

# Laryngeal injury

- It can be classified as **internal** or **external**
- It can also be classified according to the location: **supraglottic, glottic, subglottic**.

## Internal injuries

### Foreign bodies

- Foreign bodies **wedged at the vestibule** of the larynx are manifested by an immediate attack of a severe cough, laryngospasm, dysphonia, and pain.
- Foreign bodies located **in the subglottic area** trigger dyspnea with expiratory stridor.
- **Chronic** foreign body presence causes local inflammation with the formation of granulomas.
- In the case of **organic** foreign bodies, a systemic response may occur and there is a risk of foreign body swelling and thus its extraction is impaired.
- **Treatment:** Removal of the foreign body using direct or indirect laryngoscopy. Sometimes, it is necessary to perform a tracheostomy to bypass the obstruction.

### Iatrogenic internal injuries

- Typically occur during or after intubation.
- Mucosal injuries of the inlet, glottis, and subglottic region with blood suffices and edema
- Sometimes laceration injuries with bleeding
- Rarely, vocal cord abrasion to infection (typically postintubation granuloma formation)
- Erosions are often secondary to infection (typically postintubation granuloma formation)
- Stenosis can occur. This is often due to the inadequate size of the endotracheal cannula.
- The cuff must not be inflated in the glottis and subglottic region due to the high risk of stenosis.
- **Safe intubation time:** approximately 48 hours for adults and 5-6 days for children.
- **Findings in case of injury:** shortness of breath, sometimes voice disorders, can manifest 2-6 weeks after intubation
- **Treatment:** endoscopic or surgical intervention.

### Corrosive agents and toxic fumes

- **Swallowing of corrosives** damages the laryngeal vestibule, pharynx, and esophagus.
- The whole larynx is damaged by the inhalation of toxic gases or smoke.
- **Symptoms** range from inspiratory dyspnea and irritating cough to suffocation.
  - If the vestibule is injured as well, odynophagia and dysphagia are present.
  - Within the larynx, edema, fibrin coatings, and possibly necrosis of the mucosa can be present.
- **Treatment:** corticoids, and restoring and maintaining breathing

## External injuries

### Blunt injuries

- The most common causes of blunt injuries are **traffic accidents, sports accidents, assaults**, and rarely hanging.
- One can classify the injury according to the degree of damage:

#### No anatomical damage of the larynx

- Reflex cardiopulmonary arrest may occur.

### Contusion of the larynx

- The larynx is anatomically damaged.
- Suffusions, hematomas, cricoarytenoid distortions, and thyroid cartilage fractures may be present.
- In severe cases:
  - **Supraglottic avulsion** - complete circumferential rupture of the larynx at the level of the laryngeal ventricle. The upper part of the larynx is displaced behind the mandible and the lower part is displaced behind the sternum.
  - **Subglottic dislocated fracture of the cricoid cartilage**
  - **Laryngotracheal avulsion:** detachment of the larynx from the trachea, caused by trauma under the cricoid cartilage during hyperextension of the neck.
- **Symptoms** - palpable pain, swelling of the throat, hoarseness to aphonia, odynophonia, odynophagia, cough, hemoptysis, crepitation of fragments, and inspiratory dyspnea.
- **Treatment**
  - **For suffocation:** maintaining airflow via tracheostomy

- **Conservative approach:** for minor injuries, for fractures without dislocations
- **In severe cases:** surgical intervention

## Open laryngeal injures

- Cuts (vulnus scissum and sectum) and stab (vulnus punctum) wounds are rare.
- Most often, these are caused by shattered glass fragments or suicide attempts.
- **Basic symptoms** - wound with foamy blood, hemoptysis, irritating cough, and dyspnea.
- **Treatment:** in case of suffocation, intubation, tracheostomy, or cricothyrotomy is necessary.
  - A tracheostomy is performed as far as possible from the place of injury.
  - Surgical intervention is almost always required.

## References

### External links

Traumatic changes (<http://atlas.lf1.cuni.cz/ohr/traumaticke-zmeny-12/>)

### Source

- BENEŠ, Jiří. *Studijní materiály* [online]. ©2007. [cit. 2009]. <[http://jirben2.chytrak.cz/materialy/orl\\_jb.doc](http://jirben2.chytrak.cz/materialy/orl_jb.doc)>.

### Literature

- KLOZAR, Jan. *Speciální otorinolaryngologie*. 1. edition. Praha : Galén, 2005. 224 pp. ISBN 80-7262-346-X.
- HAHN, Aleš. *Otorinolaryngologie a foniatrie v současné praxi*. 1. edition. Praha : Grada, 2007. 390 pp. ISBN 978-80-247-0529-3.