

## Microscopic FEATURES of injuries regeneration in dogs

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There have been done histological investigations of tissues from different regions of wounds in dogs in different timings of regeneration. There have been adjudicated microscopic changes, which occur in process of wound's healing, and have elucidated dynamics of their repair.

On second day fibroblasts, fibrocytes and collagen fibers are organizing through borders. Near this, on the surface of wound, reticulate structure with small coddies is forming. From deeper located tissues in growth zone, lesions start to grow into blood capillaries. On the surface and in the upper layers of granulation tissue arise colonies of microorganisms.

On the 3rd day in the deep layers of granulation tissue starts forming the typical dermis thick bundles of collagen fibers. On the 4th day the processes of different tissues types formation in wound occur irregularly, that leads to formation different structure of newly formed tissue in the wound in its different layers. Outside newly formed tissue in wound construct of typical granulation tissue, microscopic structure of which is dissimilar in various its depths. In the surface layer, which is in direct contact with the environment, cells die. Under surface layer of previously formed ("old") granulation tissue with high density of cells disposition. Under this layer, in turn, is a layer formed later, "young" granulation tissue, which still has reticular structure. Even deeper revealed layer of fibrous connective tissue, which includes the already large number of thick bundles of collagen fibers, which characteristically for intact dermis. The glands of the skin and hair are not detected.

On the 5th day granulation tissue in all parts of the wound disappears. On its place develops fibrous connective tissue. In the deeper layers of this fibrous connective tissue occurs formation of typical for dermis thick bundles of collagen fibers. However, such beams are focused more disordered and often fragmented. At the same time in the deeper layers of the wound tissue starts forming of hair follicles.

On the 7th day in wound takes place dermis, microscopic structure which is different from normal. It is represented by disordered accumulation of collagen fiber bundles of different thickness and length. Papillary and reticular layers of the dermis is not yet differentiated. In place of the future epidermis manifested quite dense clusters of cells, while the lower layer is due to the large amount of thick bundles of collagen fibers are reminded intact dermis. Many hair follicles have become more differentiated microscopic structure. Hair follicles, outer and inner root sheath clearly differentiated in them. Single hair follicles already have typical microscopic structure.

With the formation of hair follicles and hair growth beginning in newborn dermis, register formation of typical sweat apocrine glands secretion, which occurs through the destruction of the apical parts of their cells, which form their secret that contains parts of cells. Therefore, these glands carry smell, which is characteristic for each individual.

On the 12 th day dermis becomes more ordered structure. Papillary and reticular layers are clearly differentiated in it. Hair follicles have already fully formed and have their characteristic microscopic structure. There is a hair in every follicle. Muscles-elevators of hair haven't detected yet. Sweat glands also fully formed and actively release their secrete.

Neogenic sebaceous glands are relatively presented by disordered clusters of small cells with weakly basophilic and small volume cytoplasm. The size and shape of the cells, both those that

lie directly on the basal membrane, and those, that is in the center of the alveoli, approximately the same. Microscopic features of lipid accumulation in the cytoplasm of all cells are missing.

In this period over the dermis has revealed epidermis. However, its microscopic structure is also different from the typical. Basal membrane in discrete areas hasn't clear-cut yet.

On 15 th day the skin in the area of the wound is completely acquires its characteristic microscopical structure in all layers. Near the hair, follicles have already clearly differentiated muscles-elevators of the hair. The sebaceous glands have already also formed their characteristic microscopic structure.

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