Fantasy voyage from femoral vein to right lobe of the lung

Literature

HS 130 Unit 4 Assignment Fantasy Voyage and Battle of the Lung Hello everyone and welcome aboard! I am S Y. with VoyageHealth. Today, we will embark together in my mini-sub and we shall travel through the body of this young lady named Lola. In this journey we will enter her body through the femoral vein and travel all the way to her lung. Alert! Alert! An alert just came and we are in for a surprise. Bacteria have invaded Lola's lower lobe of her right lung and we shall report the invasion and document all we see. Let's proceed.

We are being injected into the femoral vein close to the groin area. The femoral vein runs parallel with the femoral artery through the upper thigh and pelvic region of the body. (Yahoo Health, 2013) Being one of the larger veins in the body, the femoral vein returns blood into the leg to the heart through the iliac vein. Before we get to the iliac vein, we pass through the inguinal ligament that forms a band going from anterior superior iliac spine to the pubis ligament. The role of the inguinal ligament is to protect the tissue movement between the trunk and the lower extremities. Yahoo Health, 2013) From the inguinal ligament, going north, we see the external iliac vein which is a continuation of the femoral vein just above the inguinal ligament. Starting at the groin area, the external iliac vein goes along the pelvic area. When it intersects with the internal iliac vein , we will navigate East into the common iliac vein that functions to drain the perineal regions. The iliac veins are joined together to form inferior vena cava. The inferior vena cava, also know as posterior vena cava, is a vein that carries deoxygenated blood from the lower body to the heart. (Yahoo Health, 2013).

It runs behind the abdominal cavity and alongside the right vertebrae column of the spine and it carries blood from the lower body to the heart. (Yahoo Health, 2013) From here we can already see the heart. Isn't it fantastic? We are so close to the pump that keeps the human body alive. Once we enter it, we will experience first hand the intricate operation of this marvelous mechanism. Next stop. Right atrium. One of the four chambers of the heart, the right atrium lets deoxygenated blood to pass through the tricuspid valve into the right ventricle and from there to the lung to oxygenate.

The tricuspid valve, also known as right atrioventricular valve is located between the two chambers and it looks like flaps that blocks blood flowing back into the atrium. (Yahoo Health, 2013) The right ventricle of the heart has the mission to pump the blood into the pulmonary artery via the pulmonary valve and pulmonary trunk right into the lungs. Ready to go through the pulmonary valve into the pulmonary artery? Here we go! Weeeee….. We are steps away from the most magnificent oxygen factory you have ever seen. Short and wide, the pulmonary artery begins at the base of the right ventricle and with a considerable size of 1. inches in diameter and 2. 0 inches in length. Interesting fact: the pulmonary artery is one of the only arteries that carry deoxygenated blood. The other artery is the umbilical artery in the fetus. This is just something I remembered from an Anatomy class I used to take in college. The main pulmonary artery extends from the right ventricle of the heart and branches into left and right pulmonary arteries. The left and right pulmonary arteries extend to the left

lung and right lungs. (Bailey, Regina 2013) Now just relax and sit back. Enjoy the ride to the lung!

Going through the Finally, as promised, welcome the most amazing oxygen factory of the human body! The lung. Divided in two, the lung has 5 chambers, 3 on the right side and 2 on the left side. In the right side of the lung, we see the right superior lobe or the apex located right under the collarbone. The right middle lobe right below and what would be the name of the 3rd chamber? Right, the right inferior or lower lobe, also called the base can anyone guesses why? Because it is broad and it rest on the diaphragm right around the 7th rib. Thibodeau, GA & Patton, KT, 2008) Our earlier alert lets us know that nasty bacteria have affected the right lower lobe of the lung. We need to watch carefully what is happening and record everything. The body gives an alarm each time something foreign enters it and tries to fight it. Alarm system? Yes. The immune system is our alarm system. The 2 types of immunity are specific and non-specific. The non-specific immunity, also called innate immunity confers general protection from any irritant or abnormal substance that threatens the internalenvironment. Thibodeau, GA & Patton, KT, 2008) For example, the skin and the mucus membrane are non-specific barriers to prevent bacterium from entering the body. A non-specific response is inflammatory response and it is most common immune response. Specific immunity, as the name says, provides specific protection against certain types of invading bacteria or toxic materials. (Thibodeau, GA & Patton, KT, 2008) Also called adaptive immunity, specific immunity may be classified as “ natural” or “ artificial”. Natural immunity is non-deliberate exposure to disease agents and it can be active or passive.

An example of passive natural immunity is the immunity given to the fetus by the mother. Artificial immunity is deliberate exposure to disease agents and one example is vaccine for polio. Afterwards, the person who has received the vaccine will have active artificial immunity. In Lola's case, her non-specific immunity kicked in when the bacteria invaded the lung. The white blood cells, monocytes and macrophages are in action These are natural killer cells that fight inflammation. Most likely, Lola will develop fever and the neutrophils are first to come in during inflammatory process.

After the body starts to recover and the fever subdues, the lymphocytes will activate and create antibodies. That means that Lola will have specific immunity once this event is registered into the memory cells. Seems that Lola will be on her way to recovery soon and we documented the Battle of the Lung. Shall we continue our journey? The pathway out is through the nose and even though it might seem gross, we will see some very interesting things on the way out. Let's proceed! Seat belts on, please! We are passing through the alveolar membrane into the alveoli. Can you see the structure?

They look like grapes and they are as many as 10 times larger than the entire surface area of the body. Together, the alveoli can cover 100 square meters. (Thibodeau, GA & Patton, KT, 2008) Leaving the grape shaped alveoli behind we move to the bronchioles and then into the bronchi straight into the trachea. The trachea is like the trunk of a tree upside down holding on each side the lungs and it is formed of 15-20 C-shaped rings of cartilage that protect the windpipe. It extends from the bronchi all the way up to the larynx in the neck over a length of approx. 4. 5 inches.

From there, we move to the nasopharinx passing right behind the vocal cords, palatine tonsil, and lingual tonsil. Watch out! The uvula! Phew, that was a close one..... We are in the nasopharinx now and we can already see the light at the end of the tunnel. I mean, at the end of the nose. We can see the frontal, maxillary, sphenoidal and ethmoidal sinuses that help draining of the nose. Floating through the nasal septum into the external nostrils, we are at our final destination. Let's stop for a moment and take a deep breath. We got to admit the human body is quit fantastic.

I hope you have enjoyed this journey as much as I did. And hopefully, Lola will recover from that bacterium soon. Thank you for your spirit of adventure. This is S Y. with Voyage Health. References Yahoo Health, Femoral Vein (2013). Retrieved from http://health. yahoo. net/human-body-maps/femoral-vein Yahoo Health, Inguinal Ligament (2013). Retrieved from http://health. yahoo. net/human-body-maps/inguinal-ligament Yahoo Health, Inferior Vena Cava (2013), Retrieved from http://health. yahoo. net/human-body-maps/inferior-vena-cava Yahoo Health, Triscupid Valve(2013), Retrieved from ttp://health. yahoo. net/human-body-maps/tricuspid-valve Bailey Regina (2013), Pulmonary Artery, about. com guide. Article retrieved from http://biology. about. com/od/anatomy/ss/pulmonary_artery. htm Thibodeau, G. A. & Patton, K. T. (2008)Structure and Function of the Body, Chapter 14, The Respiratory System, 13th Edition, St. Louis, MO; Mosby Elsevier, Thibodeau, G. A. & Patton, K. T. (2008)Structure and Function of the Body, Chapter 13, The Immune System, 13th Edition, St. Louis, MO; Mosby Elsevier.