Past Papers

بسم الله الرحمن الرحيم

DOPAMINE SCIENTIFIC TEAM

بحران

FINAL – Lecture 1 to 3 (Repair)

pathology

﴿ وَإِن تَتَوَلَّوْا يَسْتَبْدِلْ قَوْمًا غَيْرَكُمْ ثُمَّ لَا يَكُونُوا أَمْثَالَكُم ﴾

اللهم استعملنا ولا تستبدلنا

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First we will start with (55) past Qs
Then, (11) Book's Qs
and finally, (0) test bank Qs

(all Qs will be by default past unless it is written to be test bank)

Q1 : Which of the following factors induces Notch signaling and sprouting?

a. VEGF

b. TGF-β

c. TNF

d. IL-1

e. A and B

Answer : E

Q2 : What is true about TGF-β?

a. An important fibrogenic factor

b. Responsible for sprouting

c. Has no role in repairing

d. Produced by neutrophils only

e. A and B

Answer : E

Q3 : Which of the following is found in mature scars?

a. Granulation tissue
b. Cross-linked collagen 1
c. A lot of thin-walled capillaries
d. Collagen type III only
e. Collagen type II only

Answer : b

Q4 : Which of the following mediates fibrogenesis and ECM deposition?

a. TNF

b. IF-γ

c. TGF-β

d. Nitric oxide

e. a + c

Answer : C

Q5 : The following picture represents

a. Keloid scar
b. Arterial ulcer
c. Hypertrophic scar
d. Diabetic ulcer
e. None of the above

Answer : a

Q6: Which one of the following is considered a stable tissue?

a- skeletal muscle

b- liver.

c- skin

d- Cardiac muscle

e- bone marrow

Answer : b

Q7: Healing by secondary intention -compared with healing by primary intention- :

a- has more scar and more tissue injury

b- always associated with tissue granuloma

c- has a very small amount of tissue lost

d- has maintained function of the repaired tissue

e- A and B

Answer: A

Q8: One of the following sentences is correct:

a- Tissues with better blood supply heal more slowly.

b- Healing process is affected by one factor only

c- Taking steroid drugs will delay repair

d- The presence of foreign bodies enhances repair process

e- Site of injury has no effect on repair process

Answer : c

Q9: This image represents:

a. Inflamed leg with dilated blood vessels

b. Non-healing gangrene with fungal infection

c. Wound dehiscence

d. Diabetic ulcer

e. Venous leg ulcer

Answer : d

Q10: Which of the following statements best describes repair in the gastrointestinal mucosa?

a. Mediators are released, and tissue is replaced by immature scar formation
b. Stable tissue regeneration
c. Mucosa is a permanent tissue incapable of regeneration
d. Granulation tissue will be stimulated to mature to collagen type I
e. Regeneration is quick and continuously active to replace lost tissue

Answer :e

Q11 : Which one of the following mediators is a strong fibrogenic and scar-forming factor?

a. Prostaglandin E1
b. Histamine
c. Transforming growth factor beta (TGF-β)
d. Interleukin 17
e. VEGFs

Answer : c

Q12 : Which one of the following factors will significantly delay healing of a surgical wound?

a. Ingestion of oral antibiotics as prophylaxis
b. A patient with severe atherosclerosis
c. Taking oral painkillers for pain control
d. Early postoperative immobilization
e. A patient with prior cholecystectomy

Answer: b
Repeated question

Q13 : The major function of vascular endothelial growth factor (VEGF) in the early phase of repair is:

a. Fibroblast recruitment and proliferation
b. Angiogenesis, sprouting, and Notch signaling
C. Platelet aggregation
d. Fibroblast activation
e. Basement membrane degradation

Answer :b

Q14 : In which of the following scenarios would the risk for post-operative wound dehiscence be high?

a. Transabdominal open colon cancer resection in a 65-year-old male patient who is obese and a chronic smoker
b. We don't see this complication anymore with modern medicine
c. Tooth root canal surgery for a 75-year-old obese male patient
d. Valvular heart replacement surgery requiring open thoracotomy in a 59-year-old female patient who is a heavy chronic smoker
e. Laparoscopic cholecystectomy for a 63-year-old male patient with morbid obesity and chronic smoking history

Answer: a

Q15: Activation of fibroblast and deposition of matrix and repair is mainly mediated by:

a. Vascular endothelial growth factor (VEGF)
b. Prostaglandin E4
c. Transforming growth factor beta (TGF-β)
d. Leukotriene B4
e. Interleukin 17

Answer :c

Q16 : Microscopic examination of granulation tissue and early immature scar formation will show

a. Numerous young capillaries and heavy mixed inflammation cell infiltrate

B Complete re-epithelialization of the surface

C. Heavy eosinophilic and mast cell infiltrate

d. Abundant cross-linked collagen type I fibers and numerous foreign-body type giant cells (granulomas)

Answer: a

Q17: Bed "pressure" sores are best described as:

a. Diabetic foot ulceration with super-added infection
b. Serous-type inflammation with complicating infection
c. Avoidable ulcer due to bad nursing home care
d. Stress ulcer from severe chronic diseases
e. Mild superficial ulcers that are easy to heal

Answer :c

Q18: In contrast to repair after acute inflammation, repair after chronic inflammation is characterized by:

a. Lesser activity of vascular endothelial growth factor

b. Lesser amount of collagen type I

C. More granulation tissue and scar formation

D. Quick and simple with no need for mediators

e. Better repair process with no sequelae

Answer: c

Q19: The final stages of repair remodeling are characterized by:

a. Formation of platelet plug

b. Increased angiogenesis

c. Degradation of collagen by matrix metalloproteinase

d. Oxidative burst by inflammatory cells

e. Switching type I collagen to type III

Answer :c

Q20 : This finding is best described as:

a. Abnormal excessive repair and scar formation
b. A side effect of using certain types of surgical sutures
c. Occurs in patients with pre-existing atherosclerosis
d. Wound dehiscence
e. An ulcer

Answer :a

Q21 : Which of the following is related to this finding?

a. Severe ischemia due to atherosclerosis
b. Friction burn of skin and subcutaneous tissue
c. Radiation injury for squamous cell carcinoma of the legs
d. Traumatic serous inflammation of the skin and subcutaneous tissue
e. Varicose veins of lower limbs

Answer: a

Q22 :After cutting your hand with a knife, the wound gets smaller spontaneously. Which of the following mechanisms contributed to this resolution?

a. Dilation of blood vessels
b. Contraction of myofibroblasts
c. Release of prostaglandins
d. M1 macrophages
e. Angiogenisis

Answer :b

Q23: All of the following have minimal replicative activity in their normal state except:

a. Liver
b. Pancreas
c. Skin
d. Kidney
e. a+b+d

Answer : c

Except يا أهرام

Q24: What is the most common cytokine involved in fibrosis associated with end-stage kidney disease (ESKD)?

a. Vascular endothelial growth factor (VEGF)

b. Prostaglandin E4

c. Transforming growth factor beta (TGF- β)

d. Leukotriene B_4.

e. Interleukin-17

Answer: C

Q25 :Actions of MMPs are inhibited by:

a. TIMPs

b. VEGF

c. Proteases

d. Lead cells

e. collagenases

Answer :a

Q26: One of the following is seen in healing with first intention:

a. Large amount of scar tissue
b. Functional disability
c. Minimal wound contracture
d. Scar tissue
e. All of the above

Answer :c

Q 27: Which of the following is incorrect regarding the liver?

a. It is a labile tissue

b. It has capacity for regeneration

c. It is a stable tissue

d. It can be affected by organ fibrosis

e. It has stem cells

Answer :a

Q28: All the following are caused by activation of M2 macrophages by the alternative pathway except:

a. Wound repairs
b. Fibrosis
c. Anti-inflammatory effects
d. Phagocytosis
e. More than one answers

Answer :d

Q29 : Which of the following is a wrong statement?

a. Epithelium injury doesn’t always produce granulation tissue

b. Epithelium is a labile tissue

c. Epithelium has a high regenerative capacity

d. Epithelium is a NOT a permanent tissue

e. Epithelium is normally in G_0, but can be stimulated to regenerate when injured

Answer: E

Q30 : Which of the following is TRUE about bed (pressure) ulcers?

A. They are always fatal

B. They are impossible to deal with

C. They appear as intact epithelial surface under the microscope

D. They are preventable

E. More than one of the above

Answer: D

Q 37: Which of the following is a main part of the remodeling process:

A. TGF-b
B. PDGF
C. VEGF
D. MMP
E. Macrophages

Answer: D

Q32: biopsy taken from the lungs of a patient suffering from progressive respiratory failure and an increase in interstitial space. Results showed a big loss of alveoli and an existence of big **fibrous tissue,** what is the major mediator for this?

A. Histamine
B. Bradykinens
C. TGF β
D. TNF
E. VEGF

Answer :C

Q33 : What is VEGF responsible for?

A. Laying down collagen to close gap

B. Notch signaling

C. Disposition of ECM proteins

D. Switching type 3 to type 1 collagen

Answer :b

Q34: The following picture represents:

a. Venous leg ulcer
b. Keloid scar
c. Diabetic ulcer
d. arterial ulcer
e. None of the above

Answer :A

Q35: A 53-year-old male patient came to you with perianal pain, fever, and chills. He gave a history of anal fissures and hemorrhoids for the previous 2 years. On examination, you find a perianal swelling, ill-defined mass, which is tender to touch. You diagnosed this patient with an abscess and performed ‘’incision and drainage’.” Which of the following best describes the type of inflammation and healing process:

a. Healing by primary/first intention
b. Abscess needing healing by granulation tissue (secondary intention) / This is a severe purulent inflammation
c. Quick regeneration and re-epithelialization
d. Platelet plug scab only
e. stem cells will be required, and full regeneration of lost tissue will follow

Answer: b

Q36: Two clean wound surgeries are done, one for a child with facial injury and the other for an old man with diabetic foot. One statement is right:

a. Both will heal by primary intention and the child's healing will be slower.
b. Both will heal by primary intention, but the old man’s healing will be slower.
c. The child’s wound will heal by secondary intention, while the old man’s wound will heal by primary intention.
d. Both will heal by secondary intention, but the child’s healing will be slower.

Answer :b

Q37: What is the most important fibrogenic factor?

A. FGF-2
B. VEGF-A
C. TGF-B
D. PDGF
E. None of the above

Answer :C

Q38: Which enzyme is involved in membrane degradation?

A. MMP
B. TIMP
C. PDGF
D. FGF-2
E. None of the above

Answer :A

Q39: Black-skinned individuals are more likely to develop which type of scar?

A. Keloid scar
B. Exuberant granulation tissue
C. Aggressive fibromatosis
D. Contractures
E. None of the above

Answer :A

Q40: A patient underwent dental surgery, and the doctor placed a silk suture. What is the type of healing?

A. Repair by primary intention
B. Repair by secondary intention
C. Excessive fibrosis
D. Formation of granulation tissue
E. Foreign body reaction

Answer :A

Q41: Which of the following is a wrong statement?

a. Epithelium injury doesn’t always produce granulation tissue
b. Epithelium is a labile tissue
c. Epithelium has a high regenerative capacity
d. Epithelium is a NOT a permanent tissue
e. Epithelium is a stable tissue

Answer :E

Q42: What is the first (mean) phase of cutaneous wound healing?

A. ECM remodeling
B. Formation of granulation tissue
C. ECM deposition
D. Induction of inflammation
E. None of the above

Answer :D

Q43: Which of the following is not a stable cell?

A. Smooth muscles
B. Endothelial cells
C. Fibroblasts
D. Cardiac cells
E. None of the above

Answer :D

Q44: Which of the following is an intrinsic factor affecting wound healing?

A. Nutrition
B. Infections
C. Foreign bodies
D. Wound in body cavity

Answer :D

Q45: Which one of the following is considered a labile tissue:

A. skeletal muscle
B. kidney
C. oral mucosa
D. liver
E. neurons

Answer :C

Q46: Which one of the following factors will significantly delay healing of a surgical wound?

a. Ingestion of oral antibiotics as prophylaxis
b. A patient who takes steroids
c. Taking oral painkillers for pain control
d. Early postoperative immobilization
e. A patient with prior cholecystectomy

Answer :B

Q47: This finding is best described as:

A. Unacceptable and indicates poor nursing care.
B. Can be managed with proper positioning and nutrition.
C. Is common in all hospitalized patients.
D. Typically resolves without intervention.
E. Commonly found in areas of the body where bones are far from the skin.

Answer :A

These 7 Qs have to options, only correct answer is given.

Q48: Which of the following is not an angiogenesis inhibitor?

Q49: A molecule associated with vasodilation:

Q50: Which of the following is accurate about wound repair?

Q51: A patient with leukemia on steroidal drugs underwent tumor removal surgery. What would happen to the healing process?

Q52: What is the most common mechanism of liver regeneration?

Q53: The usual outcome of perianal abscess formation is:

Q54: Which of the following statements is true about G0 phase in the cell cycle?

Answers:

Q48: PDGF

Q49: NO (information was mentioned in the text book but was not included in the doctors's slides.

Q50: Facial wounds heal faster than leg wounds

Q51: Delayed healing due to immunosuppression

Q52: Hepatocyte proliferation

Q53: Scarring

Q54: Cells in the G0 phase are stable

Q55: A 55-year-old man complains of fever, pain, and a cold. Upon check-up, he has a root abscess that is soft to the touch. Which of the following is true regarding the healing of the abscess?

A) Needs drainage and primary closure
B) Needs drainage and primary healing
C) Purulent, needs drainage, and secondary healing
D) Prescribe a combination of oral antibiotics

Answer :C

Textbook Qs

Robbins and Cortan Review of Pathology
Unit 1, Chapter 3, page 23-30
Q 37-45

Answer and explanation is from the book.
Pics next to the question will be in grey, in explanation will be colored.
Some option and their explanation were deleted
A lot of things arent included or we didn't take, I wrote what and explained some stuff.
They're nice question if u have time

TEXTBOOK

Q1: In an experiment, a group of test animals is infected with viral hepatitis. Two months later, complete recovery of the normal liver architecture is observed microscopically. A control test group is infected with bacterial organisms, and after the same period of time, fibrous scars from resolving hepatic abscesses are seen microscopically. Which of the following factors best explains the different outcomes for the two test groups?

Didn't fully take

A) Extent of damage to the biliary ducts

B) Extent of the hepatocyte injury

C) Injury to the connective tissue framework

D) Location of the lesion within the liver

E) Nature of the injurious etiologic agent

TEXTBOOK

This is key, (we didn't take)

Answer: C

Hepatocytes are stable cells with an extensive ability to regenerate. The ability to restore normal architecture of an organ such as the liver depends on the viability of the supporting connective tissue framework. If the connective tissue cells are not injured, hepatocyte regeneration can restore normal liver architecture. This regeneration occurs in many cases of viral hepatitis. A liver abscess associated with liquefactive necrosis of hepatocytes and the supporting connective tissue heals by scarring. The other options listed may explain the amount of liver injury, but not the nature of the response.

TEXTBOOK

Q2: A 51-year-old woman tests positive for hepatitis A antibody. Her serum AST level is 275 U/L, and ALT is 310 U/L. One month later, these enzyme levels have returned to normal. Which phase of the cell cycle best describes the hepatocytes 1 month after her infection?

The enzyme levels were high
They normally exists inside
Liver cells

A) G0

B) G1

C) S

D) G2

E) M

TEXTBOOK

Answer: A

Enzymes mean Necrosis (injury)
And after 1 month of no injury it should have healed fully

Hepatocytes are quiescent (stable) cells that can reenter the cell cycle and proliferate in response to hepatic injury, enabling the liver to regenerate partially. Acute hepatitis results in hepatocyte necrosis, marked by elevations in AST and ALT. After the acute process has ended, cells return to the G0 phase, and the liver becomes quiescent again.

TEXTBOOK

Q3: A 54-year-old man undergoes laparoscopic hernia repair. In spite of the small size of the incisions, he has poor wound healing. Further history reveals that his usual diet has poor nutritional value and is deficient in vitamin C. Synthesis of which of the following extracellular matrix components is most affected by this deficiency?

a) Collagen
b) Elastin
c) Fibronectin
d) Integrin
e) Laminin

Not fully included, links to biochem and cyto
You should know the answer tho

TEXTBOOK

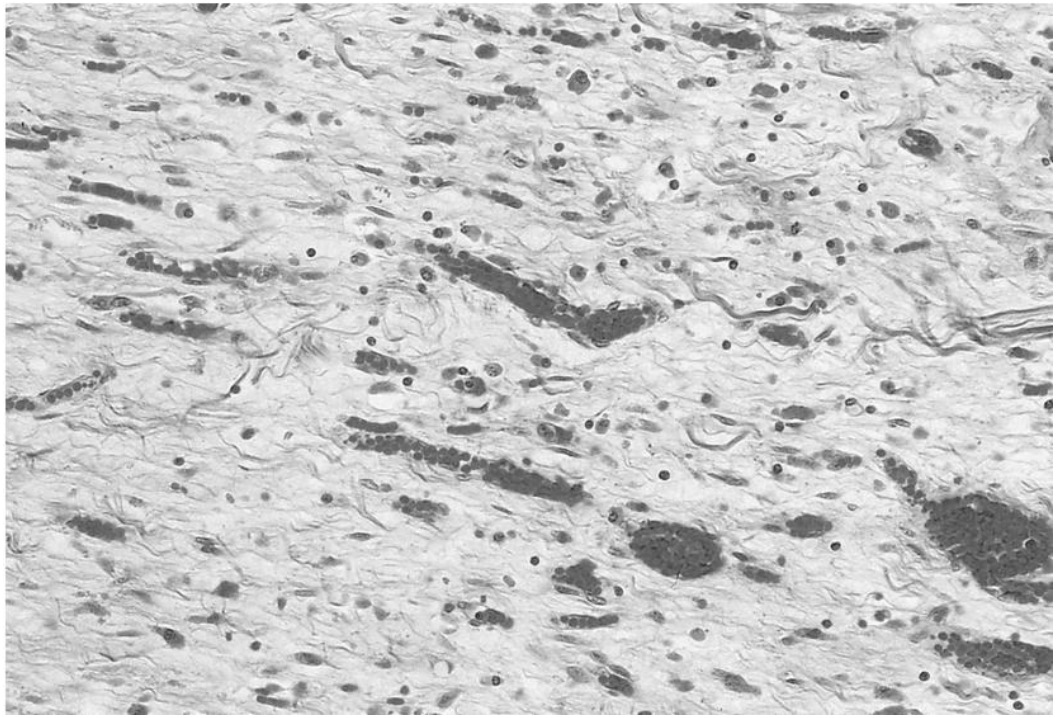
Answer: A

Vitamin C deficiency leads to scurvy, with reduced lysyl oxidase enzyme activity that helps cross-link fibrillar collagens to provide tensile strength. Though elastin is a fibrillar protein, it tends to regenerate poorly in scar tissue, even with the best of nutrition, explaining why a scar does not stretch like the skin around it. The other listed choices are glycoproteins that have an adhesive quality and are not vitamin C dependent.

TEXTBOOK

Q4: In an experiment, glass beads are embolized into the coronary arteries of rats, resulting in myocardial injury. After 7 days, sections of the myocardium are studied using light microscopy. The microscopic appearance of one of these sections is shown in the figure. Which of the following mediators is most likely being expressed to produce this appearance?

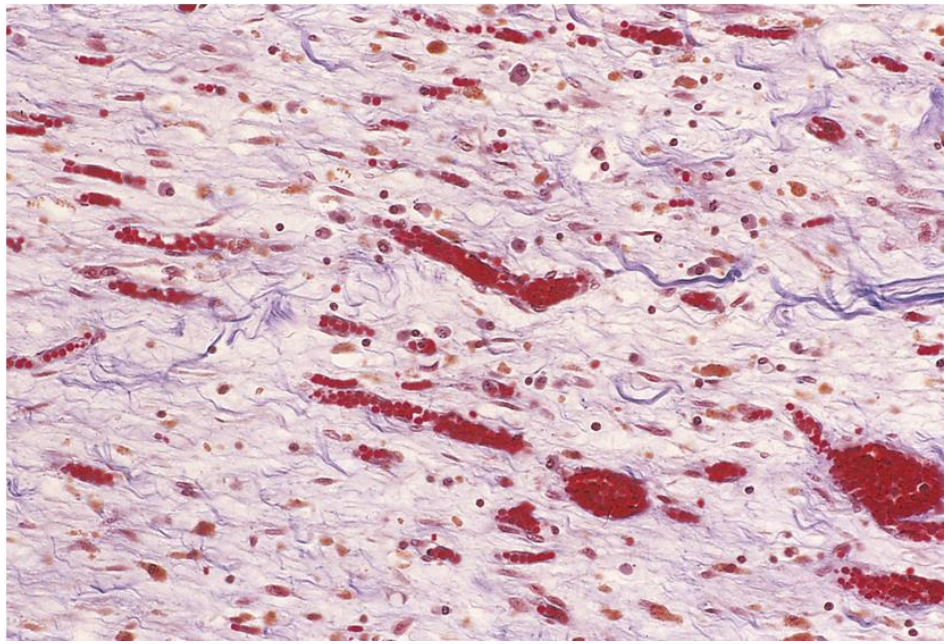
a) Interleukin-2 (IL-2)
b) Leukotriene B4 (LTB4)
c) Thromboxane A2
d) Tumor necrosis factor (TNF)
e) Vascular endothelial growth factor (VEGF)



TEXTBOOK

Answer: E

The figure shows a subacute infarction with granulation tissue formation containing numerous capillaries stimulated by vascular endothelial growth factor, representing a healing response. Interleukin-2 (IL-2) mediates lymphocyte activation. Leukotriene B4 mediates vasoconstriction and bronchoconstriction. Thromboxane A2 aids vasoconstriction and platelet aggregation. Tumor necrosis factor (TNF) induces endothelial activation and many responses that occur secondary to inflammation, including fever, loss of appetite, sleep disturbances, hypotension, and increased corticosteroid production.



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TEXTBOOK

Q5: A 20-year-old woman undergoes cesarean section to deliver a term infant, and the lower abdominal incision is sutured. The sutures are removed 1 week later. Which of the following statements best describes the wound site at the time of suture removal?

a) Collagen degradation exceeds synthesis
b) Granulation tissue is still present
c) No more wound strength will be gained
d) Type IV collagen predominates
e) We deleted option

TEXTBOOK

Answer: B

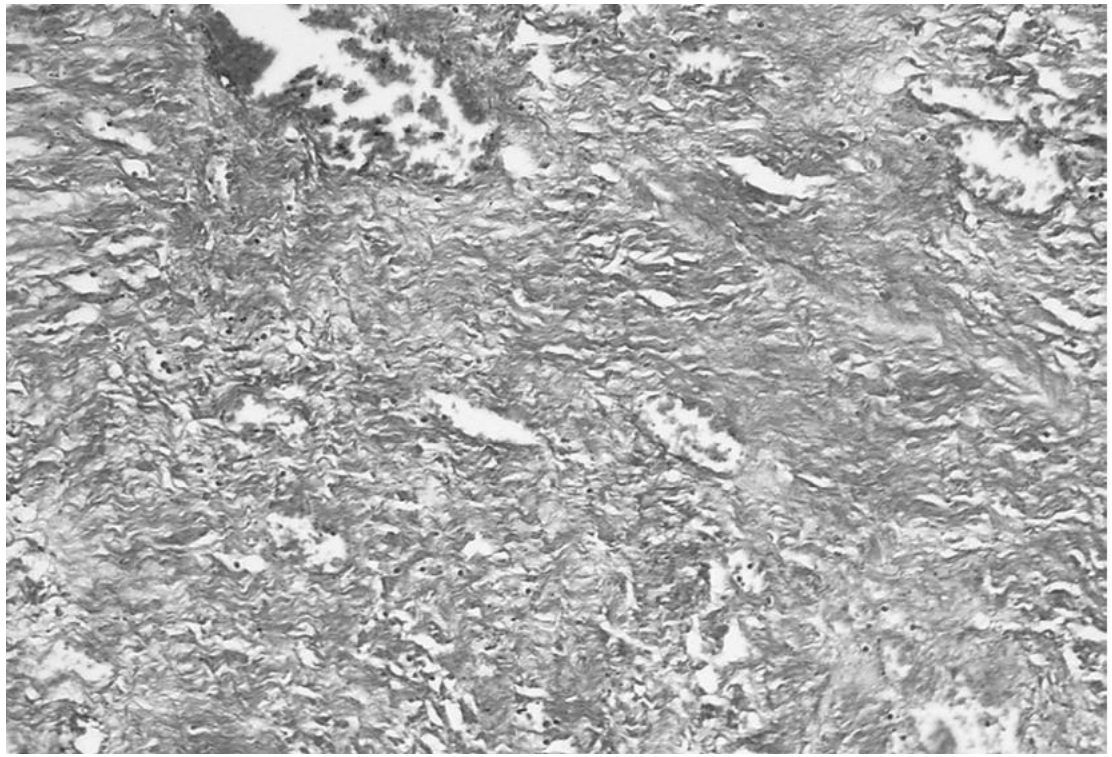
At 1 week, wound healing is incomplete, and granulation tissue is still present. More collagen is synthesized in the following weeks. Type IV collagen is found in basement membranes.

In book answer was A, with same explanation, must’ve been a mistake

TEXTBOOK

Q6: A 24-year-old man with acute appendicitis undergoes surgical removal of the inflamed appendix. The incision site is sutured. A trichrome-stained section representative of the site with blue appearing collagen is shown in the figure. How long after the surgery would this appearance most likely be seen?

a) 1 day
b) 2 to 3 days
c) 4 to 5 days
d) 2 weeks
e) 1 month

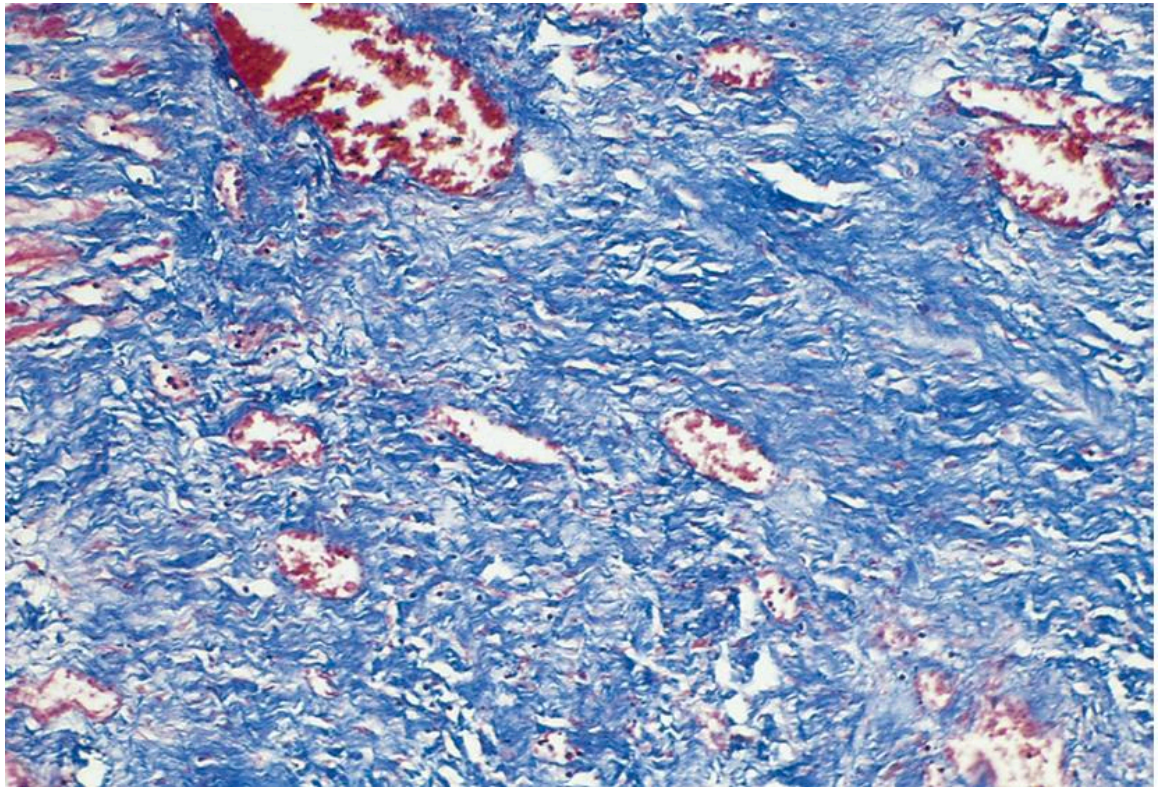


TEXTBOOK

Answer: E

The figure shows dense collagen with some remaining dilated blood vessels, typical of the final phase of wound healing, which is extensive by the end of the first month. On day 1, the wound is filled only with fibrin and inflammatory cells. Macrophages and granulation tissue are seen 2 to 3 days postoperatively. Neovascularization is most prominent by days 4 and 5. By week 2, collagen is prominent, and fewer vessels and inflammatory cells are seen.

U wouldn't be required to distinguish between 2 weeks and a month.
Know blue collagen, then mature scar, then its late



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TEXTBOOK

Q7: A 40-year-old man underwent laparotomy for a perforated sigmoid colon diverticulum. A wound infection complicated the postoperative course, and surgical wound dehiscence occurred. Primary closure was no longer possible, and the wound "granulated in." Six weeks later, the wound is only 10% of its original size. Which of the following processes best accounts for the observed decrease in wound size over the past 6 weeks?

a) Elaboration of adhesive glycoproteins
b) Increase in synthesis of collagen
c) Inhibition of metalloproteinases
d) Myofibroblast contraction
e) Resolution of subcutaneous edema

TEXTBOOK

Answer: D

Wound contraction is a characteristic feature of healing by second intention that occurs in larger wounds. Collagen synthesis helps fill the defect but does not contract it. Adhesive glycoproteins such as fibronectin help to maintain a cellular scaffolding for growth and repair, but they do not contract. The inhibition of metalloproteinases leads to decreased degradation of collagen and impaired connective tissue remodeling in wound repair. Edema diminishes over time, but this does not result in much contraction.

TEXTBOOK

Q8: In an experiment involving observations on wound healing, researchers noted that intracytoplasmic cytoskeletal elements, including actin, interact with the extracellular matrix to promote cell attachment and migration in wound healing. Which of the following substances is most likely responsible for such interaction between the cytoskeleton and the extracellular matrix?

a) Epidermal growth factor
b) Fibronectin
c) Integrin
d) Platelet-derived growth factor
e) Type IV collagen
f) Vascular endothelial growth factor

Cytology question, it's not included

TEXTBOOK

Answer: C

Integrins interact with the extracellular matrix proteins (e.g., fibronectin). Engagement of integrins by extracellular matrix proteins leads to the formation of focal adhesions where integrins link to intracellular cytoskeletal elements such as actin. These interactions lead to intracellular signals that modulate cell growth, differentiation, and migration during wound healing. Epidermal growth factor stimulates epithelial cell and fibroblast proliferation. Platelet-derived growth factor (PDGF) can be produced by endothelium, macrophages, smooth muscle cells, and platelets; PDGF mediates migration and proliferation of fibroblasts and smooth muscle cells and migration of monocytes. Type IV collagen is found in basement membranes on which cells are anchored. Vascular endothelial growth factor promotes angiogenesis (capillary proliferation) through endothelial cell proliferation and migration in a healing response.

TEXTBOOK

Q9: A 23-year-old woman receiving corticosteroid therapy for an autoimmune disease has an abscess on her upper outer right arm. She undergoes minor surgery to incise and drain the abscess, but the wound heals poorly over the next month. Which of the following aspects of wound healing is most likely to be deficient in this patient?

a) Collagen deposition
b) Elaboration of VEGF
c) Neutrophil infiltration
d) We deleted the option
e) Remodeling Enzymes

I think not included

TEXTBOOK

Answer: A

Glucocorticoids inhibit wound healing by impairing collagen synthesis. This is a desirable side effect if the amount of scarring is to be reduced, but it results in the delayed healing of surgical wounds. Angiogenesis driven by vascular endothelial growth factor (VEGF) is not significantly affected by corticosteroids. Neutrophil infiltration is not prevented by glucocorticoids. Reepithelialization, in part driven by epidermal growth factor, is not affected by corticosteroid therapy.

"Glucocorticoids (steroids) have well-documented anti-inflammatory effects, and their administration may result in weak scars because they inhibit TGF-β production and diminish fibrosis." - This was written in the book.

TEXTBOOK

Q10: An 18-year-old man lacerated his left ear and required sutures. The sutures were removed 1 week later. Wound healing continued, but the site became disfigured over the next 2 months by the process shown in the figure. Which of the following terms best describes the process that occurred in this man?

a) Dehiscence
b) Keloid formation
c) Organization
d) Resolution
e) Secondary Intention

TEXTBOOK

Answer: B

The healing process sometimes results in an exuberant production of collagen, giving rise to a keloid, which is a prominent raised, nodular scar, as shown in the figure. This tendency may run in families. Dehiscence occurs when a wound pulls apart. Organization occurs as granulation tissue is replaced by fibrous tissue. If normal tissue architecture is restored, resolution of inflammation has occurred. Healing by secondary intention describes the process by which large wounds fill in and contract.

In color

TEXTBOOK

Q11: A 58-year-old man had chest pain persisting for 4 hours. A radiographic imaging procedure showed an infarction involving a 4-cm area of the posterior left ventricular free wall. Laboratory findings showed serum creatine kinase of 600 U/L. Which of the following pathologic findings would most likely be seen in the left ventricular lesion 1 month later?

a) Chronic inflammation
b) Coagulative necrosis
c) Complete resolution
d) Fibrous scar

Serum creatine Kinase is high
It normally exists inside heart muscle cells

TEXTBOOK

Answer: D

The elevated creatine kinase level indicates that myocardial necrosis has occurred. A fibrous scar gradually replaces the area of myocardial necrosis. Chronic inflammation is typically driven by ongoing stimuli such as persistent infection, autoimmunity, or irritation from endogenous or exogenous chemical agents, and it is not a feature of ischemic myocardial injury. Coagulative necrosis is typical of myocardial infarction, but after 1 month, a scar would be present. The destruction of myocardial fibers precludes complete resolution

For any feedback, scan the code or click on it.

Corrections from previous versions:

Versions	Question #	Before Correction	After Correction
V0 → V1			Added past paper questions 37-55
V1 → V2			