

# Esophageal tumors

1. **Benign** - most often leiomyoma.
2. **Malignant** - squamous cell carcinoma (90 %), adenocarcinoma and melanoblastoma (10 %).

## Benign tumors of esophagus

1. **Intramural** (solid or cystic) - leiomyoma, fibroma, lipoma, hemangioma, congenital or retention cysts.
  2. **Intraluminal** (stalk or sessile polyps) - adenoma, papilloma, fibrolipoma, myxoma.
- They usually do not cause problems, rarely bleeding or dysphagia;
  - Endoscopic or X-ray diagnostics (contrast agent passage);
  - Indications for removal are clinical difficulties or the impossibility of eliminating malignancy - it is performed endoscopically, enucleation of intramural tumors or wedge resection from thoracotomy or thoracoscopically.

## Malignant tumors of the esophagus

- Oesophageal cancer is most common between 50-70. year of life, more common in men, the highest incidence is in China;
- Risk factors are exogenous (smoking, alcohol, spicy diet, vitamin deficiencies) and endogenous (precancerous lesions - hiatal hernia, Barrett's esophagus, achalasia, Plummer-Vinson syndrome, strictures after burns);
- The prognosis for 5-year survival is 10%.

### Microscopy

- 90 % squamous cell carcinoma;
- 10 % adenocarcinoma (mainly distal esophagus and GE junction based on Barrett's esophagus); adenocarcinoma currently predominates.
- Melanoblastoma.

### Macroscopic appearance

- The tumor may be *exophytic* (polyp), planar infiltrating (circular narrowing of the esophageal lumen followed by longitudinal submucosal spread) or *ulcerative*;
- The most common are tumors in the middle thoracic esophagus;
- Difficult differentiation of terminal esophageal tumors from cardiac tumors (esophageal adenocarcinoma is considered to be the one in which more than 80% of the volume is located in the esophagus) - nádory této oblasti se dělí na:
- Types:
  - type I - ca in the distal (Barrett's) esophagus;
  - type II - ca cardia;
  - type III - subcardial (fundus) ca.

### TNM classification

- T1 - mucosa or submucosa;
- T2 - external muscular infiltration;
- T3 - adventitia infiltration;
- T4 - growing into the surroundings;
- N1 - regional lymph nodes (cervical in the cervical section of the esophagus, mediastinal and perigastric in the thoracic section);
- M1 - distant metastases.

### Dissemination of esophageal cancer

- Continuous - per continuitatem to the surroundings (trachea - fistula with aspirations and bronchopneumonia, mediastinum, lungs, pleural and pericardial cavity);
- Lymphogenically - mediastinal and paratracheal nodes, also gastric nodules under the diaphragma;
- Hematogenously - liver, lungs, rarely bones and CNS.

### Symptoms

- Progressive dysphagia and odynophagia (late symptom);
  - dysphagia initially just for a solid food (unlike achalasia, where fluid passage is disrupted and the solid



Squamous cell carcinoma of the esophagus, endoscope view.



Squamous cell carcinoma of the esophagus (same patient), view with an endoscope after using Lugol's solution, which will better clarify the extent of the lesion.

food passes);

- Retrosternal pain, weight loss, anemia, aspiration pneumonia.

## Diagnosis

- Biopsy endoscopy;
- CT of the chest and abdomen (evaluation of tumor spread, distant metastases);
- Endoscopic ultrasound (EUS) (tumor growth into the environment, nodal involvement);
- Staging (distant metastases - PET / CT, lung X-ray, liver ultrasound, skeletal scintigraphy);
- Others -X-ray passage of the contrast agent through the esophagus, NMR, bronchoscopy (tracheobronchial invasion is a contraindication to esophagectomy);
- Laboratory examination: tumor markers CEA , SCC .

## Treatment

### Surgical and endoscopic

#### Radical:

- Tumors of the Tis or T1 stage can be treated by endoscopic mucosectomy;
- For more advanced tumors there are different types of esophagectomies (for tumors in the GE junction with different types of gastrectomies - total gastrectomy or just cardiac resection) with mediastinal and celiac lymphadenectomy and esophageal replacement with tubular stomach , colon or small intestine, resections can be performed classically from thoracic and laparotomy or only from the cervical approach and laparotomy with esophageal stripping transhiatally (in high-risk patients, where thoracotomy is thus avoided), possibly also by video-assisted thoracoscopy;
- Contraindications to esophagectomy are distant metastases and tumor ingrowth into the tracheobronchial tree.



Barrett's esophagus

#### Palliative:

- Dilatation of tumor stenoses:
  - laser recanalization (stenoses often recur);
  - stent placement - coated expandable stent (currently the best option);
  - Haring's endoprosthesis (no longer used today, there was a number of complications including esophageal wall pressure ulcers);
- Palliative bypasses - stomach, intestines;
- Gastrostomy (surgical or endoscopic - PEG).

### Radiotherapy

- Low radiosensitivity (squamous cell carcinoma more);
- Neoadjuvant (improvement of operability) and adjuvant (removal of residues) are performed, as well as in inoperable tumors;
- Brachyradiotherapy is also used (palliatively to clear stenoses).

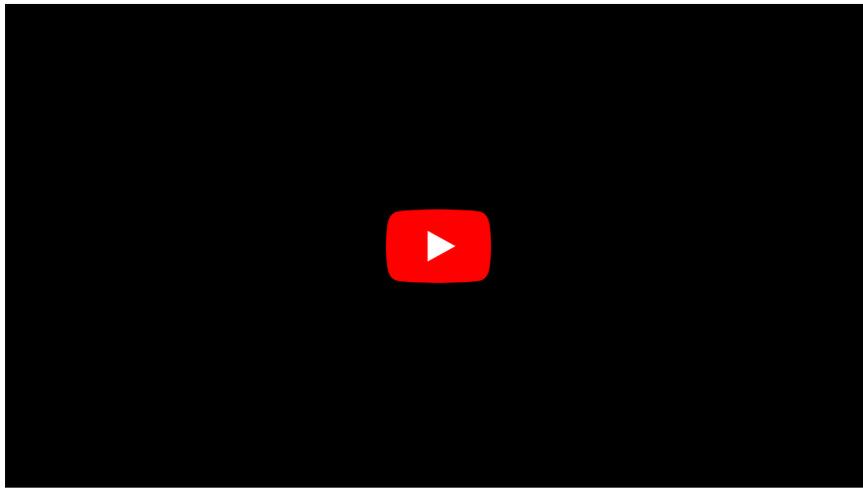
### Chemotherapy

- Low sensitivity;
- The combination of cisplatin with 5-fluorouracil is most commonly used;
- It is performed neoadjuvantly and adjuvantly.

### Photodynamic therapy

- Activated porphyrin is taken up selectively by the tumor tissue, and after the laser irradiation oxygen radicals are formed, causing the tumor necrosis;
- It's also being tested on Barrett's esophagus.

## Summary video



## References

### Related articles

- Esophagus diseases
- Esophageal reflux disease

### Sources

- PASTOR, Jan. *Langenbeck's medical web page* [online]. ©2009. [cit. 05-12-2021]. <<http://langenbeck.webs.com>>.