

OUTLINE OF HISTORY, PHYSICAL EXAMINATION, ASSESSMENT AND PLANS FOR PEDIATRIC PATIENTS

Student Name

Pediatric H&P #1

Identifying Data

Hasan is a 21 day old Saudi male who presented to pedia clinic with his mother and grandmother Thursday afternoon, September 6. The history is obtained from both mother and grandmother who both are considered reliable to a certain degree.

Chief Complaint

"The rash in his diaper area is getting worse."

History of Present Illness

Hasan's mother stated that her baby seemed to be quite healthy since his discharge from the nursery until Wednesday afternoon, September 5th, when she noticed a raised red rash on his abdomen. She also noticed that her baby began vomiting her breast milk after three feeds. Consequently, she switched to bottled milk (cow's milk formula), which he handled without any problems and the vomiting stopped. There was no evidence of rashes anywhere else on his body.

On the following morning, she noticed the rash had become fluid filled and had spread throughout the front diaper area including the inguinal region and upper right and left thigh. No intervention was attempted to treat the rash and nothing was noted to worsen the rash besides the passing time.

Both mother and grandmother did not note any changes in Hasan's temperature, stool or urine quality or quantity, or appetite. In addition, there were no symptoms of increased work of breathing, cough, or lethargy. However grandmother did say that Hasan was slightly more irritable.

This was Hasan's first medical visit following discharge after birth. Patient's family denies any illness within their current household and visiting relatives. The patient does not attend daycare.

Past Birth History

Mother is a 19 year old G1P1Ab0 whose first prenatal visit was in the second trimester. Her prenatal screen revealed a negative Hepatitis B antigen, negative HIV Screen and negative RPR (Rapid Plasma Reagin) for syphilis according to the OB discharge papers from the hospital; however, vaginal cultures came back positive for chlamydia. This was treated in the first trimester, with repeat test coming back negative. She was never diagnosed with genital herpes and denies ever having symptoms of this condition. At the time of delivery the patient was born full term at 40 weeks gestational and weighed 3.0 kg (Mom doesn't remember length.) Patient was delivered by spontaneous vaginal delivery without any complications such as premature rupture of membranes and prolonged labor. APGAR's are unknown but mom says Hasan did breath spontaneously at birth. Both mother and baby were discharged after a two-day hospital stay.

Past Medical and Surgical History

No past medical and surgical history to date. Mother denies any accidents and injuries.

Immunizations

BCG vaccine has been given in the nursery. Mother does not know the results of Hasan's neonatal screen.

Medications

No medications

Allergies

No known allergies

Family History

Paternal Grandfather – Healthy with no known med. problems

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Mother – Healthy with no known medical problems

Father – Healthy with no known med. problems

There is no family history of diabetes, seizures, cancer, heart disease, hypertension or sickle cell on the maternal side. However, very little is known about the paternal side.

Social History

Patient lives with his parents in the paternal grandfather's house. Mother has not graduated from high school at this time. She is not currently working outside of the home. Their residence contains no carpet, no pets & no smoking. Their neighbor, whom they visit frequently, has a cat and birds.

Diet

Hasan was breast-fed exclusively until one day prior to admission. Since then he has received milk formula with Iron, 90 – 120 ml every 3-4 hours. He receives occasional water.

Development

Mother has bonded with her son taking the main responsibility of care and feeding. Hasan is able to hold his head up off the bed. He cannot roll over and he smiles but not socially.

ROS

Hasan has been alert and easily consolable.

Eyes: Seems to have difficulty focusing at distances

Ears: non-contributory

Mouth: Mom noticed a white dot on the roof of his mouth since birth

Respiration: Negative as per HPI but mom did notice that he occasionally breathes fast then stops for a few seconds, then starts up again.

It's most noticeable when he sleeps.

Heart: No problems

Abdomen: Mom says Hasan passes a lot of gas. When he was breast-fed, he had a soft stool after every feed – sometimes 8-10 a day.

He has only had two stools in the last 24 hours. His umbilical cord fell off three days ago.

GU: Hasan displays a strong stream of urine when he voids.

Neurology: Hasan was very shaky after birth but that's slowly resolved.

Skin: see HPI

PHYSICAL EXAM

Vitals

Temp 37.8 rectal Pulse 156 Respiratory Rate 45 BP 86/47

Weight 3.41 kg (50%ile)

Height 54 cm (50%ile)

Head Circumference 37.5cm (50%ile)

See Growth Chars below:

General: Patient is a well-developed, well-nourished male in no apparent distress. Patient is asleep but easily arousable. Appears well hydrated.

Head: Normocephalic, atraumatic with thick hair. Anterior fontanelle measures 1x1 cm, is soft and flat with normal pulsations. Posterior fontanelle is fingertip. Sutures show mild molding with a remnant of a small right parietal cephalohematoma.

Eyes: Pupils equal, round and reactive to light. Extraocular muscles appear intact but patient too young to cooperate with exam. No discharge, conjunctivitis or scleral icterus. No ptosis. Patient focuses briefly on face. Fundi-unable to visualize. Positive red reflexes bilaterally.

Ears: Clear external auditory canals. Pinnae normal in shape and contour. No pre-auricular pits or skin tags.

TM's grey bilaterally. No erythema or suppuration.

Nose: Normal pink mucosa, no discharge or blood visible. Normal midline septum.

Mouth: moist mucous membranes, small 1mm white papule on posterior roof of mouth c/w Epstein's Pearl. Mild normal retrognathia. No evidence of a cleft on palpation of roof.

Throat: Unable to visualize tonsils. Pharynx shows no erythema or ulcerations. Normal movement of soft palate.

Neck: Grossly non-swollen. No tracheal deviation. No lymphadenopathy, goiter or masses detected.

Chest: Tanner II breast development – palpable nodule below both areolae. Round chest cavity. No increase of accessory muscles – no evidence of increased work of breathing. Lungs are clear to auscultation bilaterally. No stridor, wheezes, crackles, or rales. Good air movement.

CVS: Quiet precordium, no right ventricular heave, no thrills. PMI in left mid-clavicular line in 6th intercostal space. Regular rate and rhythm. Normal S1 with normally split S2 on respiration. No murmurs, gallops or rales. 2+ pulses in all extremities including strong bilateral femoral pulses. Capillary refill less than 2 sec.

Abdomen: Soft, non-tender, non-distended. Bowel signs present. Liver edge palpable 1 cm below costal margin with normal liver size of 5 cm. No noted splenomegaly. No masses. Umbilicus healing well – no erythema, discharge or foul smell; mild diastasis recti present.

Genitalia: Circumcised; normally placed urethral meatus. Bilaterally descended testes measuring 1.5cm bilaterally, GU Tanner I, Pubic Hair Tanner I; no hernias, no hydroceles.

Extremities: Warm, no clubbing, cyanosis or edema. No gross deformities. Good skin turgor with no tenting. Negative Barlow and Ortolani signs – no hip clunks.

Back: straight, no lordosis, no kyphosis. Symmetrical Gallant reflex present. No sacral dimple, no hair tuft. Positive Mongolian spot about 5 cm in diameter.

Skin: Vesicular lesions filled with whitish-yellow fluid covering the lower abdomen, inguinal region and upper thighs. The largest lesions measure 2mm by 3mm in size. Nikolsky sign - negative. Several small pea sized nodes palpable in both inguinal regions

Neurological: No focal deficits – moves all extremities symmetrically, appropriate tone.

CN I	deferred
CN II	can focus on face briefly
CN II, III	PERRL
CN III, IV, VII	unable to tell if eyes move in all directions
CN V	corneal reflex intact
CN VII	symmetrical facial expression, closes eyes forcefully
CN VIII	startles to clap
CN VII, IX, X, XII	positive gag, symmetrical soft palate movement, normal swallow and cry
CN XI	deferred

Normal symmetrical moro, gallant reflexes. Normal asymmetric tonic neck reflex. Normal stepping reflex. Symmetrical biceps and patellar DTR's, upward going plantar reflexes, 5-6 beat clonus both feet. Negative Brudzinski and Kernig signs.

Labs (Date and Time all labs)

CBC with Differential

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BMP & CMP (Basic Metabolic Panel, Comprehensive Metabolic Panel)

Ca	10.6
Tot Protein	6.0
Albumin	3.3
Tot bilirubin	0.7
ALT	7
AST	30

Urinalysis: (Date and Time) Collected by catheterization.

Negative for bacteria, leukocyte esterase, nitrite, WBC and RBC

CXR (Date and Time)

Preliminary findings are negative. Official reading pending.

CSF (Date and Time)

Glc 49
Protein 161 ↑
WBC 3
RBC 28,565
No organisms seen on gram stain

ASSESSMENT

1. 3 week old infant with localized vesicular diaper rash.
2. 3 week old infant with irritability.
3. Normal variations: Epstein pearl, Mongolian spot, periodic breathing, normal focal distance for infant, normal Babinski's in newborn, normal bowel pattern with breast and bottled milk, normal breast development in newborn secondary to maternal hormones.
4. High protein and RBC count on CSF – probably traumatic. No evidence of meningitis.

Differential:

Generalized Rash

Herpes Simplex
Erythema toxicum
Transient neonatal pustular melanosis
Epidermolysis bullosa
Incontinentia pigmenti
Congenital erosive and vesicular dermatitis
Congenital varicella
Staphylococcal scalded skin syndrome
Neonatal scabies

Localized Rash

Miliaria
Bullous impetigo
Herpes simplex

Discussion:

Although this rash is presenting in a localized area, we should at least consider other causes of generalized rashes since this may simply be the initial presentation that has yet to spread. When prioritizing our differential we should first consider those diseases that are most common as well as those diseases that are most likely to cause serious harm or possibly death.

The most common cause of localized vesicles in an otherwise healthy infant would be miliaria. This is a transient disorder of immature eccrine (sweat) glands that typically results in tiny vesicles filled with clear fluid. These are most often seen in areas that are moist and hot (like the diaper area) and tend to come and go. The vesicles that Hasan has are too big for the usual vesicles of crystalline miliaria. Other common neonatal rashes are erythema toxicum and Pustular melanosis. Erythema toxicum had a flea bitten appearance of tiny papules on a large red flare. Pustular melanosis had larger thick walled vesicles filled with turbid fluid all over the body. When these rupture they leave a collarette and a hyperpigmented macule. This is not seen in Hasan.

The most dangerous causes to consider are infectious. Herpes and staph scalded skin syndrome should both be considered early.

Neonatal Herpes can be devastating even if caught early. Typically there will be positive maternal history for herpes but a negative history does not rule it out. Lesions tend to be small vesicles on a red base that occur in clusters but can occur singly. The infant may have no systemic symptoms or may present in a toxic condition. Because this disease can be fatal, treatment is started when the condition is suspected, not held until a diagnosis is confirmed. Both enterovirus and adenovirus may present with the same lesions. Patient should be treated as if they have herpes until the definitive diagnosis is made.

Staph infections can also be deadly. It is an exfoliative dermatitis characterized by diffuse, tender erythema (toxin mediated), flaccid bullae, sheets of desquamating skin and a positive Nikolsky sign. The face, groin and axillae are most commonly affected. Less serious staph bullous impetigo is frequently seen in the diaper area, but again presents with larger, fluid filled bullae than we see in Hasan.

Congenital varicella should be suspected if a history of late gestation maternal exposure is obtained. This is not the case in this patient.

Neonatal scabies can present with vesicles but these are usually found all over the body including scalp, palms and soles.

Epidermolysis bullosa, Incontinentia pigmenti, Congenital erosive and vesicular dermatitis are in the differential diagnosis. However, all are much more rare, have larger, thick walled bullae or are seen mostly in females. They should be kept for consideration if other more common causes are ruled-out.

Plan

Because the differential diagnosis contains life-threatening diseases, the patient should be covered for these possibilities pending final diagnosis.

Because this is an infant and because we are considering a bacterial infection, we should perform a full septic workup which includes:

CBC with differential
Blood Cultures

Urinalysis and urine culture by catheterization

CXR

Complete Metabolic Profile – (check baseline renal function. Look at liver enzymes that may be high in herpetic infections)

CSF analysis with bacterial and viral culture, PCR for herpes (Caution: do not perform lumbar puncture through active herpes lesions.

May induce herpes encephalitis that might otherwise not have occurred.)

Vesicle fluid gram stain, Herpes DFA or PCR and aerobic, anaerobic and viral culture

After obtaining all cultures the patient should be started on appropriate antibiotics to cover potential organisms. If there had been any evidence for meningitis on physical or the CSF, I would start ampicillin to cover *Listeria monocytogenes*, cefotaxime to cover Group B strept, coliform bacteria, and more rarely pneumococcus: and vancomycin to cover staph. The most likely cause of the elevated protein and RBC count in the CSF is a traumatic tap. Since the tap showed no increased WBC's and listeria does not cause a bullous or vesicular rash, we can hold the ampicillin. However, if the patient deteriorates or diagnosis becomes more consistent with a bacterial cause, I would consider re-tapping the infant to get a better picture of what is going on in the CSF. Because of the potential for herpes simplex, I would start acyclovir as well.

Acyclovir 20mg/kg/dose q8hrs IV

Cefotaxime 150 mg/kg/day divided q8hrs IV

Vancomycin 15 mg/kg/dose q12hrs IV

Since patient is well hydrated and feeding well, there is no need to start IV fluids. Patient may receive a hep well for med administration. However, his intake must be monitored accurately to assure adequate hydration to protect the kidney during acyclovir administration. Monitor renal function if med will be continued for prolonged duration.

We will continue cow's milk formula ad lib for the patient but will consult the lactation consultant to help mother re-establish breast feeding.

Daily weights and accurate I's & O's

Vital signs q 4hrs

Contact isolation restrictions for herpes and staphylococcus.

Obtain results of neonatal screen.

References

1. Uniformed Services University of the Health Sciences.
2. Pediatric Clerkship, University of Chicago.
3. Feinberg, School of Medicine