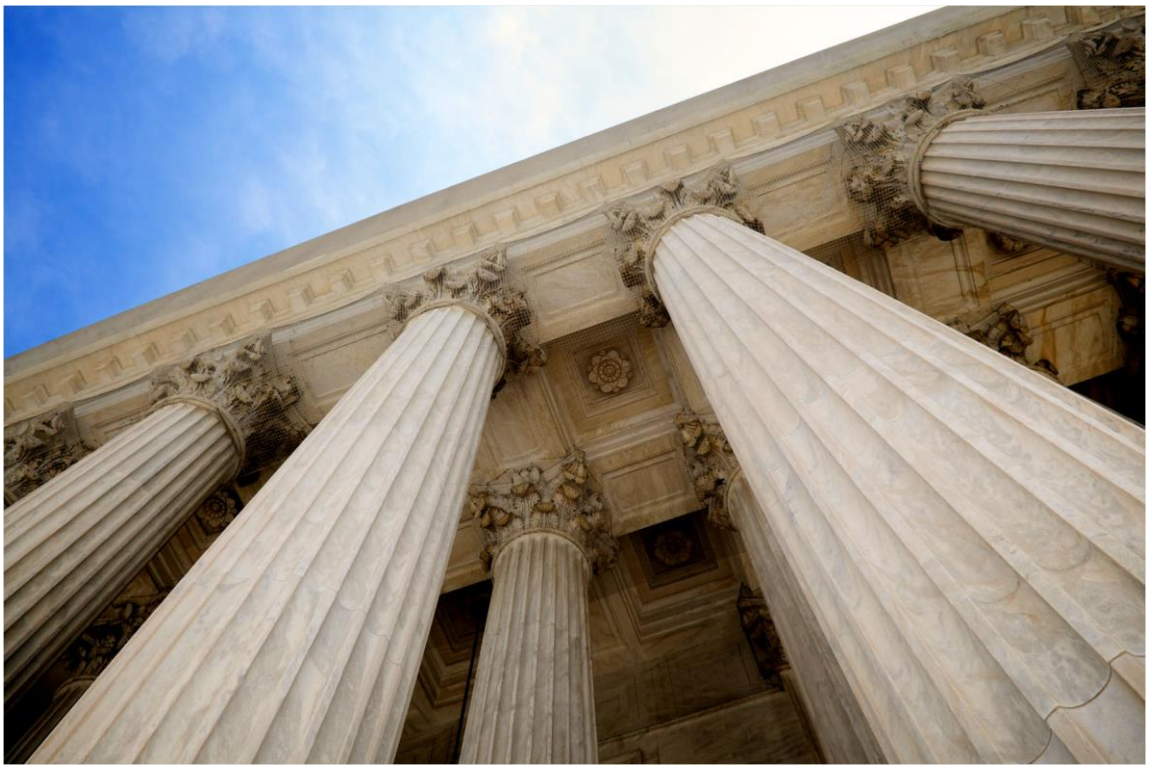

Report Title

REPORT SUBTITLE

Name | Course Title | Date

Scenario

1.1 Mr. T is admitted to an emergency room following motor vehicle accident and sustained head injuries, Doctor suspect internal bleeding.

1.1.1 Describe how the body as a non-specific defense mechanism responds to tissues injuries.

The inflammatory response is a non-specific response that is triggered whenever the body tissues are injured.

e.g. It occurs in response to physical trauma, intense heat and irritating chemicals as well as to infections by viruses and bacteria acute inflammation which are redness, heat swelling and pain.

- The inflammatory process begins with a chemical alarm, when cells are injured they release inflammatory chemical including histamine and kinins that causes blood vessels in the involved area to dilate and capillaries to become leaky. They activate pain receptors and attracts phagocytes and white blood cell to the area. Dilation of the blood vessels increases the blood flow to the area accounting for the redness and heat observed. Increased permeability of the capillaries allows plasma to leak from the blood into the tissue spaces, causing local edema that also activate pain receptors in the area.

  When the skin is injured, our body sets motion as automatic series of events, often referred to as the cascade of healing in order of healing is divided into four overlapping plates which are hemostasis, inflammatory, proliferative and maturation.
  On initial injury the protective membrane around some of the cells may break open, leading to the death of those cells, other cells may be physically compromised, but less severely. Injury may also lead to disruption of blood supply to the tissue, which can cause depletion oxygen to certain cells, affected cells may not be able to produce enough ADENOSINE TRIPHOSPHATE (ATP), which is the energy the body needs to recover. The process of healing begins almost immediately after the injury occurs and is categorized by three phases which are homeostasis, reparative phase and maturation phase.

Healing or Repair process

During the first phase, the body initiates process to form blood clots in the injured area and begin acute inflammation, after injury to a blood vessels, the body releases chemical near the site of the injury that trigger an immediate tightening

of the vessels via process called vasoconstriction, chemicals also trigger blood platelets to adhere to exposed part of the tissue in order to create plug. Then through a series of transformation triggered by enzymes, blood coagulation.

factors are activated and this promotes the formation of protein fibers that further the dot.

This inflammatory period in the healing process can last several days. During this time, white blood cells are attracted to the area through chemical signals such as leukotrienes. Fluid from blood vessels leaks into the surrounding tissues triggers the characteristics signs of acute inflammation and injury redness, swelling and warmth.
Local nerve cells are also triggered during this process and work to send pain signals to the spinal cord and brain. Depending on the injury, immune cells may be triggered, leading to other symptom such as fever. As the end of the inflammatory period cells known as monocytes arrive and work to clean up the dead cells and any other foreign matter at the site of injury.

Rebuild and Repair

- Platelets in the blood also release chemicals that help initiate the longer term processes of healing that occur during reparative phase.

These chemicals attracts cell begin the process of rebuilding by producing the cells that make up the extra cellular barrier, as well as large amounts of collagea that make up scar tissue

Life cycle of red blood cells

1.2 Life cycle. Human red blood cells are moduced through a process named erythropoiesis; developing from committed stem cells red mature red blood cells in about 7 day. When matured, in a healthy individual these cells liv in blood circulation for about 100 to 120 days (and 80 to 90 days in a full term infant).

1. Red blood cell formation (erythropoiesis) initially occurs in the yolk SAC; liver and spleen. After birth these cells are produced almost exclusively by tissue linning the space in bones, filled with red bone marrow. They circulate in the blood stream for about 120 days. Rate of red blood cell production is comptroller by erythropoietin.

2. Macrophages phagocytize and break old old/damaged red cells mainly in liver and spleen.

3. Hepatocytes break down hemoglobin into their four component polypeptide globin chains, each surrounding a heme group.

4. The heme is further decomposes into iron and a greenish pigment call billiard.

5. The blood transports the iron; combined with a protein, to the hematopoietic tissue in red bone marrow to be reused in synthesizing new hemoglobin.

6. Biliverdine is converted to an orange pigment called bilirubin.

7. bilirubin and bilirubin are secreted in the die as bile pigment and bile is secreted in small intestine; it then carried to the red bone marrow where red blood cell take it up through receptor –mediated endocytosis for use in the hemoglobin synthesis.

8. These red blood cells for them to be produced it is by the process called erythropoiesis; this process take place in the red bone marrow.

9. The removal of iron from the heme cusses the non-iron portion of the heme to be converted to bilirubin, a green pigment, and then into bilirubin.

10. After converting it bilirubin, A yellow –orange pigment bilirubin enter the blood and is transported to the liver.

11. Bilirubin is stored in the liver it is released into the small intestine and large intestine by liver.

12. When bilirubin enters the small intestines and large intestines, bageria found in the small intestine and large intestine convert bilirubin into urobilinogen.

13. As they are converted into urobilinogen it will be absorbed back into the blood but not all of them; the other will be converted to yellow pigment called urobilinogen and excreted in urine.

1.3 What is a female reproductive system?

A female reproduction system is a system in a female body which is responsible for primary sex organs which are also called gonads (ovaries).The gonads produces sex cells or garments and secretes sex hormones .The remaining reproductive system structures are accessory reproductive organs

The sex hormones play vital roles both in the development and function of the organs and in sexual behavior and drives. These hormones also influence the growth and development of many other organs and tissues of the body.

The reproductive cycle

It is a series of events occurring regularly in females 26-30 days throughout the child bearing period of about 36 years .the cycle consist of a series of changes taking place concurrently in the ovaries and uterine walls .Stimulated by changes in blood concentration of hormones. Hormones secreted during the cycle are regulated by a negative feedback mechanism. The hypothalamus secretes luteinizing hormone .The luteinizing hormone releasing The luteinizing hormone releasing hormone which stimulates the pituitary gland to secrete follicle stimulating hormone which promotes the maturing of ovarian follicles and the secretion of oestrogen leading to ovulation .follicle stimulating hormone is therefore predominantly active in the first half of the cycle it secretion is suppressed once ovulation takes place to prevent other follicles maturing during the current cycle .

- Luteinizing hormone which triggers ovulation stimulates the development of the corpus luteum. And the secretion of progesterone.

The hypothalamus responds to changes in the blood levels of oestrogen alone (as it happens on the first half of the cycle .The average length of the cycle is about 28 days .By convention the days of the cycle are numbered from the beginning of the menstrual cycle which lasts about 4 days .This is followed by proliferative phase (about 10 days).then the secretory phase 14 days .

Menstrual phase

When the ovum is not fertilized .the corpus luteum starts to degenerate.in the event of pregnancy .the corpus luteum is supported by human chorionic gonadrophin secreted by the developing embryo. Progesterone and oestrogen levels therefore falls and the functional layer of the endometrium, which is dependent on high levels these ovarian hormones is shed in menstruation .The menstrual flow is consist of the secretions from endometrial glands, endometrial cells from the from the generating capillaries and the unfertilized ovum. High circulating levels of ovarian progesterone and oestrogen inhibit the anterior pituitary gland, blocking the release of follicle stimulating hormone and luteinizing hormone, and should pregnancy occur then the rising oestrogen and progesterone levels

therefore prevent the maturing and releasing of another ovum. After degeneration of the corpus luteum, however falling levels of oestrogen and progesterone lead to resumed anterior pituitary activity, rising follicle stimulating hormones levels and the initiation of the next cycle.

Proliferative phase

At this stage an ovarian follicle stimulated by stimulating follicle hormone is growing towards maturing and is producing oestrogen, which stimulates the proliferation of the functional layer of the endometrium in preparation of the fertilized ovum. The endometrium thickness, becoming very vascular and rich in mucus –secretions glands .rising levels of oestrogen are responsible for triggering a surge of a luteinizing hormone approximately mid –cycle. This luteinizing hormone surge triggers ovulation, making the end of the proliferating phase

Secretory phase

After ovulation luteinizing hormone from the anterior pituitary stimulates development of the corpus luteum from the raptured follicle which produces progesterone and some oestrogen under the influence of the endometrium becomes edematous and the secretory glands produces increased amounts of watery mucus .This is believed to assists the passage of the mucus .This is believed to assist the passage of the spermatozoa through the uterus to the uterine tubes where the ovum is usually fertilized. There is a similar increase in the secretion of watery mucus by the glands that lunate the vagina. The ovum may survive in a fertilizable form for a very short time after ovulation, probably as little as 8 hours. The spermatozoa deposited in the vagina during intercourse may be capable of they can survive for several days, this means that the period in each cycle during which fertilization can occur is relatively short. Observable changes in the women's body occur around the time of ovulation. Cervical mucus normally thick and dry, becomes thin, elastic and watery, and the body temperature rises by a small but measurable amount immediately following ovulation. Some women experience abdominal discomfort in the middle of the cycle , through to correspond to rupture of the follicle and release of its contents into the abdominal cavity.

If the ovum is not fertilized, the corpus luteum degenerates and dies, menstruation occurs and a new cycle begins.

If the ovum if fertilized there is no breakdown of the endometrium and no menstruation. The fertilized ovum (Zygote) travels through the uterine tube to the uterus where it becomes embedded in the wall and produces human chorionic gonadotrophin (hCG), which is similar to anterior pituitary luteinizing hormone. This hormone keeps the corpus luteum intact , enabling it to continue secreting progesterone and oestrogen for the first 3 to 4 months of pregnancy, inhibiting the maturation of further ovarian follicles. During that time the placenta develops and produces oestrogen, progesterone and gonadotrophins.