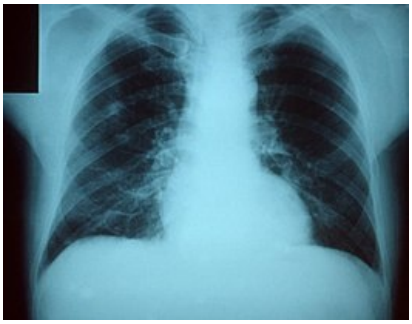
Postoperative respiratory complications

Postoperative respiratory complications are a relatively common problem. They arise in connection with **intubation** during surgery under general anaesthesia, as a result of **insufficient pulmonary ventilation** or due to **postoperative pain** when the patient is unable to cough up sputum. Patients with chronic bronchial and pulmonary disease (bronchitis, bronchiectasis, bronchial asthma) are at increased risk. In elderly patients, complications may arise in connection with heart failure and surgical shock. Respiratory complications are clinically significant as they may prolong hospitalisation, increase the cost of treatment and contribute to perioperative deaths.

Pulmonary edema

It is characterized by the presence of fluid in the lung chambers and interstitial tissue. It may be caused by left heart failure or by uncontrolled infusion therapy. Another cause of oedema formation may be increased permeability of pulmonary capillaries during allergic reactions or in renal failure. Typical symptoms are: dyspnea, cyanosis, rapid breathing, choking, tachycardia, coughing up foamy pinkish sputum. Tracheal rales and wheezes are present.


pneumonia- chest scan

Prevention: measure CVP in at-risk patients (prevent overdose with infusions). Measure arterial pressure or echocardiographic measurement of pressure and circulatory parameters.

Treatment: administration of diuretics, high fraction oxygen. The patient is moved to a permanently monitored acute care bed. Previously, so-called non-bloody phlebotomy was used, which consisted of contraction of three limbs for 15 minutes to reduce venous return.

Inflammations of the lungs

Postoperative pneumonia is usually of secondary origin. Usually bronchopneumonia develops at the site of atelectasis or inadequately ventilated lung lobe. Severe complications are caused by aspiration bronchopneumonia, which may progress to lung abscesses. In patients with chronic pulmonary inflammation, chronic bronchitis may worsen after surgery and subsequently progress to bronchopneumonia. Another possibility of pulmonary inflammation is non-aseptic handling of intubation and breathing devices. Postoperative bronchopneumonia is the most common postoperative respiratory complication. Therefore, it is essential to examine the lungs by auscultation after surgery and to complete a radiographic examination of the lungs if an inflammatory process is suspected.

Treatment: administration of antibiotics, preferably targeted according to bacteriological examination.

Obstruction of the airways

Causes of early airway obstruction include:

- **obstruction by a foreign body**, for example: dentures, loose teeth, crowns;
- **obstruction by a protruding tongue**: this obstruction occurs when there is insufficient return of consciousness, insufficient tongue tone, or bleeding in the tongue area;
- **laryngeal spasm**;
- **laryngeal edema**;
- **bronchospasm**.

Aspiration

Aspiration is the entry of liquid or solid substances into the airways. The clinical manifestations of aspiration are mainly acute respiratory insufficiency and chemical tracheobronchitis, which may subsequently progress to bronchopneumonia with the formation of lung abscesses. Aspiration complications with subsequent development of pneumonia have a high lethality.

Apnea

Respiratory arrest can occur as the anaesthesia wears off, usually within 2 hours after surgery. A consequence of the persistence of the effect of myorelaxants. Always requires immediate initiation of resuscitation.

Laryngotracheitida

It is caused by irritation of the laryngeal and tracheal mucosa by the endotracheal cannula used during intubation.

Atelectasis

It is the non-airiness of a certain region of the lung, when bronchial obstruction is caused by spasm, or content (mucus). The most common causes of atelectasis are the accumulation of bronchial secretions (blood, aspiration of stomach contents). The patient suffers from tachycardia, shortness of breath, expectoration and cyanosis.

Shock lung

The "shock lung" syndrome most often occurs in hemorrhagic and traumatic shock, or after major surgery. Other risks of shock lung include extracorporeal circulation during surgery and septic conditions.

References

Related articles

- Pneumology
- Pulmonary edema
- Aspiration
- Atelectasis

Sources

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- ZEMAN, Miroslav, et al. *Speciální chirurgie.* 2. edition. Praha : Galén, 2004. 575 pp. ISBN 80-7262-260-9.