University of Michigan Hospitals and Health Centers
Medical Documents

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Type	Case Date	Doctor	Patient Service	Service Dept
CONSULT-IP-N EW	03/27/2014	MOHR, BETHANY ANNE	SCAN	PED

Re: Burns, Naomi
Reg No: 100289621
DOB: 01/07/2014
Date of Service: 03/27/2014

CHILD PROTECTION TEAM INPATIENT CONSULTATION-CONTINUED

TIME OF CONSULTATION: Morning of Thursday, March 27, 2014, at approximately 8:30 am.

CONSULTATION REQUESTED BY: Terry Murphy, MD, Pediatric Hospitalist.

REASON FOR CONSULTATION: Naomi Burns is an 11 week-old female infant who was recently discharged from the University of Michigan C.S. Mott Children's Hospital on March 24, 2014, in the morning. Naomi returned to the UMHS PED via EMS that night with continued vomiting, pallor, and bradycardia. During her extensive workup for possible genetic/ metabolic disorders, an ophthalmologic evaluation was obtained yesterday, Wednesday, March 26, 2014, in order to evaluate for a possible glycogen storage disease. However, upon ophthalmological evaluation, Naomi was noted to have bilateral, multilayered, retinal hemorrhages to the periphery. Secondary to Naomi's retinal hemorrhages and clinical presentation, physical abuse of Naomi is suspected.

INFORMATION SOURCE: Naomi's medical documentation from the University of Michigan Health System and St. Joseph Mercy Hospital Health System; and Naomi's parents, Brenda (08-24-76) and Joshua (05-15-1976) Burns.

SUMMARY OF PREVIOUS MEDICAL COURSE:

03/18/2014

PREHOSPITAL CARE REPORT SUMMARY (LIVINGSTON COUNTY EMS)
Call received at 10:35 and on scene at 10:44.
Dispatch reason: "Sick/altered level of consciousness."
Provided oxygen. IO line placed.
Breathing rate slow; shallow breathing. Pale. Normal temperature. Capillary refill greater than 2 seconds.
Once en route, O2 switched to NR@30 breaths/min with O2 at 15LPM. HR continued to fluctuate from 160-90 BPM. Continuously stimulated en route in attempt to keep Naomi crying and HR from slowing. HR to 90 for approximately 5 seconds en route.

UMHS PED

TRIAGE/NURSING NOTES
Presented to UMHS PED at 11:16 with reported bradycardia and apnea. Receiving BMV. Cries with stimulation. Periods of apnea noted. Pale and cool to touch. Receiving high flow oxygen; 8 L/min at 40%.

PEDIATRIC EMERGENCY SERVICES EVALUATION NOTE
History of pallor and decreased responsiveness.
Intermittent pallor and occasional staring spells.
No fever.
T: 34.6
HR: 101
Oxygen saturation 100%.

PE: Lethargic. Strong cry. Sickly appearance. Sunken anterior fontanelle. Episodes of apnea that resolve with stimulation. Otherwise, WNL.
Clinical Impression: Hypovolemic shock; apnea.
2L/min NC transitioned to HFNC at 8L/min with 40% FiO2.
2 20 cc/kg NS boluses.
Throughout resuscitation, had relatively fixed gaze and made poor eye contact. Admitted to PICU.
Started on Ceftriaxone.

PICU ADMISSION 03/18-03/20
Apnea, hypothermia, mild hypotension (69/41), bradycardia (89 BPM) and increased RR (50s) in PED.
Admission PE: "AF is unexpectedly full for hydration status."
Ceftriaxone, Vancomycin and Acyclovir.
INTUBATED (Fentanyl/Versed PRN).
LP: 03/19.
EXTUBATED 03/19 at 17:00. Hoarse cry and quiet stridor. Racemic Epi/Decadron.

TRANSFER TO GENERAL PEDIATRICS 03/20-03/24
03/21 Progress Note: Few liquid green-black BMs overnight.
Around 14:00, friend holding Naomi who was asleep. 15 seconds of bilateral arms/legs extension and shaking. Sleep afterwards; but arousable. No apnea or desaturation during event.
Neurology consulted.
At 16:30, rhythmic shaking/stiffness of right hand. Head shaking to right. Eyes fixed. Lasted 15-20 seconds.
16:50, shaking right hand and staring. Pale, shallow breathing, apnea. No bradycardia or desaturations. Lasted 90 seconds.
CONTINUOUS EEG MONITORING; discontinued on 03/22.
TRANSFERRED TO MODERATE CARE.
Seizure activity noted.
Loaded with Phenobarbital and started on maintenance therapy.
Thought to be provoked seizures (due to viral illness likely resulting in a lowered seizure threshold) rather than epilepsy.
LTM REPORT (03/22): "This 2-day EEG recording was an abnormal awake and asleep EEG. The 2 events of right eye deviation, right hemibody rhythmic twitching correlated with left centro-parietal onset seizures. The asymmetric record showing left hemisphere 1-2 Hz slowing and a paucity of faster frequences suggested possible underlying structural injury

LTM EEG restarted on 03/23; parents concerned due to "blank expression," not smiling as much,dilated pupils and weaker cry. Sour smell to breath and green stools. Abnormal tongue movements, per parents. Decreased interaction thought to be due to Phenobarbital therapy. EEG revealed no further events/seizures.

03/24/2014

PREHOSPITAL CARE REPORT SUMMARY (LIVINGSTON COUNTY EMS)
Call received at 21:10 and on scene at 21:20.
Dispatch reason: "Sick/altered level of consciousness."
"Arrived to find 2 month-old female in arms of father who states patient 'isn't acting normally. Patient was sent home today with a prescription for Depakote which parents were unable to administer this evening. Father states that patient was laid down at 18:00 for bed and he awoke patient at 21:00 to administer Depakote and change her diaper. Father states that diaper was dry. When he attempted to administer oral Depakote, patient vomited."
Patient awake and alert. Skin pale and clammy. No acute distress and nonlabored breathing.
Patient's mother states that patient's cry has been higher pitched since discharge from hospital.
While in transit, patient presents with multiple episodes of decreased responsiveness which last for approximately 20 seconds at a time; resolve with painful stimulation.
BBO2.

UMHS PED

TRIAGE/NURSING NOTES
Vomiting and diarrhea (X1) today. Noted to be cool, mottled and pale by parents.
Patient pale, mottled and cool. Bradycardic on monitor.
Placed on HFNC at 6 L/min.

PEDIATRIC EMERGENCY SERVICES EVALUATION NOTE
T: 35.3 HR: 120 RR: 59 SpO2: 94%
Wt: 4.885 kg
PE: Pale-appearing infant. Drifts to sleep if not stimulated. Intermittently alert with strong cry when stimulated. AF full. Lethargic with decreased tone. Sucks pacifier without difficulty but drifts to sleep easily. Capillary refill 3-5 seconds. Mottling and pallor. Otherwise, WNL.
Upon presentation, noted to be bradycardic (HR=70s), hypothermic and grossly mottled. NS bolus given. Intermittently would increase HR to 140s when crying and then would return to 80-90s as she became more lethargic.
CUS: WNL.
Given hydrocortisone.
Admitted to the PICU.

PICU ADMISSION 03/24
Bradycardia, skin mottling and decreased responsiveness.

TRANSFER TO GENERAL PEDIATRICS 03/24
LTM EEG 03/26 due to episode of pallor, bradycardia and decreased interaction: The interictal EEG background was normal in the awake and asleep states. No interictal epileptiform discharges or seizures recorded.
LTM EEG 03/27: No events recorded. Monitoring discontinued.

LIVINGSTON PEDIATRICS GROWTH CHARTS:
2 months:
HC at 90th %ile.
Length at 97th %ile.
Weight at 20th %ile.

LABS:
Newborn Screen 01/08/2014: WNL.
Blood Culture (03/26 11:09): PENDING
CMV DNA qPCR (03/26): PENDING
Urine mucopolysaccharides (03/26): PENDING
HSV 1/HSV 2 DNA qPCR, Blood (03/26): PENDING
Enterovirus PCR (03/26): PENDING
UOA (03/24): PENDING
PAA (03/21 and 03/25): PENDING

CSF Culture/Smear (03/26 11:30): No organisms seen/NGTD.
(03/18 23:16): No organisms seen/no growth.
Blood Culture (03/24 22:11 and 22:45): NGTD.
(03/18 11:45): No growth.
GCMS Drug Screen (03/26 16:18): Acetaminophen, Phenobarbital and Ranitidine.
Drug 6 (03/26 16:18): +Barbiturate.

Procalcitonin (03/26): WNL.
CSFCD (03/26 11:30): Hazy, pink, no xanthochromia, 4640 RBCs/75 WBCs
(03/18 23:16): Opaque, red, no xanthochromia, 49000 RBCs/16 WBCs
Toxoplasma IgG Ab (03/26): Negative.

Toxoplasma IgM Ab(03/26): Negative.
CMV IgG and IgM Abs(03/26): Negative.
Rubella IgG (03/26): Reactive.
CSF Protein and glucose (03/26): WNL.

BMP (03/26 11:09): WNL.
Urine culture (03/24 22:57): No growth.
(03/18 12:01): No growth.

CBCP (03/26 11:09): 17.8/9.8/28.1/785 (H)
(03/25 00:20): 12.7/9.2/25.4/725 (H)
(03/21 06:26): 7.1/9.5/26.3/781 (H)
(03/18 11:45): 14.9/9.6/26.8/601 (H)
Respiratory Pathogen Panel; PCR (03/18 and 03/24): negative.
ACTH (03/24 22:32): 369 (H)
Cortisol (03/24 22:29): 47.9 (H)
UOA (03/21 09:52): Abnormal; nondiagnostic. Multiple abnormal species of uncertain significance. Recommend acylcarnitine profile.
Acylcarnitine profile (03/21): WNL
Free T4/TSH (03/25): WNL

Ammonia level (03/25 00:20): WNL.
(03/21 06:26): WNL.
(03/21 19:00): WNL.
UA (03/24): Negative.
CMP (03/24 22:29): WNL (AST/ALT/ALP)
(03/18 11:45): WNL (AST/ALT/ALP)
Stool occult blood test (03/21): Negative.

HSV DNA, PCR, SCF (03/18 23:16): Not detected.

ER Gas Lytes, Venous BG (03/18 11:28): Lactic acid 5.1 (0.5-2.2); HCO3 18 (22-26).
ER Gas Lytes, Arterial BG (03/24 22:29): Lactic acid 4.3 (0.5-2.2)
Lactate WNL upon repeat.

STUDIES:
ECG (03/18, 3/24): WNL
(03/26): PENDING
Echo (3/21): WNL

CONSULTANTS:
Pediatric Genetics
-4 weeks to regain birthweight.
-Development WNL previously.
-"Her plasma amino acids sent during her prior admission were concerning for an elevated glutamine of 1360 and a mildly elevated arginine. However, she had 2 ammonia levels during her prior hospitalization and 1 normal ammonia level on her admission at this hospitalization. She also had a normal acylcarnitine profile. Her urine organic acids are complete and do not show any diagnostic abnormalities. Specifically, the presence of orotic acid was not detected. At this point, it is unlikely that she has a urea cycle disorder given multiple normal ammonia levels. I cannot think of anything that would cause an elevated glutamine in the setting of a normal ammonia. However, I do not know what these herbal supplements might cause, and I suppose it is possible that they could cause an elevated glutamine. If the repeat plasma amino acid sample is not normal, I would recommend that her mother stop the supplements and repeat the plasma amino acids in approximately 1 week. It is still unclear why she is having such significant decompensations in the setting of a viral gastroenteritis. She does have a large

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head size. I am in the process of obtaining the medical records including her growth charts from her pediatrician. Because of the relatively large head, I would recommend an ophthalmologic exam to look for evidence of a possible storage disorder. I would also recommend sending urine mucopolysaccharides. Otherwise, I would recommend thinking about things other than metabolic disease as an underlying cause. I would consider repeating toxoplasmosis or Torch titers on Naomi. I would also consider repeating an abdominal ultrasound to make sure that she does not have pyloric stenosis. We will be in touch with the medical team once the repeat laboratory studies have returned. We will determine followup pending the results of the laboratory studies."
-PAA from 03/21 revealed elevated glutamine (1360 (333-809)) and arginine (147 (12-112)). PAAs repeated.
Pediatric Hematology
Pediatric Neurology
Pediatric Endocrinology (Elevated ACTH and cortisol considered appropriate response to the acute illness.)
Pediatric Neurosurgery

Bethany Mohr, MD
Assistant Professor

//Electronically signed by Bethany Mohr, MD/10542 on 03/28/2014 10:20:30//

DEPARTMENT OF PEDIATRICS AND COMMUNICABLE DISEASES
Child Protection Team

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