

Types of blood cells and process of homeostasis leading to clot formation

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Human Anatomy Describe the three major types of cells found in blood and their respective functions. Blood is that fluid component of the body that transports nutrients and oxygen to all the parts of the body while removing the waste products formed by these parts. The major types of cells found in blood are the red blood cells, the white blood cells, and platelets (Marvin, 2005). Each of these cells has a specific function that it undertakes in order to fulfill the above-mentioned functionality of blood. The red blood cells perform the function of transporting oxygen. They are composed of hemoglobin, which is a protein that binds oxygen that is transported through the vessels to other parts of the body. These protein substances give the cells, and consequently blood its red pigmentation color. These cells are well adapted to their functionality (Davies, 2006). They are very tiny, a characteristic that allows them to squeeze through the thin blood vessels. Another of their functional adaptation is their lack of nucleus, a feature that helps them reserve more room for hemoglobin. The other major cells found in blood are the white blood cells. These cells are of various types, but their primary function is to give the body an immune system against infections and heal the infected or damaged body tissues.

Different types of white blood cells are specialized to fight and destroy particular types of infectious microorganisms. These cells squeeze out of the vessels and go to the infected regions to heal them. Any shortage of these cells means a poor immune system and frequent infections. Platelets, the other cells found in blood that help the blood to clot (Davies, 2006). They keep circulating in blood, until when they meet a damaged vessel, in which case they stick together and form a blood clot that seals the hole. However,

an excess of these cells in blood are harmful since they can clot the blood and hinder circulation.

2. Identify the process of homeostasis and the cascading events that lead to clot formation.

Homeostasis is defined to mean the whole process of blood clotting and the consequent healing of the damaged body tissues (Douglas, 1996). When a body organ or tissue is injured, platelets, the clotting agents flock into that area, they then are activated by a substance called thrombin to form a clot. The process of clot formation is as follows: when any body tissue is injured, blood is released from the damaged vessels. The released blood encounters the other protein tissue, referred as collagen. This protein activates the platelets that release a number of proteins and substances that cause other cells to grow and subdivide quickly, to increase infection immunity (Douglas, 1996). Platelets also release stirring elements that causes the platelet cells to start colliding with each other. This corrosion causes the sticky protein substance (glycoprotein) in their membranes to be released, causing them to stick together.

It is this sticking together of many platelet cells that forms a mass of clot, that prevents any more blood from flowing out (Marvin, 2005). The platelets are comprised of fibrous proteins that intertwine to form a mesh of a mesh of plug that is called clot, over the damaged tissues. After the clot is formed preventing blood from oozing out, then a connective fibrous tissue starts growing, from the basement of the wound. This tissue, called the granulation tissue eventually replaces the clot formed earlier. This tissue eventually paves way for collagen, the normal protein tissue to grow and cover the

wounded area. This collagen then normalizes the affected area with the rest of the body parts (Davies, 2006).

Works cited

Davies, T. (2006). How wounds heal: the homeostatic process and clot formation. Black pool:

Fylde College.

Douglas, P. (1996). The tissue regeneration and wound healing process.

Harvard: Harvard

Medical School.

Marvin, R. (2005). Tissue repair and wound healing process. Sydney:

Butterworth.