

SPECIAL ONCOLOGY

- Epithelial tumors
- Mesenchymal tumors

Epithelial tumors

- Benign epithelial tumors
- Malignant epithelial tumors

Epithelial tumors

- Benign epithelial tumors

- ❖ Papilloma

- ❖ Adenoma

- ❖ Polyp

PAPILLOMA

- It is a benign tumor originating from **stratified squamous epithelium**.
- If more than one papilloma occurs in the organism, its called “**papillomatosis**”.
- Papillomas are common in Horses (1-3 years) and cattle (under 2 years), are rare in dog, sheep and goats.

PAPILLOMA

- Common in head, neck, shoulder, leg and mammary,
- Less in perineum, under the tail, around the vulva, horn periphery, mouth (dog - oral papillomatosis), esophagus, lip and nose (horse).

PAPILLOMA

Etiology:

- Papillomas may be congenital, or are caused by ultraviolet rays or irritation.
- In some cases the papova virus group (oncogenic DNA virus) is responsible for papilloma.

PAPILLOMA

Macroscopic findings:

- With cauliflower-like projections that arise from the surface.
- Multiple or soliter
- It may appear white or normal colored.
- It may be pedunculated or sessile.

PAPILLOMA

Microscopic findings:

- Characterized with hyperplasia of the epidermis (**stratified squamous epithelium**).
- Acanthosis, hyperkeratosis and hydropic degeneration are seen.
- Basal membrane is not damaged !!!

PAPILLOMA

- The cases of papillomatosis which are formed in the skin recover spontaneously.
- Tumours regress in 9 months in experimental studies, 5 months in natural cases.
- Immunity develops after experimental/natural cases and inoculations.
- In cattles, papillomatosis may develop again after a few years. In horses, they disappear after 1-3 months and complete immunity occurs.

PAPILLOMA

- In animals, transformation of the papilloma into a malignant tumor is rare.
- But, humans papillomas of rectum and urinary bladder frequently change into cancers.
- In many people there are warts on the skin that look like papilloma called as “**Verruca**” .
- If connective tissue is accompanied by papilloma as a neoplasm, calls “**fibropapilloma**”.

ADENOMA

- Adenomas are benign tumors originating from glandular epithelium (ducts or acini of exocrine or endocrine organs).
- Neoplastic area is separated from environmental tissue by strict boundary and shows expansive growth.

ADENOMA

- Microscopically, a large number of increased glands and glandular epitheliums are seen. But, there are no ducts between these glands.
- Glandular structures do not show an uniformity, some are **large**, others are **small**.

ADENOMA

- Types of adenoma: Solid, tubular, alveolar, papilliferous, follicular, trabecular and cystic.
- In some adenomas, acini are enlarged and filled with secretion
(Cystadenoma)
- Usually adenomas formed in the ovary, thyroid, salivary gland, and mammary, tumor cells develop papillary protrusion into the lumen
(*Adenoma papilliferum*)

ADENOMA

- Some adenomas (liver adenomas, perianal gland adenomas of dogs, etc.) do not form lumens. The proliferating cells are seen as column, trabecula or clusters (**Solid adenoma**).
- Particularly in dogs, stroma can be transformed into cartilage and bone structures by metaplasia in mammary adenomas.
(Fibrocondroosteoadenom) (= Benign mixed tumor).

ADENOMA

- Sometimes (especially mammary glands of womans and dogs), **connective tissue is accompanied by adenoma**. It consists in two components (epithelial and fibroblastic) (**fibroadenoma**).
- ❖ **A) Intra canalicular fibroadenoma** : Stromal proliferation predominates and compresses the ducts, which are irregular, reduced to slits.
- ❖ **B) Pericanalicular fibroadenoma** : Fibrous stroma proliferates around the ductal spaces, so that they remain round or oval, on cross section. The basement membrane is intact.

ADENOMA

- Stroma can become malignant in character in adenomas (**Adenoma sarcomatodes**).
- Adenomas can be taken by operation and usually do not recur.

POLYP

- **Polyp** is an abnormal growth of tissue projecting from a mucous membrane.
- In an other saying, polyps are papillomas of the mucous membranes.
- It develops mainly in the nasal mucosa and the large intestines of pigs and horses.
- A large number of polyps is called *polyposis*.
- *According to some researchers polypyps are non-neoplastic* (for example, [hyperplastic](#) or [dysplastic](#)).

Epithelial tumors

- Malignant epithelial tumors

- ❖ Squamous cell carcinoma

- ❖ Basal cell carcinoma

- ❖ Adenocarcinoma

Squamous cell carcinoma

- It is a malignant tumor arising from **squamous epithelial cells (Str. spinosum)** of stratified squamous epithelium.
- It occurs in all domestic animal, especially in dogs, cats and horses and in elderly ages.
- There is no breed or sex disposition.

Squamous cell carcinoma

- In any species this tumor may arise from any site.
- The most common sites are:
 - ❖ In cats: pinna, eyelids, planum nasale
 - ❖ In dogs: head, abdomen, forelimbs, rear limbs, perineum, digits
 - ❖ In horses and cattles: mucocutaneous junctions

Squamous cell carcinoma

- Macroscopically;

It can occur in two types

- ❖ **Productive type:** It is varying in size and can be characterized with cauliflower appearance and papillary proliferations. Its surface tends to ulcerate and easily bleeds.
- ❖ **Erosive type:** Superficial ulcers may progress over time and become deeper by taking a crater-like appearance.

Squamous cell carcinoma

- Microscopically;

After squamous epithelial cells acquire the atypical character, damage the basal membrane and make island into the dermis.

Squamous cell carcinoma

- Normally, the top layer of the epidermis is stratum corneum, composed of keratinized cells and keratin. It has partially separated from the rest of the skin. These dead cells are continually lost from the surface of the skin, and are replaced by new cells from the layers below.

Squamous cell carcinoma

- In tumor, neoplastic squamous cells **proliferating** and **extending** into the dermis, continue to produce keratin. But, dead cells (keratin) can not be lost from the surface due to their location.
- So, **extensive keratinization** is formed in the centre of the neoplastic cells in dermis. In **well differentiated** tumors there is formation of **distinct keratin “pearls”=“Glob corné”**

Squamous cell carcinoma

- Squamous cell carcinoma showing **Glob corné** formation
“**Differentiated squamous cell carcinoma**”
- The type that does not form glob corné is called
“**Undifferentiated squamous cell carcinoma**”.

Note: Differentiated type carcinoma show **slow**, and undifferentiated type carcinoma show **rapid** development

Squamous cell carcinoma

- If cell nucleus debris is still visible in glob corné formations, is called “**parakeratotic glob**”
- If cell nucleus debris has completely disappeared, is called “**keratotic glob**”.
- In most cases, mitotic figures are seen.

Squamous cell carcinoma

- The tumor usually remains locally and slowly metastasizes. Metastases are localized in the lymph nodes and then in the lungs.
- Rarely, widespread metastases are seen.

Basal cell carcinoma

- It is a malignant tumor arising from **basal cells (Str. basale)** of stratified squamous epithelium.
- It is common in cats and dogs and rare in other species. In both species, males are more sensitive than females.
- The most common site is the periocular region, cheek, nose, ear and neck.

Basal cell carcinoma

- It occurs single or sometimes multiple.
- Grossly, they usually are well-circumscribed, firm, grayish-white color on the cut surface and approximately 0,5-10 cm in diameter.
- The skin on it often becomes ulcerated. Sometimes the edges of this ulcer seem to be nibbled. Because of this appearance, ulcer is called "**ulcus rodens**".

Basal cell carcinoma

- Microscopically; tumor cells can be found extending from basal layer of the epidermis into the dermis and subcutis, basophilic with hyperchromatic nuclei and little cytoplasm.
- Fence-like appearance of cells is characteristic

Basal cell carcinoma

- It is possible to distinguish the tumor between solid, ribbon-like, adenoid, medusoid and cystic types, and occasionally the same section can be found in some of these structures.
- Mitotic figures can be seen.

Basal cell carcinoma

- The prognosis is quite good. Because it develops very slowly (sometimes years).
- Metastasis is quite rare.
- If the operation is done carefully, it will result in healing generally and no recurrence will occur.

Adenocarcinoma

- Adenocarcinomas are malignant tumors originating from glandular epithelium (ducts or acini of exocrine or endocrine organs).
- Occur in dogs, cats, mare and humans commonly.
- They are named according to the organ where they develop.
[Mammary adenocarcinoma, Uterine adenocarcinoma, Prostate adenocarcinoma, Thyroid adenocarcinoma etc.]
- In humans, it is common in organs such as mammary, pancreas, prostate, gastrointestinal tract.

Adenocarcinoma

- Tumor can be classified as either **papillary**, cystic, **papillary-cystic**, **tubular**, solid, **follicular**, **trabecular**; or as mucinous and colloid according to the nature of the substance secreted by the tumor cells.
- Like the other epithelial tumors; if the tumor is low in stroma, and the parenchyma cells are high, is called “**medullary carcinoma**”,
- If the tumor is poor with parenchymatous elements and rich with stromal, is called “**fibrocarcinoma or scirrhous carcinoma**”.

Adenocarcinoma

- The prognosis of the tumor differs according to the organ.
- Sweat gland and uterine adenocarcinomas are suitable for operation and generally good results are obtained.
- Prognosis is poor in thyroid, pancreas, gastrointestinal and mammary adenocarcinomas.
- Recurrence and metastasis are common even if they are taken by operation.

Adenocarcinoma

- The prognosis is poor even if they are taken by surgery. Because, both the ovary adenocarcinomas excision can not be done completely and tumor metastasizes to the peritoneum easily (**implantation metastasis**).
- In adenocarcinomas of the liver and bile ducts, liver rupture and internal bleeding usually result in death.