Kingdom of Bahrain

Arabian Gulf University

College of Medicine and Medical Sciences

Case Write-Ups

(Year 5 – Pediatrics)

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CASE – 1: Bronchopneumonia

Summary: H.A.A is a 4 months old Bahraini males who was admitted to BDF Hospital due to fever and cough (for two weeks) and dyspnea (for three days). He was set on antibiotics, hydration and oxygen and his condition has improved.

- **Personal Information:**

Name	H.A.A
Gender	Male
Age	4 months
Date of birth	30/08/2015
CPR	16081****
Hospital	BDF
Date of admission	22/12/2016
Informer	Mother

- **Presenting Complaint:**
  - Fever and cough (for two weeks prior to admission); difficulty in breathing (for three days prior to admission).

- **History of Present Illness:**
  - **Sequence of Events:**
    - ✓ Two weeks prior to admission, H.A.A experienced fever and cough. He was taken to Kano Local Health Center and a private hospital where he was set on hydration and given a voltaren in a nebulizer in addition to paracetamol but his condition did not improved. He experienced difficulty in breathing and his mother got worried about his condition and this forced her to bring him to BDF hospital where he was admitted.
  - **Analysis of Symptoms:**
    - ✓ Fever: it was a low-grade fever (38 C) experienced every other day. Rigors were associated and sometimes there was sweating. There were no convulsions, no skin rash, no vomiting or diarrhea and no pain/crying with urination (no UTI).

- ✓ Cough: it was continuous, productive and severe (that sometimes there was post-tussive vomiting following the severe cough episode). The cough was associated with shortness in breath and tachypnea.
- ✓ There is normal activity and feeding. There is no contact with sick members in the family and no past hospital admissions for the same reason.

- **Systemic Review:**
  - **Central Nervous System**: there is no syncope, no seizures, no visual disturbances or hearing loss.
  - **Cardiovascular and respiratory**: there is no swelling of lower extremities. There is shortness of breath, productive cough but no hemoptysis, no stridor or wheezes.
  - **Gastrointestinal**: feeding and bowel motion are normal. There is no GERD, no hematemesis and no dysphagia.
  - **Genitourinary**: there is no change in urine output or pain with urination (dysuria). There is no hemturia or abnormal color of the urine.

- **Past Medical History:**
  - **Pregnancy**: H.A.A was a term baby. There was no exposure to infectious diseases, medications, alcohol or tobacco during pregnancy. There were no other complications.
  - **Delivery**: spontaneous vaginal delivery of a 3.4 kg male in BDF Hospital. The baby cried and was pinkish in color (good APGAR score).
  - **Neonate**: there were no neonatal complications (e.g. hypoglycemia, cyanosis, pallor, seizures, jaundice, skin lesions, skeletal deformities or respiratory distress).
  - **Infancy**: no surgeries or previous admissions to the hospital.

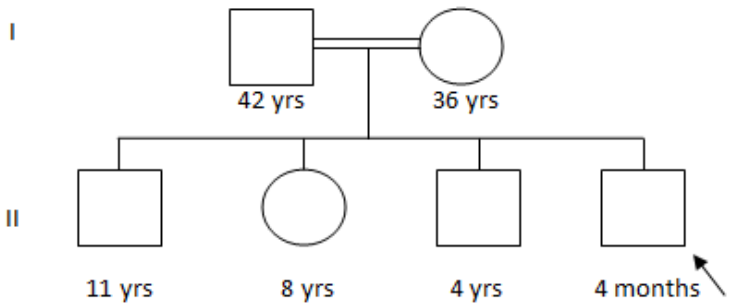
- **Medications and Allergy:**
  - The patient is not taking regular medications at home and currently set on an antibiotic to manage his condition.
  - He has no allergy drugs (food is still not introduced to his diet).

- **Developmental History:**
  - H.A.A has a head control, he reaches for objects, fixes and follows. In addition, he cries and laughs. All of these milestones which are appropriate for his age indicate a normal development.

- **Nutritional History:**
  - H.A.A is breastfed. In addition, the mother uses formula (because she is working). The formula is used 2-3 times a day (120 ml in each time).

- **Immunization History:**
  - The patient is immunized for his age (this was confirmed by asking the mother to show the certificate of vaccination):
    - ✓ Four months; (DaPT + Hepatitis B + HiB); OPV; conjugated pneumococcal and rota vaccine (all of these are 2nd doses).

- **Family History:**



  - There are no medical illnesses or genetic diseases within the family.

- **Psychosocial History;**
  - H.A.A lives in a house with his parents and siblings. His mother works in a kindergarten and his father works in the military. No one is smoking at home. They have no pets and there is no history or recent travel.

- **Physical Examination:**
  - **Vital Signs:**

Temperature	36.2
Blood pressure	Not available
Pulse	126 beats/ minute
Respiratory rate	46 breaths/ minute
Oxygen saturation	98%

  - **Growth Chart**: his weight is 7.6 kg and it is normal for his age.
  - **General Inspection**: H.A.A was conscious, not sick-looking, not in respiratory distress. He was connected to an IV line and pulse oximeter. Anterior fontanel is not depressed or bulging, there is no pallor or jaundice. Capillary refill time is normal and there are no signs of dehydration.
  - **Specific Examination:**
    - ✓ Respiratory: there is normal air entry and it is equal on both sides with no added sounds.
    - ✓ Heart: normal heart sounds (S1 and S2) with no murmurs.
    - ✓ Abdomen: it is soft and there is no organomegaly.

- **Investigations:**

WBCs	12.5 x 10^9/L	**Monocytes**	11.8%
RBCs	4.41 x 10^{12}/L	**Eosinophils**	2.5%
HGB	138 g/L	**Na**	139 mmol/L
Hct	0.4 L/L	**K**	4.17 mmol/L

MCV	91.2 fL	**Cl**	99 mmol/l
RDW	17.8%	**Urea**	3 mmol/L
Platelets	294 x 10^9/L	**Uric acid**	345 µmol/L
Neutrophils	46%	**Ca**	2.36 mmol/L
Lymphocytes	39.1%	**Mg**	1.05 mmol/L
Albumin	39.7	**Bilirubin (indirect)**	0.8 µmol/L
Globulins	26.3	**ALP**	119 IU/L
Bilirubin (total)	2 µmol/L	**ALT**	39 IU/L
Bilirubin (direct)	1.2 µmol/L	**AST**	71.7 IU/L

- **Chest X-ray showed**: lung infiltration suggestive of bronchial pneumonia.

- **Final diagnosis:**
  - Bronchial pneumonia.

- **Treatment at Hospital:**
  - Hydration, oxygen and antibiotics.

- **Personal Reflection:**
  - In my opinion, this case was simple and typical of pneumonia. Clinical features which were suggestive are fever, productive cough and shortness of breath which was confirmed with chest X-ray. The mother was very cooperative and answered my questions clearly and allowed me to examine her son. Management was somehow unclear although the patient was set on hydration and antibiotics but I could not identify which antibiotic and for how long it will be used, but it was noticed that the patient's condition is improving and getting better.
  - Pneumonia is defined as infection and inflammation of lung parenchyma. the cause can be viral or bacterial. The following is a comparison between the two:

- ✓ Bacterial pneumonia: it is characterized by fever, cough and dyspnea. Rales are heard on examination. Investigations show WBCs with a neutrophil predominance and lobar consolidation of bronchial infiltration on chest X-ray. Management is with antibiotics and supportive care.
- ✓ Viral Pneumonia: it is characterized by fever, cough and dypnea. Rales are heard on examination. Investigations show WBCs with a lymphocyte predominance and interstitial infiltrates on chest X-ray. Management is supportive.

CASE – 2: Sickle Cell Disease (SCD)

Summary: A.A.N is a 7 years old Bahraini male who was admitted to SMC Hospital due to Fever and backache (for three days); leg pain (for three days) and chest pain (for one day). He was managed with hydration and analgesia and his condition has improved.

- **Personal Information:**

Name	A.A.N
Gender	Male
Age	7 years
Date of birth	30/12/2008
CPR	08121****
Hospital	SMC
Date of admission	07/12/2016
Informer	Mother

- **Presenting Complaint:**
  - Fever and backache (three days prior to admission).
  - Leg pain (three days prior to admission).
  - Chest pain (one day prior to admission).

- **History of Present Illness:**
  - **Sequence of Events:**
    - ✓ Three days prior to admission, A.A.N experienced fever and leg pain which then moved to his back within a short period. He was given Panadol and Brufen for two days but his condition did not improved. Therefore, he was taken to Al-Aali Local Health Center where he experienced chest pain and was referred to SMC to be admitted.
  - **Analysis of Symptoms:**
    - ✓ Backache: the pain started suddenly and was felt in the mid-back. The pain was moderate (the patient gave a score 5 out of 10) and it was somehow relieved by analgesia (Brufen).
    - ✓ Leg pain: the pain was felt in the left thigh and it was radiating to the whole limb. The pain was severe (the patient gave a score 8 out of 10).

It was somehow relieved with analgesia (Brufen) and increased with walking.

- ✓ Fever: it was low-grade (but not measured at home). It was not associated with chills, rigors or sweating. There is no skin rash, no convulsions, no vomiting or diarrhea, no urinary symptoms and no pain in the bones.
- ✓ Chest pain: there was no shortness of breath but there was a mild intermittent dry cough with no runny nose.
- ✓ There is a contact with a sick family member who has an Upper Respiratory Tract Infection (URTI). There is no history of trauma.

- **Systemic Review:**
  - **Central Nervous System**: there is no syncope, no seizures, no visual disturbances or hearing loss.
  - **Cardiovascular and respiratory**: there is no swelling of lower extremities. the patient sleeps on one pillow. There are no palpitations but there is chest pain. There is no shortness of breath. Patient has a mild cough but no hemoptysis, no stridor or wheezes.
  - **Gastrointestinal**: there is no loss of appetite, no diarrhea, no constipation and no vomiting. There is no GERD, no hematemesis and no dysphagia.
  - **Genitourinary**: there is no change in urine output or pain with urination (dysuria). There is no hemturia or abnormal color of the urine.

- **Past Medical History:**
  - **Pregnancy**: A.A.N was born at 36 weeks of gestation because the mother had pre-eclampsia. There was no exposure to infectious diseases, medications, alcohol or tobacco during pregnancy. There were no other complications.

- **Delivery**: LSCS due to cephalo-pelvic disproportion. Birth weight was 2.8 kg and the baby was born in SMC. The baby cried and was pinkish in color (good APGAR score).
- **Neonate**: there were no neonatal complications (e.g. hypoglycemia, cyanosis, pallor, seizures, jaundice, skin lesions, skeletal deformities or respiratory distress).
- **Childhood**: A.A.N is a known case of sickle cell disease (he was just admitted one before when he was 5 years old due to pain in lower extremities and was managed with hydration and analgesics for five days). There are no other serious illnesses, no past surgeries, no accidents or injuries, no previous blood transfusions and no infectious diseases other than chickenpox which he experienced when he was 4 years old.

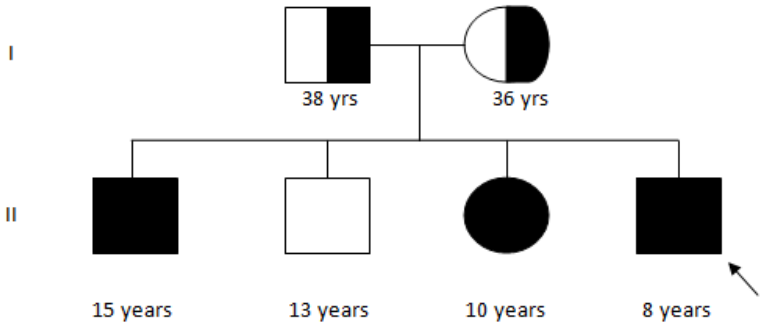
- **Medications and Allergy:**
  - The patient is taking folic acid regularly (in addition to Brufen whenever he experiences pain).
  - He has no allergy to drugs or food.

- **Developmental History:**
  - The mother could not remember the exact time of events but she mentioned that the patient's development was normal. He is social (has a lot of friends). He is an excellent student at school and has a normal sleeping pattern.

- **Nutritional History:**
  - A.A.N has a good appetite and eats three main meals a day with snacks in between. He eats the normal food of the family.

- **Immunization History:**
  - The patient is immunized for his age (this was confirmed by asking the mother to show the certificate of vaccination). In addition, he took the special vaccines for SCD patients.

- **Family History:**



  - There is no consanguinity between the mother and the father. Both of them are sickle cell trait. They have no other chronic medical illnesses or genetic diseases. They have four children, three of them has sickle cell disease and one is healthy. Their children has no other medical illnesses.

- **Psychosocial History:**
  - A.A.N lives in a house with his parents and siblings. His mother is a housewife and his father works in ALBA (good income). His father is a smoker. They have no pets and there is no history of recent travel.

- **Physical Examination:**
  - **Vital Signs:**

Temperature	37.4 C
Blood pressure	109/77
Pulse	136 beats/ minute

Respiratory rate	No available
Oxygen saturation	99%

- **Growth Chart**: his weight is 21.6 kg and it is normal for his age.
- **General Inspection**: A.A.N was conscious, alert, not sick-looking, not in respiratory distress. He was connected to an IV line. He was pale but not jaundiced. Capillary refill time is normal and there are no signs of dehydration.
- **Specific Examination:**
  - ✓ Lower limbs (left): there is no erythema, no swallowing, no warmth. There is mild tenderness and some limitation of movements.
  - ✓ Respiratory: normal air entry to the lungs and equal on both sides. no added sounds.
  - ✓ Heart: normal heart sounds (S1 and S2) with no murmurs.
  - ✓ Abdomen: it is soft and there is no organomegaly.

- **Investigations:**

WBCs	7.29 x 10^9/L	**Bilirubin (direct)**	10 µmol/L
RBCs	3.9 x 10^{12}/L	**Bilirubin (indirect)**	14 µmol/L
Hb	8.2 g/dL	**Na**	138 mmol/l
Hct	26.7%	**K**	4.2 mmol/L
MCV	68.5 fL	**Cl**	106 mmol/l
RDW	19.1%	**Ca**	2.28 mmol/L
Platelets	142 x 10^9/L	**HCO_3**	24 mmol/L
Neutrophils	74.2%		
Lymphocytes	19%		
Creatinine	20 µmol/L		
Glucose	6.4 mmol/L		
Urea	3.5 mmol/L		
Bilirubin (total)	24 µmol/L		

- **Final diagnosis:**
  - Vasoocclusive crisis of Sickle Cell Disease (SCD)

- **Treatment at Hospital:**
  - Analgesia (IV paracetamol) + hydration (1 ½ maintenance).

- **Personal Reflection:**
  - Sickle cell disease is one of the most common genetic disorders which are prevalent in our area especially here in kingdom of Bahrain. This autosomal recessive disorder increases when there is consanguinity between parents and considered as one of the huge economical issues on the government which must manage these patients and prevent future crisis among them.
  - In this disorder, an abnormal hemoglobin will be formed which is HbS (this is due to a single amino acid substituition of valine for glutamic acid on the number 6 position of β-globin chain). Therefore, when a person is exposed to low oxygen (due to dehydration, exercise… etc) RBCs will polymerize thus occluding small blood vessels resulting in distal ischemia, infarction and organ dysfunction.
  - Diagnosis of the disease is made by Hb electrophoresis (which is highly sensitive and specific).
  - Clinical characteristics are not generally present until protective HbF declines (by 6^{th} month of age). There are 5 main types of crisis which can be experienced:

Crisis	Clinical features	Management
Vasoocclusive	Most common crisis resulting in ischemia/infarction of the bone	Pain control (analgesics) and IV fluids (hydration)
Acute chest syndrome	Pulmonary infiltrate associated with respiratory symptoms (e.g. cough, SOB and chest pain) and caused by S.pneumoniae	Careful hydration and pain management; oxygen and appropriate antibiotics (cefuroxime & azithromycin)

Sequestration	Rapid accumulation of blood in spleen characterized by abdominal distention, abdominal pain and pallor. ↓Hb and ↑retics	Supportive care; blood transfusion and splenectomy (recommended by some pediatricians).
Aplastic	Temporary cessation of RBC production often caused by parvovirus B19. ↓Hb and ↓retics	Supportive care and transfusion of RBCs
Hemolytic	Rapid hemolysis. Often occurs in patients with other hemolytic diseases (e.g. G6PD deficiency). ↑retics	Supportive care and transfusion of RBCs

CASE – 3: Acute Pancreatitis

Summary: H.S.H is 5 years old Bahraini male who was admitted to SMC Hospital due to acute abdominal pain and vomiting (for one day duration). He was diagnosed as a case of acute pancreatitis and managed with IV fluids, analgesic and change in diet (low-fat).

- **Personal Information:**

Name	H.S.H
Gender	Male
Age	5 years
CPR	11105****
Hospital	SMC
Date of admission	11/12/2016
Informer	Mother

- **Presenting Complaint:**
  - Acute severe abdominal pain and vomiting for one day prior to admission.

- **History of Present Illness:**
  - **Sequence of Events:**
    - ✓ One day prior to admission, H.S.H experienced severe abdominal pain all of a sudden when he was playing with his cousin. The pain was followed by vomiting. Patient was taken to Sitra Local Health Center where he was given IV fluid and was then referred to SMC where he was admitted.
  - **Analysis of Symptoms:**
    - ✓ Abdominal pain: the patient had a sudden generalized abdominal pain which was continuous and lasted for 6 hours before going to the health center. The pain was very severe and the patient gave a score 10 out of 10. It was stabbing in character but not radiating to anywhere else. It was not relieved by paracetamol and buscopan and it was aggravated with movement. The pain was associated with vomiting.
    - ✓ Vomiting: H.S.H vomited 4 times. The vomit was containing food and then stomach juice. It was non-projectile.

- ✓ There is no history of trauma, no fever, no diarrhea, no urinary symptoms, no history of eating from outside, no contact with sick members among the family but there was loss of appetite due to the severe pain and vomiting.

- **Systemic Review:**
  - **Central Nervous System**: there is no syncope, no seizures, no visual disturbances or hearing loss.
  - **Cardiovascular and respiratory**: there is no swelling of lower extremities. the patient sleeps on two pillows. There are no palpitations and no chest pain. There is no shortness of breath. Patient has no cough, no hemoptysis, no stridor or wheezes.
  - **Gastrointestinal**: there is loss of appetite, no diarrhea, no constipation but there is vomiting. There is no GERD, no hematemesis and no dysphagia.
  - **Genitourinary**: there is no change in urine output or pain with urination (dysuria). There is no hemturia or abnormal color of the urine.

- **Past Medical History:**
  - **Pregnancy**: H.S.H is a term boy. The mother had no exposure to infectious diseases, medications, alcohol or tobacco during pregnancy. There were no other complications.
  - **Delivery**: he was delivered via cesarean section in SMC due cephalopelvic disproportion. Birth weight was 3.2 kg. The baby cried and was pinkish in color (good APGAR score).
  - **Neonate**: there were no neonatal complications (e.g. hypoglycemia, cyanosis, pallor, seizures, jaundice, skin lesions, skeletal deformities or respiratory distress).

- **Childhood**: H.S.H has a low-activity G6PD. There are no serious illnesses, no past surgeries, no accidents or injuries, no previous blood transfusions and no infectious diseases other than chicken pox which he experienced last year (4 years old).

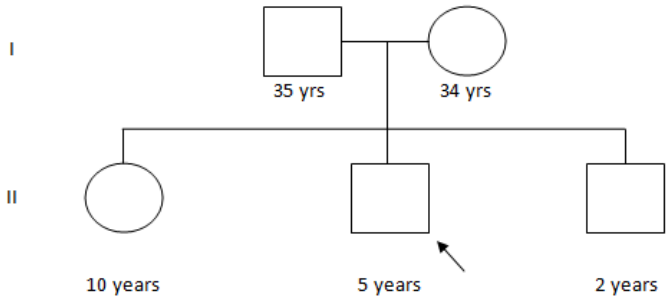
- **Medications and Allergy:**
  - The patient is not taking any medications regularly.
  - He has no allergy to drugs or food.

- **Developmental History:**
  - The mother could not remember the exact time of events but she mentioned that the patient's development was normal. He is social (has a lot of friends). All of his teachers in kindergarten love him. He has a normal sleeping pattern.

- **Nutritional History:**
  - H.S.H has a good appetite and eats two main meals a day (skipping breakfast) with snacks in between. He eats the normal food of the family.

- **Immunization History:**
  - The patient is immunized for his age (this could not be confirmed by asking the mother to show the certificate of vaccination).

- **Family History:**



- There is no consanguinity between the mother and the father. The father has G6PD. Both parents have no other medical illnesses or genetic disorders. They have three children, one of them (H.S.H has a low-activity G6PD) and the remaining are healthy.

- **Psychosocial History:**
  - Patient lives in a house with his parents and siblings. His mother is a housewife and his father works in a bank (they have a good income). No one is smoking at home. They have two birds. There is no history of recent travel.

- **Physical Examination:**
  - **Vital Signs:**

Temperature	37 C
Blood pressure	105/55
Pulse	100 beats/ minute
Respiratory rate	22 breaths/minute
Oxygen saturation	99%

  - **Growth Chart**: his weight is 22 kg and it is normal for his age.
  - **General Inspection**: H.S.H is conscious, alert. He is rolling on bed due to pain, pointing to abdomen and crying loudly. He was connected to an IV line and doesn't seem to be in respiratory distress. He was not pale or jaundiced. Capillary refill time is normal and there are no signs of dehydration.
  - **Specific Examination:**
    - ✓ Abdomen tenderness was felt all over the abdomen (could not progress further with examination due to this pain).
    - ✓ Respiratory: normal air entry to the lungs and equal on both sides. no added sounds.
    - ✓ Heart: normal heart sounds (S1 and S2) with no murmurs.

- **Investigations:**

WBCs	6.17 x 10^9/L	**Serum amylase**	891 U/L
Hb	10.9 g/dL	**Urea**	3.2 mmol/L
Na	136 mmol/L	**Albumin**	45 g/L
K	4.3 mmol/L	**Bilirubin (total)**	5 µmol/L
Cl	103 mmol/L	**Bilirubin (direct)**	2 µmol/L
HCO_3	23 mmol/L	**Bilirubin (indirect)**	3 µmol/L
PT	13.2 s	**ALP**	273 U/L
APTT	26.1 s	**ALT**	15 U/L
Fibrinogen	218.4 mg/dL	**GT**	20 U/L
TT	16.5 s	**Uric acid**	125 µmol/L
Urine amylase	487 U/L		
Creatinine	20 µmol/L		

- **Final diagnosis:**
  - Acute pancreatitis.

- **Treatment at Hospital:**
  - NGT free drainage.
  - IVF, 1.5 maintinence; 2L/ 24 hours; ringer lactate.
  - Pain killer in regular basis (Perfalgan).
  - Change diet to low-fat.

- **Personal Reflection:**
  - This was a very interesting case as I was taking history from another patient and Dr. Deena called me and told the chief complaint (acute abdominal pain and vomiting) then asked about my differential diagnosis. I mentioned appendicitis, cholecystitis and obstruction but I forgot that acute pancreatitis

could be a cause. Therefore, she provided me with a hint by showing me the lab results (especially urine amylase which was highly increased) and I could reach the diagnosis. Then, she asked to take the patient's history so I get more knowledge about this disease.

- Acute pancreatitis is an acute inflammatory process of the pancreas. Ductal obstruction leads to premature activation of pancreatic proenzymes and autodigestion of pancreatic cells. The most common cause of this condition is blunt trauma (which is not present in this patient). Other causes include infections, congenital anomalies (obstruction) and systemic diseases such as cystic fibrosis.
- The patient usually presents with acute abdominal pain that occurs in the periumbilical or epigastric area and may radiate to the back (this was not typically found in this patient as he had generalized abdominal pain that was not radiating). In addition, fever, anorexia, nausea and vomiting are common.
- Diagnosis can be made by checking serum amylase or serum lipase which is more specific. Abdominal ultrasound is the most common method used for diagnosing and monitoring acute pancreatitis.
- These cases are managed by:
    - ✓ Supportive care: bed rest, hydration, electrolyte correction and analgesia. Notice that oral feedings are restricted.
    - ✓ Antibiotics are indicated for severe, acute necrotizing pancreatitis.

CASE – 4: Bronchiolitis

Summary: A.M is a 2 months old Bahraini males who was admitted to BDF Hospital due to severe cough and tachypnea (for two weeks duration). The patient was diagnosed as having bronchiolitis and was managed with hydration, oxygen mask and nebulized bronchodilators.

- **Personal Information:**

Name	A.M
Gender	Male
Age	2 months
Date of birth	29/09/2016
Hospital	BDF
Date of admission	27/12/2016
Informer	Mother

- **Presenting Complaint:**
  - Severe cough and fast breathing for two weeks prior to admission.

- **History of Present Illness:**
  - **Sequence of Events:**
    - ✓ Two weeks prior to admission, A.M developed severe cough. After two days, the mother noticed that there is fast breathing and a wheezing sound with the cough. Therefore, she took him to Al-Hidd Local Health Center where they set him on a nebulizer. He improved for a while but later his condition became worst, so she brought him to BSF Hospital where he was admitted.
  - **Analysis of Symptoms:**
    - ✓ Cough: the cough was continuous and severe (sometimes followed by post-tussive vomiting). The cough was productive and associated with wheezing (which was heard and described by the mother). In addition, severe cough episodes where associated with cyanosis (baby's face turn into bluish discoloration). There is shortness of breath and tachypnea. The cough is only relieved while sleeping.

- ✓ Fever: patient's cough was associated with low-grade fever (37.8 C) which was intermittent with no chills or sweating. The fever was no associated with convulsions, skin rash, vomiting, diarrhea or crying with urination (UTI). There is normal activity and feeding.
- ✓ There is no history of contact with sick family members and there is no past admission for the same reason.

- **Systemic Review:**
  - **Central Nervous System**: there is no syncope, no seizures, no visual disturbances or hearing loss.
  - **Cardiovascular and respiratory**: there is no swelling of lower extremities. There shortness of breath and tachypnea. Patient has severe cough with wheeze but no hemoptysis or stridor.
  - **Gastrointestinal**: feeding is normal, no diarrhea, no constipation but there is post-tussive vomiting (small amount that is associated with severe cough episodes). There is no GERD, no hematemesis and no dysphagia.
  - **Genitourinary**: there is no change in urine output or pain with urination (dysuria). There is no hemturia or abnormal color of the urine.

- **Past Medical History:**
  - **Pregnancy**: A.M is a term boy. The mother had no exposure to infectious diseases, medications, alcohol or tobacco during pregnancy. There were no other complications.
  - **Delivery**: he was delivered via cesarean section in BDF Hospital due to prolonged obstructed labour. Birth weight was 3.8 kg. The baby cried and was pinkish in color (good APGAR score).

- **Neonate**: there were no neonatal complications (e.g. hypoglycemia, cyanosis, pallor, seizures, jaundice, skin lesions, skeletal deformities or respiratory distress).
- There are no past surgeries or admissions to the hospital.

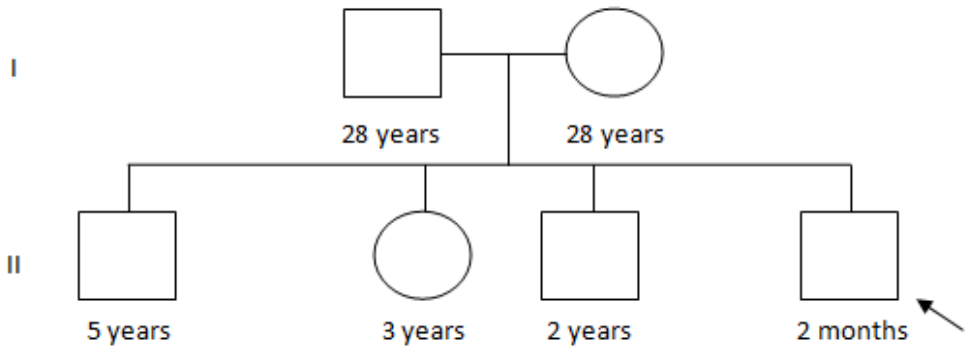
- **Medications and Allergy:**
  - The patient is not taking any medications regularly but currently he is on nebluzied bronchodilators due to his condition.
  - He has no allergy to drugs.

- **Developmental History:**
  - Development is normal. A.M moves all of his limbs, he developed some head control, he looks, cries, smiles and startles to noise.

- **Nutritional History:**
  - A.M is exclusively breast-fed.

- **Immunization History:**
  - The patient is immunized for his age (this could not be confirmed by asking the mother to show the certificate of vaccination for 2 months).

- **Family History:**



- There is no consanguinity between the mother and father. The father has no medical illnesses. The mother has hypothyroidism and she is on treatment (L-thyroxin). They have four children. The girl (three years old) is still not moving due to perinatal asphyxia. The rest of their children are healthy and has no medical illnesses or genetic diseases.

- **Psychosocial History:**
  - A.M lives in a flat with his parents and siblings. His mother is a housewife and his father works in the military (they have a good income). No one is smoking at home. They have no pets and there is no history of recent travel.

- **Physical Examination:**
  - **Vital Signs:**

Temperature	36 C
Blood pressure	Not available
Pulse	134 beats/ minute
Respiratory rate	40 breaths/minute
Oxygen saturation	98%

  - **Growth Chart**: his weight is 6.5 kg kg and it is normal for his age.
  - **General Inspection**: A.M is conscious and looking-well. He is connected to IV line and has an oxygen mask. He is active and not in respiratory distress. He is smiling and is actively coughing. There are no signs of dehydration.
  - **Specific Examination:**
    - ✓ Respiratory: there is tachypnea but no retractions. Chest expansion is symmetrical with normal air entry that is equal on both sides. A diffuse wheeze can be heard.
    - ✓ Heart: normal heart sounds (S1 and S2) with no murmurs.
    - ✓ Abdomen: soft with no organomegaly.

- **Investigations:**

WBCs	7.46 x 10^9/L	**Bilirubin (indirect)**	1.40 µmol/L
RBCs	3.32 x 10^{12}/L	**G6PD (Quant.)**	34.63
HGB	98 g/L	**TSH**	7.16 µIU/ml
Hct	0.29 L/L	**Na**	137 mmol/L
MCV	87 fL	**K**	4.19 mmol/L
RDW	15.1%	**Cl**	101.2 mmol/l
Platelets	486 x 10^9/L	**Urea**	2 mmol/L
Neutrophils	37.6%	**Uric acid**	145 µmol/L
Lymphocytes	47.3%	**Ca**	2.43 mmol/L
Monocytes	13.8%	**Creatinine**	11 mmol/L
Eosinophils	0.8%	**ALP**	247 IU/L
Albumin	39.7	**ALT**	27.5 IU/L
Globulins	16.30	**AST**	38.3 IU/L
Bilirubin (total)	4.60 µmol/L	**GGT**	56.0 IU/L
Bilirubin (direct)	3.2 µmol/L		

  - Chest X-ray: hyperinflation of the lungs with some infiltration.
- **Final diagnosis:**
  - Bronchiolitis.
- **Treatment at Hospital:**
  - IV fluids.
  - Oxygen.
  - Nebulized bronchodilators.
- **Personal Reflection:**
  - In my opinion, this is a typical case of bronchiolitis as the patient is less than 2 year of age, presenting with severe cough that is accompanied by wheezing

and low-grade fever especially in this season (winter). Other elements which suggest the diagnosis are: there is no past history of admission due to similar presentation (which is excluding asthma) and there is no one smoking at home. The thing which I found interesting was the wheeze because it was very clear and can be heard both with and without using the stethoscope.

- Bronchiolitis is inflammation of bronchioles in infants who are less than two years of age due to a viral infection (most commonly RSV). It occurs more in males between November to April. Patients usually present with fever, cough tachypnea and wheezing. Chest X-ray shows hyperinflation with air trapping and patchy infiltrates. Diagnosis is made based on clinical features and viral antigen or antibody testing using a specimen obtained via nasopharyngeal aspirate.
- Management of bronchiolitis:
    - ✓ Primarily supportive (because it is a viral infection): and this includes hydration and oxygen as needed.
    - ✓ The use of nebulized bronchodilators is controversial.
    - ✓ Hospitalization is indicated for: respiratory distress, hypoxemia, apnea, dehydration or underlying cardio-pulmonary disease.

CASE – 5: Schinzel-Giedion syndrome

Summary: BO ZH is a female who was born on 23/11/2016 at 35 weeks of gestation – due to severe pre-eclampsia- through normal vaginal delivery. The baby was noticed to have specific dysmorphic features thus was admitted to NICU for further evaluation.

- **Demographic Data:**

Name	BO Z.H
Gender	Female
Nationality	Bahraini
Date of birth	23/11/2016
Date of admission	24/11/2016
Ward	309 (NICU)
Source of history	Chart and mother

- **Reason of Transfer:**
  - Baby was born with congenital anomalies (e.g. bilateral hydronephrosis, short nasal bridge and short femoral length) and was admitted for further evaluation.

- **History of Present Illness:**
  - **Mother's Data:**
    - ✓ The mother is a 29 years old Bahraini female who has been married for 1^{+4} years. she is gravid 1, para 1, living 1 and abortion 0. Her last menstrual period was on 19/03/2016 and her expected date of delivery was on 26/12/2016. She delivered at 35^{+} weeks of gestation. Her blood group is B+. She has a low-activity G6PD, HBsAg (-), rubella equivocal, VDRL non-reactive and HIV (-). The mother had severe pre-eclampsia during this pregnancy. There is no history of medications, smoking or alcohol consumption during pregnancy.
  - **Labour and Delivery:**
    - ✓ She went into labour at 35^{+} weeks of gestation. Delivery was normal vaginal and labour was induced in SMC because she had increased blood pressure with proteiuria (severe pre-eclampsia). She was given $MgSO_4$ and labetalol. Artificial rupture of membranes was done and

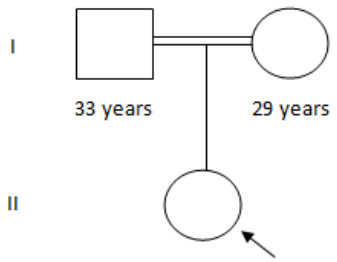
amniotic fluid was classified as grade-I meconium staining. The baby cried and gasped at birth and suction was done.

- **Baby Data:**
  - ✓ The baby is a female with a birth weight of 2.6 kg and a head circumference of 32 cm. APGAR scores were 9 and 10. Respiratory rate was 37, temperature was 36.8 and heart rate was > 100. Congenital anomalies were noticed (e.g. bilateral hydronephrosis, short nasal bridge and short femoral length). The baby was admitted to the NICU on the 2nd day for further evaluation.

- **Initial Exam:**
  - **APGAR**: 9 and 10
  - **Head Circumference**: 32 cm (size of the head is normal)
  - **Length**: 44 cm.
  - **Normal reflexes** (e.g. Moro, grasp, suckling and rooting reflexes).
  - **Anterior fontanel is soft and scalp is normal.**
  - **Eyes**: puffy.
  - **Ears**: low-set.
  - **Nose**: short nasal bridge.

- **Impression:**
  - Preterm, 35 weeks of gestation with dysmorphic features for further evaluation.

- **Family History and Pedigree:**



- There is a consanguinity between mother and father. Both of them are healthy with no medical illnesses or genetic diseases. This is their first child.

- **Psychosocial History:**
  - Parents live together in a house. Both of them are graduated from secondary high school. The father works in a bank and the mother works in a company. They have a good income. No one smokes or consumes alcohol. They have no pets.

- **Investigations:**

WBCs	8.7 x 10^9/L
RBCs	6.36 x 10^{12}/L
Hb	16.9 g/dL
Hct	52.7 %
MCV	89.2 fL
RDW	20.0 fL
Platelets	292 x 10^9/L
Neutrophils	44.9%
Lymphocytes	29.6%
Monocytes	19.3%
Eosinophils	4.6%
Reticulocytes	0.9
Urea	3.1 mmol/L
Creatinine	66 µmol/L
Na	132 mmol/L
Cl	106 mmol/L
Ca	1.67 mmol/L
HCO_3	15 mmol/L

Albumin	31 g/L
Bilirubin (total)	160 µmol/L
Bilirubin (direct)	23 µmol/L
Bilirubin (indirect)	137 µmol/L
ALP	382 U/L

- **Examination and Systemic Review:**
  - The baby is placed in an incubator. She is awake, conscious and moving. She is connected to an IV line, pulse oximetry and ECG leads. She is not pale or jaundiced. There is no cyanosis, no signs of dehydration or respiratory distress. The baby has dysmorphic features with puffy eyes, low-set ears, increased philtrum, micrognathia and bilateral lower limbs edema.
  - **Vital signs:**

Temperature	36.9 C
Blood pressure	Not available
Pulse	113 beats/minute
Respiratory rate	41 breaths/ minute
SPO_2	99%

  - **Head to toe examination:**
    - ✓ Head and neck: puffy eyes and low-set ears.
    - ✓ CNS: hypertonia with normal primitive reflexes.
    - ✓ Respiratory: normal air entry which equal on both sides with no added sounds.
    - ✓ CVS: normal heart sounds (S1 and S2) with no murmurs.
    - ✓ Abdomen: soft, no distention, bilateral abdominal mass is felt.
    - ✓ Genitourinary: normal.
    - ✓ Skin: normal.

- **Final diagnosis:**
  - The patient is diagnosed with Schinzel-Giedion syndrome.

- **Personal Reflection:**
  - This was a very interesting case as it is rare to see such a case with the findings mentioned above. When the doctor asked me to examine the neonate and describe all the dysmorphic features which I can find I couldn't reach the diagnosis. It was even difficult to come up with a differential diagnosis and I did not expect at all that this is a case of Schinzel-Giedion syndrome.
  - Children with Schinzel-Giedion syndrome can have a variety of distinctive features. In most affected individuals, the middle of the face looks as though it has been drawn inward (midface retraction). Other facial features include a large or bulging forehead; wide-set eyes (ocular hypertelorism); a short, upturned nose; and a wide mouth with a large tongue (macroglossia). Affected individuals can have other distinctive features, including larger than normal gaps between the bones of the skull in infants (fontanelles), a short neck, ear malformations, an inability to secrete tears (alacrima), and excessive hairiness (hypertrichosis). Hypertrichosis often disappears in infancy.
  - Children with Schinzel-Giedion syndrome have severe developmental delay. Other neurological problems can include severe feeding problems, seizures, or visual or hearing impairment.
  - Most children with Schinzel-Giedion syndrome have accumulation of urine in the kidneys (hydronephrosis), which can occur in one or both kidneys. Affected individuals can have genital abnormalities such as underdevelopment (hypoplasia) of the genitals. Affected boys may have the opening of the urethra on the underside of the penis (hypospadias).

- Children with this condition who survive past infancy have a higher than normal risk of developing certain types of tumors called neuroepithelial tumors.
- Schinzel-Giedion syndrome results from new mutations in the **SETBP1** gene and occurs in people with no history of the disorder in their family. One copy of the altered gene in each cell is sufficient to cause the disorder.