

# Mixed tumors

**Mixed tumors** are tumor proliferations of cells of several histogenetic types. They arise on the basis of the tumor transformation of a cambial cell, which has the ability to differentiate in several directions - in one lesion, clones corresponding phenotypically to several histogenetic cell types are thus formed, unlike teratomas, tumor-proliferating tissues originate from tissues with a possible natural occurrence at the site of growth, and in addition, they can be derived from a single cotyledon.

## Earlier theories assumed:

1. simultaneous transformation of two tissue cell lines with different differentiation
2. collision mechanism - ingrowth of two transformed tissues into each other (the transformation did not have to be simultaneous).

Mixed tumors can be: (there are also representatives of benign and malignant in each group)

- epithelial
- mesenchymal
- mesenchymoepithelial

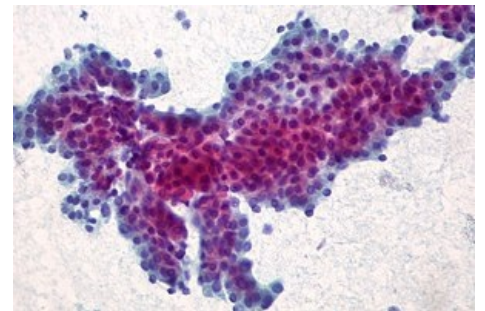
## Epithelial mixed tumors

- Benign:

1. **Myoepithelioma** - a mixed tumor of the sweat and salivary glands, it is also common in the mammary gland, consists of two types of cells: duct epithelium (cytokeratins) and peripheral myoepithelia (contractile fibrils in the plasma - actin, protein S 100).
2. **Adenolymphoma (Whartin's tumor, *cystadenoma lymphomatosum papillare*)** - cysts lined with two layers of epithelium, which have oncocyctically changed eosinophilic cells with nuclei apically and secretory cells with nuclei basally. They often form papillary formations. In the stroma there is lymphatic tissue (B-lymphocytes without signs of tumor proliferation).
3. **Benign thymoma** - the original reticular epithelium of the thymus differentiates differently to the epidermoid type (cortical variant) or the spindle cell direction (medullary variant). There are also a number of non-neoplastic lymphocytes (T-lymphocytes) in the stroma

- Malignant:

1. **Adenosquamous carcinoma** - glandular component (tubular) and surface epithelium (squamous cellular), both have signs of malignancy, the tumor occurs in all mucous membranes, but is rare, it must be distinguished from **adenocarcinoma**, where only the glandular component is malignant (the squamous component arises from metaplasia).
2. **Mucoepidermoid carcinoma** - epithelial (squamous cell) and glandular (mucous-forming) component, in the salivary glands.
3. **Mixed ovarian carcinomas** - sometimes there are several epithelial structures in the tumor: serous, mucinous, endometrial, clear cell and Brenner's tumor epithelium



Whartin's tumor

## Mesenchymal mixed tumors

- Benign (collectively referred to as **benign mesenchymoma**):
  - they occur as pronounced **hamartia** in parenchymal organs (angioliopoma, angiomyoliopoma in the kidney) and in soft tissues (fibrous hamartoma).
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- Malignant (**malignant mesenchyma**):
  - a rare tumor of the soft tissues of elderly people, it mainly contains fibrosarcoma differentiation, then cartilage, rhabdomyosarcoma and liposarcoma.

## Mesenchymoepithelial mixed tumors

- Benign:
  1. **Fibroadenoma** - an encapsulated tumor of the mammary gland (a similar tumor in the ovary is referred to as an adenofibroma), the epithelial component consists of a two-layer duct epithelium, the fibrous component consists of proliferating strongly cellular tissue with hyalinization of the underlying mass, according to the predominance of proliferating epithelium or tissue, fibroadenoma is distinguished into pericanalicular and intracanalicular.
  2. **Adenomyoma** - in the wall of the digestive tube.
- Malignant:

1. **Adenosarcoma** – only the mesenchymal component (mammary gland, ovary) is malignant, if both components are malignant, it is a carcinosarcoma.

Special cases are **triphasic nephroblastoma** (Wilms tumor of the kidney), **pleomorphic adenoma** (myxochondroepithelioma of the salivary glands) and **biphasic mesothelioma**.

## Links

## Source

- PASTOR, Jan. *Langenbeck's medical web page* [online]. [cit. 17.04.2010]. <<https://langenbeck.webs.com/>>.