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by Far Down

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Question 1.

In the first case, the arrow penetrated the cavity called the pleural cavity found between the 7th and 8th ribs. This cavity covers the outer part of the lungs and serves to give a lining to the chest cavity (Karpathiou et al., 2020).

This is a thin membrane which together with other membranes helps in covering the walls of most organs found in the abdominopelvic and thoracic cavities. The membrane is full of tissues called connective tissues which are formed by squamous epithelium. The serous membrane connects with the pleura to form the pulmonary ligaments. The purpose of this membrane is to help the lungs to breathe.

Question 2

This nervous system freely coordinates the body by helping in the functioning of the other parts. These include the heart muscles, the smooth muscles as well as glands. This system is comprised of ² two divisions; the sympathetic and parasympathetic nervous systems. While the sympathetic nervous system quickens the rate of the heart by raising the blood vessels, the parasympathetic system slows the rate of the heart as well as increases the productivity of the gland and intestines. Additionally, the afferent and efferent nervous systems that are based in the autonomic aids in the connection of the central nervous system with some other organs used for sense from various systems. For example, the arrow that penetrated the 7th and the 8th ribs may have affected the axon and visceral motor which is located in the central nervous system. Through this penetration, the internal organs and the brain can be harmed because of the connection of the spinal nerves with the central nervous system. Consequently, vital signs may be experienced from the effect through ⁴ an increase in blood pressure and the rate of pumping by

the heart. For this reason, an attack by the arrow or any injury may lead to the weakening of the pulse. The arrow may have caused a shortened pattern of breathing. PNS serves to moderate blood pressure, stress reactions as well as drop in temperature as the blood is pushed to different organs. The role of the autonomic nervous system is to ensure that there is balance in temperature in the internal environment of the body.

Question 3

The arrow is posterosuperior on the axial plane. The arrow is directed from the front to the back. This means that the organs that are affected are the front skin to the back skin. The trajectory of the first arrow through the 7th and the 8th through to the endothoracic fascia make the body transverse thereby making it penetrate to the heart and lungs.

The first arrow may have affected the vital organs such as the lungs and the heart. Some other contents affected include nerve, spinal accessory as well as supraclavicular lymphatic nodes. Some other organs like the spleen, the liver, and the kidney which are located at the superior are under protection by a thoracic cage. It is however possible for some part of the spleen and the diaphragm to be affected. The membrane that is therefore affected the most is the serous membrane as a result of interference of the arrow between the lungs and the heart (Miller et al., 2017).

This system is comprised of the organs and the tissues. It serves three main functions; transportation of oxygen, nutrients as well as hormones in the body, and also removal of the metabolic wastes. There is the interconnection of vessels that helps in the operations of the body. The functioning of the cardiovascular system is better enhanced by the pulmonary system that aids in the circulation of the blood between the lungs and the heart. For this reason, where the

pulmonary system is affected, breathing is also affected as a result of the path between the lungs and the heart being affected. Therefore, the effect on the system results in the stoppage of breathing as a result of the failure of the blood to be oxygenated. The failure of both systems to function leads to irregular breathing (Ziemssen & Siepmann, 2019).

The levels of Hematocrit increase more than enough. This causes thickening of the blood thereby making it hard for the pumping of the blood by the heart. This may lead to a heart attack. Moreover, the loss of blood will lead to the person being anemic. Failure of the blood to flow will lead to the patient losing his life as a result of a fall in the level of hemoglobin.

The effects of the second arrow may be cord transection and hemorrhage. The reaction of the body after an injury is through pain. This is activated by the neuromuscular system. As a result of pain, the patient suffers high risks of respiratory failure the second arrow leads to the damage of the cranial through which the patient is unable to raise the hand above the head. Where the neck muscles are severely damaged, the patient may end up being paralyzed on the face. Neuromuscular is the junction where neuron signals coming from the brain interact with the skeletal muscles. It serves to enable the body to produce as well as control the movement (Aittaleb et al., 2017)

These components form under synapses of two chemicals that are contracted between muscle fiber and a motor neuron. The components of the neuromuscular junction include the synaptic cleft, the synaptic knob as well as the motor endplate. In this junction, communication between the nervous system and the motor neurons takes place

Question 6

According to Murota et al., the following is a description of the tissues found in the tracheal slide;

- i) Subcutaneous layer- this layer is a thin one and comprises connective tissue. This forms part of the lining that is mostly called the mucous membrane. The connective tissues support the tissue and make it elastic and strong
- ii) Mucosa- this layer is found in the trachea and comprises goblet cells and columnar epithelium. This tissue primarily serves is protection, filtration as well as absorption.
- iii) Hyaline Cartilage- the matrix of hyaline cartilage is translucent and comprises permanent fibers. The tissue helps in the reduction of friction as well as support, the tissue gets support from the trachea.

Where injuries are experienced, two bronchi areas are likely to be affected. The damage of the tracheal results in shortness of breath thereby resulting to cough with blood and reduced levels of hemoglobin. For example, penetrating an object to the mucosa leads to bleeding that affects the level of hemoglobin in the body. The injury by the first arrow leads to the blockage of the airway leading to death as a result of the discontinuous flow of air. The second arrow leads to the damage of tracheal parts (Guarino et al., 2017).

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