EMERGENCY NOTE

You are a 2nd year medical student on an Emergency Medicine elective. The next patient is Benjamin, a 7-year old boy, who is brought in by his mother. She says he has been coughing and seems like he is having a hard time breathing today.

On further history, you learn that Benjamin has had this cough for about a week. At first, it was associated with a runny nose, sore throat, and 'feeling plugged up.' He never had a fever, nausea, vomiting, or diarrhea. Now, the cough is the main complaint and does not seem to be improving. You ask Ben if he feels short of breath, and he nods. He denies chest pain. There has been no recent travel. His little sister began to have a sore throat and cough last week, but her symptoms are improving.

Benjamin's mom tells you that he was diagnosed with asthma about two years ago, and has a regular twice daily inhaler (Alvesco) and a blue one he uses only when needed (Ventolin). Benjamin's mom tells you that he has been using the blue puffer every few hours over the last week, and at night, which is much more than he usually does. His last asthma exacerbation was about 1 year ago, and he needed to take oral steroids at that time but was not admitted to hospital. He tends to get worsening asthma and itchy eyes, with pollen and dust, but otherwise has no allergies.

He has no other medical problems and has no medications apart from his inhalers. His sister also has a diagnosis of asthma. His mother smokes cigarettes at home, but no one in the home (including Ben!) uses drugs or alcohol. Ben's immunizations are up-to-date.

While you prepare to examine Ben, the nurse comes in to take an updated set of vitals. He tells you the temperature is 37.4, HR90, RR24, BP120/70, and Sat 95% on room air. Ben is awake and alert (GCS 15) and speaking in full sentences, but he is breathing heavily. On head and neck exam, you notice a red pharynx but no tonsillar swelling or exudate, normal tympanic membranes on otoscopy, and no cervical nodes. On cardiac exam, you hear a normal S1 and S2 on auscultation, with no murmurs. Listening to his chest, you notice diffuse wheezing on both inspiration and expiration, as well as decreased breath sounds at the lung bases. His abdomen is soft and nontender, and he does not have any rashes.

You suspect Ben is having an asthma exacerbation secondary to a viral upper respiratory tract infection. You review with your preceptor, Dr. Scott, who orders Ventolin 4 puffs q20min x 3, Atrovent 5 puffs q20min x 3, and one dose of prednisone 40mg PO. Following this treatment, you reassess Benjamin and he tells you that his breathing feels much better. Listening to his lungs, his wheeze is markedly improved and you hear air entry to the lung bases bilaterally.

You explain to Benjamin and his mother that he is having another asthma exacerbation, but does not have to be admitted to hospital at this time. Your preceptor provides a prescription for prednisone 50mg PO x 4 more days (to complete 5 days total). You instruct Ben to continue his Alvesco inhaler twice per day, and to use his blue inhaler 1-2 puffs every 4 hours as needed. You also counsel mom around smoking cessation, emphasizing that this likely will worsen both Ben and his sister's asthma, and refer her to Alberta Quits for more resources.

"How do I know if I should bring him back to a doctor?" Ben's mom asks. You reply that Ben should be reassessed in the Emergency Department if he is complaining that he is feeling very short of breath or appears to be struggling to breathe (and you review signs of respiratory distress with mom). Finally, you recommend that Ben be reassessed by his family doctor within a week, to ensure things settle.

PROGRESS NOTE

You are a 2nd year medical student on an MTU Internal Medicine elective. You are asked to take over following Mrs. Higgins, a 76-year-old woman admitted with diabetic foot ulcers that are complicated by osteomyelitis. You hear at handover that she lives alone and is a patchy historian. No one on your team has been able to get a hold of family members for collateral information about her. From Netcare, the team has learned that in addition to her Type 2 Diabetes, she has Stage 2 CKD, hypertension, and gout. The overnight resident says, "I didn't get any calls about her overnight."

You begin by reviewing her chart, taking note of any nursing issues, vitals from 0600 this morning (HR80, RR18, BP150/80, SpO2 94% on room air), and checking for any laboratory investigations (none for today). You don't notice anything alarming in the nurses' notes.

At 0900, you enter her room and introduce yourself. You quickly notice that Mrs. Higgins seems to be breathing quite quickly and you see some tracheal tugging. You raise the head of the bed, which seems to help somewhat, but she still looks like she is working to breathe. You ask Mrs. Higgins how long she's been breathing like this, and she says "I can't breathe in this hospital!" You aren't able to get any sensible history from her. Mrs. Higgins pushes your stethoscope away when you try to examine her. You call the nurse for help and ask for a new set of vitals. The new vitals are HR95, RR28, BP152/80, and SpO2 87%. The nurse starts supplemental oxygen by nasal prongs, while you page a resident on your team to help you out.

A few minutes later, Jack Crosby, the Jr. resident on your team arrives to help you out. He asks the nurse for a STAT portable CXR, ECG, and labs (CBC, lytes, Cr, troponin). As the nurse organizes the investigations, Jack and you conduct a more detailed physical exam. Mrs. Higgins is alert and breathing a bit more comfortably with the change in position and supplemental oxygen. She is able to tell you that she is in hospital but not the name of the hospital, and she is not oriented to date (year, month, or date). Her heart sounds seem normal to you. You try to see her JVP and think it is about 4 cm above the sternal angle. On respiratory exam, you notice subcostal and intercostal in-drawing, but the tracheal tugging has resolved. On auscultation, you hear air entry bilaterally, with coarse crackles at the bases of both lungs. Her abdominal exam is normal with no hepatosplenomegaly. When you look at her lower extremities, you note that she has bilateral lower leg dressings for her diabetic foot ulcers.

The technicians arrive to conduct the investigations. Reviewing the CXR with Jack, you note an enlarged cardiac silhouette, interstitial edema, and mild pleural effusions bilaterally. The EKG appears normal. Labs are pending.

Chatting with Jack, you agree that Mrs. Higgins appears to be in acute congestive heart failure. Together, you decide to turn off her IV fluids and continue supplemental oxygen to maintain her SpO2 above 94%. You two also decide to give her nitroglycerin 0.4mg sprays sublingually every 5 minutes for 3 doses to reduce her preload and afterload. The nitroglycerin doesn't drop her blood pressure too much, so you two decide it safe give captopril 6.25mg sublingually to further reduce afterload. In about 30 minutes, if the blood pressure still holds and the patient doesn't diurese, then you both agree to give her 40mg of IV furosemide. You two also decide to start her on a nitroglycerin patch. Jack tells you he has to run to see the rest of his patients before team rounds. "You're good to write the progress note?" he asks.

OR NOTE

You are a 2nd year medical student on your first call shift for your General Surgery elective. You see Alex, 14-year-old boy, who has presented to the Emergency with abdominal pain that started 12 hours ago. He says that the pain started in the middle of his belly, but in the last few hours has migrated down to the RLQ. The pain is associated with a temperature of 37.9 degrees, nausea, and vomiting. Despite his nausea, Alex tells you that he just finished eating a sandwich. You conduct a physical exam, which supports your provisional diagnosis of appendicitis. After reviewing with your staff, Dr. David, you order an ultrasound and the findings of the scan are consistent with appendicitis.

Your resident has seen many appendicitis cases, and so says you can scrub in and assist on the surgery! Even better, when you arrive in the OR to introduce yourself to the Anesthesiologist (Dr. House) and the nursing staff, Dr. House offers to let you intubate the patient. Hooray! You visualize the cords, and successfully intubate Alex with an endotracheal tube on your first try. Dr. House tells you he's going to keep the patient under general anesthesia for the operation.

You leave the OR to 'scrub'. Once the surgical team and patient are ready, Dr. David leads the 'lap appy' while you assist by guiding the laparoscope (camera). The surgeon quickly finds the appendix partially adhered to the posterior aspect of the cecum. The appendix appears moderately inflamed, but there is no evidence of perforation or abscess. He is able to remove the appendix within a few minutes. The appendix is then sent to the pathology laboratory for examination. Dr. David then proceeds to conclude the surgery. He asks you to close one of the surgical incisions—while you fumble to do so, he closes the other two.

Overall, the procedure is uncomplicated, with minimal blood loss, and no drains are placed. The patient starts to move beneath you, and you hear him start to gag on the endotracheal tube. Dr. House extubates him, and the nurses prepare to transfer the patient to the PACU (i.e. Recovery Room) for post-operative recovery. Dr. David's pager goes off—while he's dialing the phone to return his page, he turns to you and says, "Hey can you write the OR note?"

OBSGYNE NOTE

You are a 2nd year medical student on an OB/GYN elective with Dr. Heather. At the beginning of the shift, you take over care of Ms. Adelle, a 30-year G1P0[1] woman at 40 weeks' gestational age (i.e. full term) who is in active labour. She's had a long labour—she first started contracting over 24 hours ago!

When Dr. Heather and you come into the room to introduce yourselves, Ms. Adelle tells you that she's feeling the urge to push. Your preceptor confirms with a cervical examination—she is fully dilated and effaced, and can start to push! After about 2 hours of pushing, the baby begins crowning. With your preceptor's supervision, you start to deliver the baby. After delivering the head, you realize that the umbilical cord is wrapped two-times around the baby's neck (nuchal cord x 2). Dr. Heather helps you to release the cord. You then finish delivering a newborn baby girl. The nurse administers oxytocin 10U IM to Ms. Adelle, which is the standard protocol in your hospital.

The baby is crying, pink, and rigorous at the time of delivery, and requires no neonatal resuscitation. Her APGARs[2] are 9 and 9 (normal). Since baby is doing well, Dr. Heather immediately places her on mom's chest for skin-to-skin contact and allows for delayed cord clamping.

Meanwhile, you obtain cord gases and notice a gush of blood suggestive of placental separation. You begin delivering the placenta by applying gentle traction to the cord. After a few minutes, the placenta is delivered. Dr. Heather and you inspect the placenta and cord together, and confirm it is intact with a 3-vessel cord (i.e. normal).

You then return your attention to Ms. Adelle to inspect the perineum for tears. You find a 2nd degree perineal tear on the left, which Dr. Heather repairs with 3-O chromic (absorbable) sutures. Dr. Heather and you can't see any further tears, but Ms. Adelle continues to bleed!

Dr. Heather leads you through the post-partum hemorrhage protocol, starting with fundal massage. After proceeding through the protocol and DDx, Dr. Heather suspects that Ms. Adelle has uterine atony from her long labour; she starts an oxytocin drip about 20 minutes' post-partum. After a few minutes, Ms. Adelle's bleeding tapers off. In total, Ms. Adelle has lost about 750 cc of blood.

Meanwhile, the nurse weighs the baby and finds that she is 3720 grams. The rest of her newborn exam is normal. The nurse returns the baby girl to her mother, and you proudly congratulate her on the birth of her first child.

Dr. Heather tells you that there is another patient that she needs to see urgently, and asks, "You know how to write a delivery note, right?"

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[1] GnPn refer to gravidity and parity respectively. Gravidity is the number of times a female is or has been pregnant, while parity refers to the number of times a female has carried a pregnancy to a viable gestational age.

[2] The APGAR score is a method to quickly summarize the health of neonates. The neonate receives a score between 0-2 for each of Appearance (skin colour), Pulse, Grimace (reflex irritability), Activity, and Respiration, for a maximum score of 10. Scores 7 or above are typically considered normal.

PROCEDURE NOTE:

You are a 2nd year medical student on a Pediatrics elective with Dr. Maxwell. Anastasia, a 3-year-old girl, presents to the Alberta Children's Hospital with lethargy and high fever. On further history from her parents, you learn that she is not immunized. On exam, there was no obvious respiratory source of infection. After reviewing with your staff, you initiate a septic work-up. Her urine was clear. As part of the workup, Dr. Maxwell and you agree that Anastasia should have a lumbar puncture to investigate for meningitis.

Under supervision by Dr. Maxwell, you get the opportunity to perform the procedure! But first you need to discuss the procedure with Anastasia' mother, and obtain her consent. You explain to the mother that Anastasia's signs and symptoms make the team worry that she may have an infection in the membranes that surround her brain and spinal cord. You explain that an LP will help the Pediatric team to confirm or exclude the diagnosis, and outline the procedural technique to her. You also explain that an LP is a relatively safe procedure, but complications can occur even when standard precautions and good technique are used. These complications may include a post-dural puncture headache, infection, bleeding, cerebral herniation, and minor neurologic symptoms. Her mother agrees to the procedure and signs the written consent form.

While you're finishing this conversation, an astute nurse applies a topical anesthetic (e.g. EMLA cream) to Anastasia's lower back. The nurse and Dr. Maxwell assist you in positioning Anastasia in a lateral decubitus position. The nurse then helps to hold Anastasia still during the procedure.

Once Anastasia is in position, you prepare to complete the LP under sterile technique. You use chlorhexidine swabs to prep her lower back, and then drape the procedural area with sterile drapes. Using her posterior iliac crests to orient yourself, you identify her L4 spinous process and the interspace distal to this level. You infiltrate 1 cc of 2% Lidocaine without epinephrine subcutaneously with a fine needle to provide local anesthesia. Next, you introduce the spinal needle, slowly advancing the tip of the needle towards the patient's umbilicus. You're waiting to feel the characteristic "pop" indicating entrance into the subarachnoid space that you've read about. You think you're in. Withdrawing the stylet, you see clear CSF flow[3]! You are able to collect 1cc of CSF into the first two tubes and 0.5cc of CSF into the last two tubes. When collection is finished, you replace the stylet and remove the needle from Anastasia's back. You apply some firm pressure to the site, and then a dressing to the puncture site.

After ensuring all of your sharps are safely disposed of, Dr. Maxwell and you meet Anastasia's mother in the hallway to tell her that the procedure went smoothly. The next step will be to admit Anastasia to the General Pediatrics ward for further work-up and management. Anastasia's mother has some remaining questions for Dr. Maxwell. He turns to you, "Can you write a procedure note while we chat?"

[3] Note that for a Procedure Note for an LP, you should include a description of the cerebrospinal fluid (e.g. clear, yellow, bloody from a traumatic LP, etc.) and document how much CSF you collect.