheartfai lure
Seizures
Emotionalstress

IsolatedP roteinuria
Orthostaticprotei nuria(60% ofcases)
Persistentasy mptomaticprotei nuria

Glomerular Disease
Minimalchangenephroti csy ndrome
Glomerulonephritis
- Postinfectious
- Membranoproliferative
- Membranous
- IgAnephropathy
- Henoch-Schönleinpurpura
- Systemicl upusery thematosus
- Hereditary nephritis

Tubulointerstitial Disease
Refluxnephropathy
Interstitialnephri tis
Hypokalemicnephropathy
Cystinosis
Fanconi'ssy ndrome
Tyrosinemia
Lowesy ndrome
Tubulartox ins
- Drugs(eg,am inoglycosidesand penicillins)
- Heavym etals

Ischemictubul ari njury

SwellingandEdema

ChiefCo mplaint: Swollenank les.

History of P resent Illness: D uration of edem a; di stribution (l ocalized or generalized);interm ittentor persistentsw elling,pain,redness.Renaldisease; shortness of breath, m alnutrition, chroni c diarrhea (protei n l osing enteropathy),al lergies.P eriorbitaledem a,ank leedem a,w eightgai n.

Poorex ercisetolerance,f atigue,inability tok eepupw ithotherchildren.P oor feeding, fussi ness, rest lessness. B loody uri ne (sm oky or red), decreased urineoutput,j aundice.P oorprotei ni ntake(K washiorkor),di etaryhi story.

PastM edicalH istory: Menstrual cycle,sex ualacti vity,prem enstrual bloating, pregnancy,rash.

Medications: Over-the-counter drugs, di uretics, oral co ntraceptives, anti - hypertensives,estrogen,l ithium.

Allergies:A llergicreacti onstofoods(cow 'sm ilk).

FamilyH istory: Lupusery thematosus,cy sticfi brosis,renal di sease, Alport syndrome,heredi taryangi oedema,deafness.

SocialH istory: Exposuretotox ins,illicitdrugs,alcohol,chem icals.

PhysicalE xamination

General A ppearance: R espiratory di stress, pal lor. N otew hether the pati ent looks “ill”o rw ell.

Vitals: B P (upri ghtandsupi ne), pul se (tachy cardia), tem perature, respi ratory rate (tachy pnea). Grow th percenti les, poor w eight gai n. D ecreased uri ne output.

Skin: Xanthomata, spi der angi omata, cy anosis. R ash, i nsect bi te puncta, erythema.

HEENT: Periorbitaledem a.C onjunctivali njection,scl erali cterus, nasal polyps, sinustenderness,phary ngitis.

Chest:B reathsounds,crack les,dul lnesstopercussi on.

Heart: Displacementofpoi ntofm aximali mpulse;si lentprecordi um,S 3gal lop, frictionrub,m urmur.

Abdomen:D istention,brui ts,hepatom egaly,spl enomegaly,shi ftingdul lness.

Extremities: Pittingornon-pi ttingedem a(graded1to4+),ery thema,pul ses, clubbing.

LaboratoryE valuation:E lectrolytes,l iverfuncti ontests,tri glycerides,al bumin, CBC,chestx -ray,uri neprotei n.

DifferentialD iagnosisofE dema	
IncreasedH ydrostaticP ressure Congestiveheartfai lure Pericarditis Superiorvenacavasyndrom e Arteriovenousfi stula Venousthrom bosis Lymphaticobstructi onbytum ors Syndromeofi nappropriateA DHsecre- tion Steroids Excessivelatrogeni cfl uidadm inistration **IncreasedCap illaryP ermeability** RockyM ountainspottedfever Stevens-Johnsonsyndrom e	**DecreasedOn coticP ressure (Hypoproteinemia)** Nephroticsyndrom e Liverdi sease(al pha1-antitrypsindefi - ciency,i nfectioushepati tis) Cirrhosis Galactosemia Kwashiorkor Marasmus Cysticfi brosis Inflammatorybow eldi sease Protein-losingenteropathy(cow 'sm ilk allergy) Intestinall ymphangiectasia Celiacdi sease Bezoar Infection(Gi ardiasp.) Pancreaticpseudocyst Severeanem ia Zincdefi ciency

DiabeticK etoacidosis

ChiefCo mplaint: Malaise.

HistoryofP resentIllness: I nitialgl ucosel evel,k etones,ani ongap.D uration of polyuria, polyphagia,pol ydipsia,l ethargy,dy spnea,w eightl oss;noncom pliance w ith i nsulin; bl urred vi sion, i nfection, dehy dration, abdom inal pain (appendicitis). Cough, fev er, chills, ear pain (otitis m edia), dy suria (urinary tractinfection).

FactorsthatM ay Precipitate DiabeticK etoacidosis.N ewonsetofdi abetes, noncompliance w ith i nsulin, i nfection, pancreati tis, m yocardial i nfarction, stress,traum a,pregnancy .

Past M edical H istory: Age of onset of di abetes; r enal d isease, i nfections, hospitalization.

PhysicalE xamination

General A ppearance: S omnolence, K ussmaul r espirations (deep si ghing breathing),dehy dration.N otew hetherthepati entl ooks "toxic"o rw ell.

Vital Si gns: B P (hy potension), pul se (tachy cardia), tem perature (fever, hypothermia),respi ratoryrate(tachy pnea).

Skin: Decreasedsk inturgor,delay edcapillary refill,intertriginouscandi diasis, erythrasma,l ocalizedfatatrophy (i nsulini njections).

Eyes:D iabeticreti nopathy(neovascul arization,h emorrhages),decreasedvi sual acuity.

Mouth: A cetone breath odor (m usty, appl e odor), dry m ucous m embranes (dehydration).

Ears:T ympanicm embraneery thema(oti tism edia).

Chest:R ales,rhonchi (pneum onia).

Heart: Mu rmurs.

Abdomen:H ypoactivebow elsounds(i leus), rightl owerquadranttenderness

(appendicitis), suprapubi c tenderness (cy stitis), costovertebral angl e tenderness(py elonephritis).

Extremities:A bscesses,cellulitis.

Neurologic:C onfusion,hy poreflexia.

LaboratoryE valuation: Gl ucose, sodi um, potassi um, bicarbonate, chl oride, BUN, creati nine, a nion gap, phosphate, C BC, serum k etones; U A (proteinuria,k etones).C hestx -ray.

DifferentialDiag nosis

Ketosis-causingC onditions:A lcoholick etoacidosisorstarvati on.

Acidosis-causingCo nditions

IncreasedA nionGa pA cidoses: Lacti caci dosis,urem ia,sal icylateor methanolpoi soning.

Non-AnionGapA cidoses:D iarrhea,renal tubul araci dosis.

DiagnosticC riteriafor D KA. Gl ucose ≥250, pH< 7.3,bi carbonate< 15,k etone positive> 1:2di lutions.

80D iabeticK etoacidosis

Dermatologic, Hematologic and RheumatologicDi sorders

Rash

ChiefCo mplaint: Rash.

History of P resent Illness: T ime of rash onset, l ocation, pattern of spread (chest to extremities). Locati on w here the rash fi rst appeared; w hat i t resembled; w hat sy mptoms w ere associ ated w ith i t; w hat treatm ents have been tri ed. Fever, m alaise, headache; conj unctivitis, cory za, cough. Exposure to persons with rash, pri or hi story of chi cken pox . S ore throat, j oint pai n, abdominal pai n. E xposure to al lergens or i rritants. S un ex posure, cold, psychologicstress.

PastM edical History: Pr ior r ashes, a sthma, a llergic r hinitis, urticaria, e czema, diabetes, hospi talizations, surgery .

Medications: P rescription and nonprescri ption, drug reacti ons.

FamilyHisto ry: S imilar probl ems am ong fam ily m embers.

Immunizations: Vaccination status, m easles, m umps, rubel la.

SocialH istory: Drugs, al cohol, hom esi tuation.

PhysicalE xamination

GeneralA ppearance: Respiratory di stress, tox ic appearance.

VitalSi gns: T emperature, pul se, bl ood pressure, respi rations.

Skin: Complete sk in examination, including the nai l s and m ucous m embranes. Color or surface changes, texture changes, w arm th. D istribution of sk in l esions (face, trunk, extremities), shape of the l esions, arrangem ent of several l esions (annular, serpi ginous, dermatomal); col or of the l esions, dom inant hue and the col or patte rn, surface characteri stics (scal y, verrucous), ery thema, papules, induration, fl at, m acules, vesi cles, ul ceration, m argin character, lichenification, ex coriations, crusti ng.

Eyes: C onjunctival ery thema.

Ears: T ympanic m embranes.

Mouth: S oft palate m acules; buccal m ucosal esions.

Throat: P haryngeal ery thema.

LymphN odes: Cervical, ax illary, inguinal ly mphadenopathy.

Chest: R honchi, crack les, w heezing.

Heart: Mu rmurs.

Abdomen: T enderness, m asses, hepatospl enomegaly.

Extremities: Rash on hands, feet, palm s, soles; joints w elling, joint tenderness.

Differential D iagnosis: V aricella, rubel la, m easles, scarl et fever, ecz ema, dermatitis, rocky m ountain spotted fever, druge rupti on, K awasaki's di sease.

Laboratory D iagnosis: V irus i solation o r a ntigen detection (blood, nasopharynx, conj unctiva, uri ne). A cute and conval escent anti bodyti ters.

BruisingandBleeding

ChiefCo mplaint:B ruising

HistoryofP resentIllness: Timeofonse t of bruising;traum a,spontaneous ecchymoses, petechi ae; bl eeding gum s, bl eeding i nto j oints, epi staxis, hematemesis,m elena.B onepai n,j ointpai n,abdom inalpai n.I sthe bleeding lifelong or of recent onset? H ematuria, ex tensive bl eeding w ith traum a. Weightl oss,fever,pal lor,j aundice,recurri ngi nfections.

PastM edicalH istory: Oozing fromtheum bilicalstum pafterbirth,bleeding at injectionsi tes.P rolonged bleeding after minorsurgery (ci rcumcision)orafter lossofpri maryteeth.

Family Histo ry: B leeding disorders, anticoagulant use, availability of rodenticidesoranti plateletdrugs(eg,aspi rinorothernonsteroi dals)i nthe home.C hildabuse.

SocialH istory: Historyofchi ldabuse,fam ilystress.

PhysicalE xamination

GeneralA ppearance:I ll-appearance.

Vital Si gns: T achypnea, tachy cardia, fever, bl ood pressure (or thostatic changes),cachex ia.

Skin: A ppearance and di stribution o f petechiae (col or, si ze, shape, di ffuse, symmetrical), ecchy motic patterns (eg , bel t buck le shape, doubl ed-over phone cord); folliculitis (neutropenia). Hy perextensible sk in (E hlers-Danlos syndrome).P artialal binism(H ermansky-Pudlaksy ndrome).P alpablepurpura onl egs(vascul itis,H enoch-Schönleinpurpura).

LymphN odes: Cervicalorax illaryly mphadenopathy

Eyes:C onjunctivalpal lor,ery thema.

Nose:E pistaxis,nasal eschar.

Mouth: Gingivitis, m ucous m embrane bl eeding, ooz ing from gums, oral petechiae.

Chest:W heezing,rhonchi .

Heart: Mu rmurs.

Abdomen:H epatomegaly,spl enomegaly,nephrom egaly.

Rectal:S tooloccul tbl ood.

Extremities: Muscle hematomas; anom alies of the radi us bone (thrombocytopeniaabsentradi us[T AR]sy ndrome).B onetenderness,j oint tenderness,hem arthroses;hy permobilej oints(E hlers-Danlossy ndrome.

PastTesting: X -raystudi es,endoscopy .

DifferentialD iagnosisofB ruisingandB leeding	
Hemolyticurem icsyndrom e	Takayasuar teritis
Thrombotic thrombocytopenicpurpura	Polyarteritisnodosa
Uremia	Kawasakisyndr ome
Paraproteinemia	Henoch-Schönleinpurpura
Myelodysplasticsyndrom e	Leukocytoclastic("hypersensi tivity") vasculitis
Phenytoin,val proicaci d,qui nidine,hep- arin	Wegenergranul omatosis
Afibrinogenemia/dysfibrinogenemia	Churg-Strausssyndrom e
Clottingf actord eficiencies(hemophilia A,B ,C hristmasdi sease)	Essentialcryogl obulinemia
	Systemicl upuserythem atosus
VonW illebranddi sease	Juvenilerheum atoidarthri tis
VitaminK defi ciency	Mixedconnecti veti ssuedi sease
Hemorrhagicdi seaseofthenew born	Dermatomyositis,scl eroderma
Trauma	Bacterialorvi rali nfection,spi rochetal infection,r ickettsialin fection
Vasculitis	
Giantcel l(tem poral)arteri tis	Malignancy

KawasakiD isease

ChiefCo mplaint: Fever.

HistoryofP resentIllness: Feverofunk nowncause,l asting5day sorm ore; irritability, chest pain. E ye redness. Redness, dry ness or fissuring of lips, strawberrytongue. D iarrhea,vom iting,abdom inalpai n,arthri tis/arthralgias. Absenceofcough,rhi norrhea,vom iting.

PhysicalE xamination

GeneralA ppearance: I llappearance,i rritable.

VitalSi gns: P ulse (tachycardia), bl oodpressure (hy potension), respi rations, temperature(fever).

Skin: Diffusepol ymorphousrash(m acules,bul lae, erythematous exanthem) of thetr unk;m orbilliformo rsca rlatiniformr ash.

Eyes: B ilateralconj unctivalcongesti on(di latedbl oodvessel sw ithoutpurul ent discharge),ery thema,conj unctivalsuffusi on,uvei tis.

Mouth: Erythemaofl ips,fi ssuresofl ips;sw ollen, erythematous tongue. Diffuse injectionoforal andphary ngealm ucosa.

LymphN odes: Cervicall ymphadenopathy.

Chest: B reathsounds.

Heart: M urmur,gal loprhy thm,di stantheartsounds.

Abdomen: Tenderness,hepatom egaly,spl enomegaly.

Extremities: Edema,ery themaofthehandsandfeet;w arm,red,sw ollen hands andfeet.Joint swelling, joint tenderness. Desquamationofthefingersortoes, usuallyaroundnai lsandspreadi ngoverpal msandsol es(l ate).

LaboratoryE valuation: C BCw ith differential,pl ateletcount,el ectrolytes,l iver function tests, E SR, C RP, throat cul ture, anti streptolysin-O ti ter, bl ood cultures.

Urinalysis: P roteinuria,i ncreaseofl eukocytesi nuri ne sediment (sterilepy uria)

ECG: P rolonged P R, QT i ntervals, abnorm al Q w ave, l ow vol tage, S T-T changes,arrhy thmias.

CXR: C ardiomegaly

Echocardiography: P ericardial effusi on, coronary aneury sm, m yocardial

infarction.

DifferentialD iagnosis: S carletfever(nohand, foot, orconj unctivali nvolvement), Stevens-Johnson syndrome (mouthsores,cutaneousbul lae,crusts), measles (rash occurs after fever peak s and begi ns on head/sca lp), toxic shocksy ndrome,vi ralsy ndrome,drugreacti on.

BehavioralDi sordersandTr auma

FailuretoT hrive

ChiefCo mplaint: Inadequategrow th.

History of P resent Illness: W eight l oss, change i n appeti te, vom iting, abdominalpai n,di arrhea,fever.D atew hentheparentsbecam econcerned abouttheprobl em,previ oushospi talizations.P olyuria,pol ydipsia;j aundice; cough.

Nutritional Histo ry: A ppropriate cal oric i ntake, 24-hour di et r ecall; di etary calendar;ty pes and amounts o f food offered. P roperform ula preparati on. Parentaldi etaryrestri ctions(l owfat).

Past Me dical History: E xcessive cry ing, feedi ng probl ems. P oor suck and swallow,fati gueduri ngfeedi ng.U nexplainedi njuries.

Developmental H istory: D evelopmental del ay, l oss of devel opmental milestones.

PerinatalH istory: D elayedi ntrauterinegrow th,m aternali llness,m edications or drugs (tobacco, al cohol). B irth w eight, peri natal j aundice, feedi ng difficulties.

Family H istory: S hort stature, parental hei ghts and the ages at w hich the parents achi eved puberty . S iblings w ith poor grow th. D eaths i n siblings or relativesduri ngearl ychi ldhood(m etabolicori mmunologicdi sorders).

Social H istory: P arental H IV-risk behavi or (bi sexual ex posure, i ntravenous drug abuse, bl ood transfusi ons). P arental histories of negl ect or abuse i n childhood;current stress within the family,fi nancialdi fficulties,m aritaldi scord.

HistoricalF indingsin F ailureto T hrive	
PoorCal oricIntake	Diarrhea,dysentery,fever
Breast-feedingm ismanagement	Inflammatorybow eldi sease
Lactationfai lure	Radiation,chem otherapy
Improperform ulapreparati on	Hypogeusia,anorex ia
Maternalstress,poordi et, illness	Recurrenti nfections
Eatingdi sorders	Rash,arthri tis,w eakness
Aberrantparental nutri tionalbel iefs	Jaundice
Foodfaddi sm	Polyuria,pol ydipsia,pol yphagia
Diaphoresisorfati guew hileeati ng	Irritability,co nstipation
Poorsuck,sw allow	Mentalretardati on,sw allowingdi fficul-
Vomiting,hyperki nesis	ties
Biliousvom iting	Intrauterinegrow thdel ay
Recurrentpneum onias,steatorrhea	

PhysicalE xamination

GeneralA ppearance: C achexia,dehy dration. Notew hetherthepati entl ooks "ill,"w ell,orm alnourished. Observationofparent-chi ldi nteraction;affecti on, warmth. Passiveorw ithdrawnbehavi or.D ecreasedvocal ization, expressionless faci es; i ncreased hand and fi nger acti vities (thum b suck ing), i nfantile posture;m otori nactivity(congeni talencephal opathyorrubel la).

Developmental E xamination: Delay ed abilities for age on developm ental screeningtest.

VitalSi gns: P ulse(brady cardia),B P,respi ratoryrate,tem perature(hy pother-

mia). W eight, l ength, and head ci rcumference; short st ature, grow th percentiles.

Skin:P allor,j aundice,sk inl axity,rash.

LymphN odes:C ervicalorsupracl aviculari ymphadenopathy.

Head:T emporalw asting,congeni talm alformations.

Eyes:C ataracts(rubel la),i cterus,dry conj unctiva.

Mouth: D ental erosi ons, orophary ngeal l esions, chei losis (cobal amin defi - ciency),gl ossitis(P ellagra).

Neck:T hyromegaly.

Chest:B arrelshapedchest,rhonchi .

Heart:D isplacedpoi ntofm aximali mpulse,patentductusarteri osusm urmur, aorticstenosi sm urmur.

Abdomen: Protuberant abdomen, decreased bow el sounds (m alabsorption, obstructiveuropathy), tenderness. Periumbilicaladenopathy .M asses(py loric stenosis or obstructi ve uropathy), hepatomegaly (gal actosemia), spl eno- megaly.

Extremities:E dema,m usclew asting.

Neuro:D ecreasedperi pheralsensati on.

Rectal: Occul tbl ood,m asses.

Genitalia:H ypospadias(obstructi veuropathy).

PhysicalE xaminationF indingsin Gr owthDeficien cy

Micrognathia,cl eftl ipandpal ate	Shortstature
Poorsuck ,sw allow	Cachexia,m ass
Hyperkinesis	Rash,j ointery thema,tenderness, weakness
Bulgingfontanel le,papi lledema	Jaundice,hepatom egaly
Nystagmus,atax ia	Ambiguousgeni talia,m as- culinization
Abdominaldi stension	Irritability
Fever	
Clubbing	
Perianalsk intags	

LaboratoryE valuation:C BC,el ectrolytes,protei n, albumin, transferrin, thyroid studies,l iverfuncti ontests.

PoorC aloricI ntake

- Breast-feedingm ismanagement
- Lactationfai lure
- Maternalstress,poordi et, illness
- Eatingdi sorders(ol derchi ldren)
- Aberrantparental nutri tionalbel iefs
- Foodfaddi sm
- Improperform ulapreparati on
- Micrognathia,cl eftl ip,cl eftpal ate
- Cardiopulmonarydi sease
- Hypotonia,C NSdi sease
- Diencephalicsyndrom e

PoorCalo ricReten tion
- Increasedi ntracranialpressure
- Labyrinthinedi sorders
- Esophagealobstructi on,gastroesophageal refl ux,pream pullaryobstructi on
- Intestinalobstructi on,vol vulus,H irschsprungdi sease
- Metabolicdi sorders

PoorC aloricD igestion/Assimilation/Absorption
- Cysticfi brosis
- Shwachman-Diamondsyndrom e
- Fatm alabsorption
- Enterici nfections
- Infection
- Inflammatorybow eldi sease
- Cancertreatm ent
- Gluten-sensitiveenteropathy
- Carbohydratem alabsorption
- Intestinall ymphangiectasia
- Zincdefi ciency

IncreasedC aloricD emands
- Chronici nfection
- HIVin fection
- Malignancies
- Autoimmunedi sorders
- Chronicrenal di sease
- Chronicl iverdi sease
- Diabetesm ellitus
- Adrenalhyperpl asia
- Hypercalcemia
- Hypothyroidism
- Metabolicerrors

Miscellaneous
- CNSi mpairment
- Prenatalgrow thfai lure
- Shortstature
- Lagging-down
- Normalthi nness

DevelopmentalD elay

ChiefCo mplaint:D elayeddevel opment.

Developmental H istory: A ge w hen parents fi rst becam e concerned a bout delayed development.RateandpatternofacquisitionofSk ills; developmental regressions. Pa rents'd escriptiono fth ech ild'scu rrentsk ills. Ho w does he movearound?H owdoeshe use hishands?H owdoeshel ety ouk noww hat he wants?W hatdoesheunderstandofw haty ousay ? What can you tell him todo?W hat does he like to play with?H owdoeshepl ayw ithtoy s?H owdoes hei nteractw ithotherchi ldren?

Behaviori nearl yi nfancy(qual ityof alertness,responsi veness).D evelopmental quotient(D Q):D evelopmentalagedi videdby thechi ld'schronol ogic agex 100.V isionandheari ngdefi cits.

PerinatalHi story: Inuteroex posuretotox insorteratogens,m aternalillness ortraum a,com plicationsofpregnancy .Qual ity of fetalm ovement,poorfetal weightgai n(pl acentaldy sfunction). A pgarscores, neonatal sei zures, poor feeding, poor m uscle tone at bi rth. Grow th param eters at bi rth, head circumference.

PastM edical History: I llnesses,poorfeedi ng,vom iting, failure to thrive. Weak suckingandsw allowing,ex cessivedrool ing.

Medications: A nticonvulsants,sti mulants.

Family Histo ry: I llnesses, hearing i mpairment, m ental retardati on, m ental illness,languageproblem s,learningdisabilities,dy slexia,consanguinity .

SocialH istory: H omesi tuation,tox inex posure,l eadex posure.

PhysicalE xamination

Observation: Faci alex pressions, eye contact,soci al,i nteractionw ithcaretak - ers and ex aminer. Chronically ill, w asted, m alnourished appearance, lethargic/fatigued.

VitalSi gns: R espirations,pul se,bl oodpressure, temperature.H eight,w eight, headci rcumference,grow thpercenti les.

Skin: Ca fé au lait spots, hy popigmented m acules (neurofi bromatosis), hemangiomas,telangiectasias,ax illaryfreck ling.Cy anosis,jaundice,pallor, skinturgor.

Head: Frontal bossi ng,l ow anteriorhai rline;headsi ze,shape,ci rcumference, microcephaly,m acrocephaly,asy mmetry,cephal ohematoma;short palpebral fissure,fl attened mid-face(fetal al coholsy ndrome),chi nshape(prom inentor small).

Eyes: S ize,shape,anddi stancebetw eentheey es(sm allpal pebralfi ssures, hypotelorism,hy pertelorism,upsl antingordow nslantingpal pebralfi ssures). Retinopathy, cataracts, corneal cl ouding, vi sual acui ty. Lens dislocation, cornealcl ouding,strabi smus.

Ears: S ize and placemento ft hep innae(l ow-set,posteri orlyrotated,cupped, small,prom inent).T ympanicm embranes,heari ng.

Nose: B roadnasal bri dge,shortnose,antevertednares.

Mouth: H ypoplastic philtrum.Li pthi nness,dow nturnedcorners,fi ssures,cl eft, teeth(cari es,di scoloration),m ucusm embranecol orandm oisture.

LymphN odes: Location,siz e,tenderness,m obility,consistency .

Neck: P osition,m obility,sw elling,thy roidnodules.

Lungs: B reathingrate,depth,chestex pansion,crack les.

Heart: Locati onandi ntensityofapi cali mpulse,m urmurs.

Abdomen: C ontour, bow el sounds, tenderness, ty mpany; hepatomegaly, splenomegaly,m asses.

Genitalia: A mbiguousgeni talia(hy pogonadism).

Extremities: Posture, gait, stance, asy mmetry of m ovement. E dema, clinodactyly,sy ndactyly,nai ldeform ities,pal marorpl antarsi miancrease.

Neurological E xamination: B ehavior, level of consciousness, intelligenc e, emotional status. E quilibrium reactions (slow ly til ting and observing for compensatorym ovement). P rotectivereacti ons(di splacingto thesi deand observingforarm ex tensionby 7to8m onths).

MotorS ystem: Gai t,m uscletone, muscle strength (graded 0to5),deeptenon reflexes.

PrimitiveR eflexes: P almargrasp,M oro,asy mmetrictoni cneck refl exes.

SignsofC erebralP alsy: F istingw ith adductedt humbs,h yperextensiona nd scissoring of the l ower ex tremities, trunk archi ng. P oor suck -swallow, excessivedrool ing.

Diagnostic S tudies: K aryotype for fragi le X sy ndrome, fl uorescent i n situ hybridization(FI SH),D NA probes.M agneticresonancei maging(M RI)orC T scan.

MetabolicS tudies:A mmonial evel,l iverfuncti ontests,el ectrolytes,total CO_2, venousbl oodgasl evel.S creenforam inoaci dandorgani caci ddi sorders. Organicaci dassay ,am inoaci dassay ,m ucopolysaccharidesassay ,enz yme deficiencyassay .

Other S tudies: A udiometry, free-thy roxine (T 4), thy roid-stimulating horm one (TSH), bl oodl eadl evels,el ectrotromyography, nerveconducti onvel ocities, musclebi opsy.

DifferentialDiag nosiso fDev elopmentalDelay

Staticg lobald elay/mentalr etardation
- Idiopathicm entalretardati on
- Chromosomalabnorm alitiesorgeneti csyndrom es
- Hypoxic-ischemicencephal opathy
- Structuralbrai nm alformation
- Prenatalex posuretotox insorteratogens
- Congenitali nfection

Progressiveglobaldelay
- Inbornerrorsofm etabolism
- Neurodegenerativedi sorders
- Rettsyndrom e
- AIDSencephal opathy
- Congenitalhypothyroi dism

Languagedi sorders
- Hearingi mpairment
- Languageprocessi ng,ex pressivel anguagedi sorders
- Pervasivedevel opmentaldi sorderorauti sticdi sorder

Grossmo tord elay
- Cerebralpal sy
- Peripheralneurom usculardi sorders

SyndromesA ssociatedW ithD evelopmentD elay
- DownS yndrome
- FragileX S yndrome
- Prader-WilliS yndrome
- TurnerS yndrome
- WilliamsS yndrome
- Noonansyndrom e
- SotosS yndrome
- KlinefelterS yndrome
- AngelmanS yndrome
- CorneliadeLangeS yndrome
- Beckwith-WiedemannS yndrome

PsychiatricH istory

I. IdentifyingInfor mation:A ge,gender.

II. ChiefCo mplaint:R easonforthereferral .

A. HistoryoftheP resentIllness(H PI)

(1) DevelopmentalLev el: Cognitive,affecti ve,i nterpersonal development.

(2) NeurodevelopmentalDelay :C erebralpal sy,m entalretardati on,

congenitalneurol ogicdi sorders.

(3) **Organic D ysfunction:** P roblems w ith percepti on, coordi nation, attention,l earning,em otions,i mpulsecontrol .

(4) **Thought D isorders:** D elusions, hal lucinations, di sorganized speech, grossl y di sorganized or catatonic behavi or, negati ve symptoms(eg,affecti vefl attening,pauci tyofthoughtorspeech).

(5) **AnxietyandB ehavioral Symptoms:**P hobias,obsessi ve-compulsivebehavi ors,depressi on.

(6) **Temperamental D ifficulty:** A daptability, acceptability, demandingness.

(7) **Psychophysiological D isorders:** P sychosomatic i llnesses, conversiondi sorder.

(8) **UnfavorableE nvironment:**Fam ilyorschool probl ems.

(9) **CausativeFactor s**

a. **Genetic D isorders:** Dyslexia, attenti on-deficit hy peractivity disorder,m entalretardati on,auti sm.

b. **Organic D isorders:** Malnutrition, i ntrauterine dr ug ex posure, prematurity, head i njury, central nervous sy stem i nfections/tumors,m etaboliccondi tions,tox ins.

c. **Developmental Delay :** I mmaturity and attachment probl ems. Relationships w ith parents and si blings; devel opmental milestones,peerrel ationships,school perform ance

d. **Inadequate P arenting:** D eprivation, separati on, abuse, psychiatricdi sorders.

e. **StressFactor s:** Illness,i njury,surgery ,hospi talizations,school failure,poverty .

f. **Biological Functi on:** A ppetite, sl eep, bl adder and bow el control,grow thdel ay.

g. **Relationships:**Fam ilyandpeerprobl ems.

h. **SignificantLifeE vents:**S eparationandl osses.

i. **PreviousE valuations:** P reviouspsy chiatricandneurol ogical problemsandassessm ents.

j. **Parental P sychiatric S tate:** Status of each parent and thei r marriage.R elativesw ithpsy chiatricdi sorders,sui cide,al cohol orsubstanceabuse.

III. MentalS tatusE xamination

A. PhysicalA ppearance

(1) **Stature:**A ge-appropriateappearance,precoci ty,headci rcumference.

(2) **DysmorphicFeatur es:** Down sy ndrome, fragi leX , fetal al cohol syndrome.

(3) **NeurologicalS igns:**W eakness,crani alnervepal sies.

(4) **Bruising:**C hildabuse.

(5) **NutritionalS tate:**Obesi ty,m alnutrition,eati ngdi sorder.

(6) **Movements:**T ics,bi tingofl ips,hai rpul ling(i e,T ourette'sdi sorder, anxiety).

(7) **Spells:**M omentaryl apses ofattenti on,stari ng,headnoddi ng,ey e blinking(i e,epi lepsy,hal lucinations).

(8) **Dress,C leanliness,H ygiene:**Level ofcareandgroom ing.

(9) **Mannerisms:**T humbsuck ing,nai lbi ting

B. Separation:E xcessivedi fficultyi nseparati on.

C. Orientation

(1) **Toper son:**V erbalchi ldrenshoul dk nowthei rnam es.
(2) **Toplace:** Y oungchi ldrenshoul dk noww hetherthey area wayor athom e.
(3) **Totim e:**A senseofti mei sform edby age 8 or 9.Y oungchi ldren cantel lw hetheri ti sday orni ght.

D. **Central Nervous Sy stem F unction:** S oft si gns (persi stent neurodevelopmentali mmaturities):
(1) **GrossM otorC oordinationD eficiency:**I mpairedgai t.
(2) **FineM otorC oordination:** Copiesaci rcleatage2 to 3,crossat age3to4,squareatage5,rhom boidatage7.
a. **Laterality:**R ightandl eftdi scriminationby age5.
b. **RapidA lternating Movements:**H oppingononefootby age 7.
c. **AttentionS pan:** Distractibility,h yperactivity.

E. **Readingo rW ritingDifficu lties:**D yslexia,dy sgraphia.
F. **Speech and Language Difficulties:** A utism, m ental retardati on, deprivation,regressi on.
G. **Intelligence:**V ocabulary,levelofcom prehension,ability to identify body partsby age5,draw ingability ,m athematicalability .
H. **Memory:** Childrencancountfi vedi gitsforw ardandtw oback wards.
I. **Thinking P rocess**: Logi cal and coher ent thoughts, hal lucinations, suicidali deation,hom icidali deation,phobi as,obsessi ons,del usions.
J. **Fantasies and Infer red C onflicts:** D reams, nam ing three w ishes, drawing,spontaneouspl ay.
K. **Affect:**A nxiety,anger,depressi on,apathy .
L. **DefenseO rganization:**D enial,proj ection,i ntroversion,ex troversion.
M. **Judgmentand Insight:**T hechi ld's opinionofthecauseoftheprobl em. Howupseti sthechi ldabouttheprobl em?
N. **AdaptiveC apacities:** Problem-solvinga bility,r esiliency.

AttemptedSuicideandDrugO verdose

HistoryofP resentIllness: Time suicide wasattem ptedandm ethod.Quanti ty ofpills;m otiveforattem pt.A lcoholintak e;w herew assubstanceobtaine d. Precipitating factor for suicide attem pt (death, divorce, hum iliating event); further desi re to com mit sui cide. I s there a defi nite pl an? Was the acti on impulsiveorpl anned?
Feelings of sadness, gui lt, hopel essness, hel plessness. R easons that the patient has tow ish to go on l iving. D id the patient bel ieve that he w ould succeedinsuicide?I sthepatientupsetthatheisstillalive?
PastP sychiatricH istory:P revioussui cideattem ptsorthreats.
Medications:A ntidepressants.
FamilyH istory: Depression, suicide, psychiatricdi sease,m aritalconfl ict,fam ily support.
Social H istory: Personal or fam ily hi story of em otional, phy sical, or sex ual abuse; a lcohol or drug abuse, sources of em otional stress. A vailability of otherdangerousm edicationsorw eapons.

PhysicalE xamination
GeneralA ppearance: Levelofconsci ousness,del irium;presenceof potentially dangerousobj ects(bel ts,shoel aces).
Vital Si gns: B P (hy potension), pul se (brady cardia), tem perature, respi ratory

rate.

HEENT: S igns of traum a, ecchy moses; pupi l si ze and reacti vity, mydriasis, nystagmus.

Chest: A bnormalrespi ratorypatterns,rhonchi (aspi ration).

Heart: A rrhythmias,m urmurs.

Abdomen: D ecreasedbow elsounds,tenderness.

Extremities: W ounds,ecchy moses,fractures.

Neurologic: M entalstatusex am;trem or,cl onus,hy peractiverefl exes.

Laboratory E valuation: E lectrolytes, B UN, creati nine, gl ucose. A lcohol, acetaminophenl evels;chestX -ray,uri netox icologyscreen.

ToxicologicalEmer gencies

History of P resent Illness: S ubstance i ngested, ti me of i ngestion, quantity ingested (num ber of pills/v olume of liquid). W as this a suicide attem pt or gesture?V omiting,l ethargy,sei zures,al teredconsci ousness.

PastM edicalH istory: P reviouspoi sonings;heart,l ung,k idney,gastroi ntestinal,orcentral nervoussy stemdi sease.

PhysicalE xamination

Vital Si gns: T achycardia (stimulants, anti cholinergics), hy poventilation (narcotics,depressants),fever(anti cholinergics,aspi rin,sti mulants).

Skin: Dry m ucosa (anti cholinergic); very m oist skin (chol inergic or sympathomimetic).

Mouth:

Breath: A lcohol,hy drocarbon,cy anideodor.

Eyes: M eiosis,m ydriasis,ny stagmus(pheny toinorphency clidine).

Chest: B reathsounds.

Cardiac: B radycardia(beta-bl ocker,chol inergic,cal ciumchannel bl ocker).

Abdomen: D ecreasedbow elsounds(anti cholinergicornarcoti c).

Neurological: Gai t,refl exes,m entalstatus,sti mulation,sedati on.

LaboratoryE valuation: Gl ucose(l owi nal cohols,oral hy poglycemics,aspi rin, beta-blockers,i nsulin;hi ghi ni ron,l ateaspi rin), hypokalemia (lithium).A rterial blood gases. Liverfuncti ontests,W BC,tox icologyscreenof urine and serum. Methemoglobintestofbl ood.Ferri cchl orideuri netestforaspi rin.

Kidney, Ureter andBla dder(KUB)X- ray: Radiopaquepillfragm entsareseen with cal cium, chl oral hy drate, heavy m etals (l ead), i ron, P epto B ismol, phenothiazines,enteric-coatedpills.

ECG: P rolongedQT corw idenedQR S(tri cyclicanti depressants).

Toxin	ClinicalF indings
Iron	Diarrhea,bl oodystool s,m etabolicaci dosis, hematemesis,com a,abdom inalpai n,l eukocytosis,hy perglycemia
Opioids	Coma,respi ratorydepressi on,m iosis,track marks,brady cardia,decreasedbow elsounds

Organophosphates	Miosis,cram ps,sal ivation,uri nation,broncho-rrhea,l acrimation,defecati on,brady cardia
Salicylates	Hyperventilation,fever,di aphoresis,ti nnitus, hypo-orhy perglycemia,hem atemesis,al tered mentalstatus,m etabolicaci dosis,respi ratory alkalosis
Phencyclidine (PCP)	Muscletw itching,ri gidity,agi tation,ny stagmus, hypertension,tachy cardia,psy chosis,bl ank stare,m yoglobinuria,i ncreasedcreati nine phosphokinase
Tricyclica nti-depressants	Drym ucosa,vasodi lation,hy potension,sei zures, ileus,a lteredm entalsta tus,p upillaryd ilation, arrhythmias,w idenedQR S
Theophylline	Nausea,vom iting,tachy cardia,trem or,convul-sions,m etabolicaci dosis,hy pokalemia,E CG abnormalities
Adrenergicstorm (cocaine,am - phetamines, phenylpropan-olamine)	Pupillaryd ilation,h yperthermia,a gitation, diaphoresis,sei zures,trem or,anx iety,tacti le hallucinations,dy srhythmias,acti vebow el sounds,track m arks,hy pertension
Sedative/hypnotics	Respiratorydepressi on,com a,hy pothermia, disconjugateey em ovements
Anticholinergics	Drym ucousm embranesandsk in,tachy cardia, fever,arrhy thmias,uri naryandfecal retenti on, mentalstatuschange,pupillary dilation,flush-ing

Trauma

History: A llergies, M edications, P astm edicalhi story, Las tm eal, and E vents leading uptothei njury (A MPLE). D eterminethem echanismofi njuryand detailsofthetraum a.

I. PrimarySu rvey: A BCDEs

- **A. Airway:** C heckforsi gnsofobstructi on(noi sybreathi ng,i nadequateai r exchange).N ormalspeechi ndicatesapatentai rway.
- **B. Breathing:** Observechestex cursion.A uscultatechest.
- **C. Circulation:** H eartr ate, bl oodpressure, pul sepressure, l evelof con-sciousness,ca pillaryr efill.
- **D. Disability**
  - **(1) LevelofC onsciousness:** A lert,response to verbalsti muli,response topai nfulsti muli,unresponsi ve.

(2) NeurologicalD eficit: Fourex tremitygrossm otorfuncti on,sensory deficits.

E. Exposure: Completelyundressthepati ent.

II. SecondaryS urvey

A. Head: Raccooney es,B attle'ssi gn,l aceration,hem atoma,deform ity, skull fracture.

B. Face: Lacerati on,deform ity/asymmetry,bony tenderness.

C. Eyes: Visualacui ty,pupi lreacti vity,ex othalmos,enophthal mos,hy phema, globel aceration,ex traocularm ovements,l ensdi slocation.

D. Ears: Lacerati on,hem otympanum,cerebrospi nalfl uidotorrhea.

E. Nose: Laceration,nosebl eed,septal hem atoma,C SFrhi norrhea.

F. Mouth: Lipl aceration,tonguel aceration,gum l aceration,l ooseorm issing teeth,forei gnbody ,j awtenderness/deform ity.

G. Neck: Lacer ation, hem atoma, tracheal devi ation, venous di stention, carotidpul sation,cervi calspi netenderness/deform ity,tracheal deviation, subcutaneousem physema,brui t,stri dor.

H. Chest: Symmetry, flail segments,l aceration,ri bandcl avicletenderness ordeform ity,subcutaneousem physema,bi lateralbreathsounds,heart sounds.

I. Abdomen: Laceration, ecchymosis,scars,tenderness,di stention, bowel sounds,pel vissy mmetry,deform ity,tenderness,fem oralpul se.

J. Rectal: S phinctertone,prostateposi tion,occul tbl ood.

K. Genitourinary: Meatal bl ood, hem atoma, l aceration, tenderness, hematuria.

L. Extremities: C olor,defor mityl aceration,hem atoma,tem perature,pul ses, bonytenderness,capillary refill.

M. Back: E cchymosis,l aceration,spi neorri btenderness,rangeofm otion.

N. Neurological E xamination: Lev el of consci ousness, pupi l reacti vity, sensation,refl exes,B abinskisi gn.

III. RadiographicE valuationo fth eBlu ntT raumaP atient

A. Standardtr aumaser ies

(1) Cervicalsp ine

(2) ChestX ray

(3) Pelvicradi ograph

(4) ComputedT omography(C T)

Index