

### **Chapter 3. Healing and Fibrosis**

1. In healing by primary intention (2006)

- (a) there is a large tissue defect
- (b) the tissue defect cannot be reconstituted (is only partially reconstituted)
- (c) an epithelial spur occurs on the first day
- (d) there is extensive development of granulation tissue
- (e) There is a marked degree of wound contraction

2. Following a surgical wound the next thing to happen after clot formation is

- (a) clot breakdown
- (b) neutrophil migration to the incision edge
- (c) an epithelial spur develops
- (d) contraction of the wound edge
- (e) macrophage migration

3. What is the second stage of healing by secondary intention?

- (a) neutrophils appear at the margins of the clot
- (b) epithelial cells move from the wound edges (with little proliferation)
- (c) granulation tissue invasion of the wound space
- (d) filling of the incisional space with granulation tissue
- (e) proliferation of fibroblasts

#### **Answers**

1. In healing by primary intention (p112-113)

- (a) there is a large tissue defect (**secondary intention**)
- (b) the tissue defect cannot be reconstituted (**secondary intention**)
- (c) an epithelial spur occurs after the first day (24-48 hours)**
- (d) there is extensive development of granulation tissue (**secondary intention**)
- \* (e) There is a marked degree of wound contraction (**secondary intention**)

1. **0-24 hours**, neutrophils appear at the edge of the incision

2. **24-48 hours** epithelial spur

3. **day 3** macrophages replace neutrophils, granulation invasion, vertical collagen, does not bridge cut

4. **day 5** Incision filled with granulation tissue, neovascularisation maximal, oedema disappears at

5. **week 2** proliferation of fibroblasts, regression of vessels, accumulation of collagen

6. **week 4** cellular connective tissue. No inflammatory cells. Dermal appendages permanently lost. Months until maximal strength is obtained.

The main differences between primary and secondary intention healing is:

- Inflammatory response more intense: More damage, more inflammation
- Larger amounts of granulation tissue are formed
- Wound contraction is the most distinguishing feature, with the actions of myofibroblasts

2. Following a surgical wound the next thing to happen after clot formation is

(a) clot breakdown (**wrong**)

**(b) neutrophil migration to the incision edge (within 24 hours)**

\* (c) an epithelial spur develops (**24-48 hours**)

\* (d) contraction of the wound edge (**seen in secondary intention wounds**)

\* (e) macrophage migration (**3 days**)

3. What is the second stage of healing by secondary intention? See above for answer
- (a) neutrophils appear at the margins of the clot
  - (b) epithelial cells move from the wound edges (with little proliferation)**
  - (c) granulation tissue invasion of the wound space
  - (d) filling of the incisional space with granulation tissue
  - (e) proliferation of fibroblasts