

ENT aspects of sleep apnea syndrome

- Snoring = rhonchopathy;
- OSAS = obstructive sleep apnea syndrome;
- SAS = sleep apnea syndrome.

Etiology and pathogenesis

- **Pharyngeal obstruction** – partial (rhonchopathy) x complete (OSAS).
- The muscle tone is not enough to overcome the negative air pressure during inspiration and thus to maintain the lumen – the pharynx collapses; muscle tone decreases with age.

Other factors:

- the size of the velopharyngeal space (soft palate, uvula, tonsils, adenoid vegetation, tumors);
- the size of the retroglottal space (retroposition of the tongue, hypertrophy of the lingual tonsil);
- obstruction of the nasal cavity and nasopharynx.

The most common site of obstruction – soft palate, retroglottal space. **Turbulent airflow** through a partially collapsed larynx → vibration → snoring. Complete collapse of pharyngeal musculature → apnoeic pause (tens of seconds **to minutes** !!) → awakening reaction → restoration of muscle tone → restoration of breathing (often explosive snoring).

Consequences

Rhonchopathy – mainly bothers the surroundings; OSAS – effect especially on KVS:

- **CVD** – hypertension, higher incidence of IM, CAD, arrhythmias, stroke.
- **Disruption of sleep architecture** – impact on quality of life – deterioration of cognitive functions, depression, sexual dysfunction, daytime sleepiness.

Diagnostics

1. *Benign rhonchopathy* – without apnoeic pauses, without hypoventilation and hypoxia, the quality of sleep is not impaired.
2. *Syndrome of increased HCD resistance* – increased respiratory effort → increased intrathoracic pressure → awakening, without hypoventilation and hypoxia.
3. **OSAS** – **apnoeic pauses** (duration min. 10 s; more than 10 per hour); it is necessary to differentiate *the central SAS (without HCD obstruction)*.

Targeted anamnesis (if possible also from the partner); subjectively – insufficiently refreshing sleep, increased daytime sleepiness; habitus – often obesity; **ENT examination** – nasal patency, spaciousness of the velopharyngeal area and the area behind the root of the tongue, size of the mandible, position and size of the root of the tongue; possibly imaging methods – lateral X-ray cephalometry, CT, MR; examination in the **sleep laboratory** – all-night **polysomnographic monitoring** (distinguishing simple rhonchopathy from SAS and obstructive apnoeic pauses from central ones).

Therapy

1. **Conservative**
 - *Lifestyle* – sleep hygiene (regularity, adequate length), do not consume alcohol in the evening, avoid hypnotics, do not sleep on your back, do not smoke, weight reduction for obese people.
 - **CPAP** (continuous positive airway pressure) – nasal positive pressure ventilation; the nasal mask – *excess pressure in the HCD* – prevents the collapse of the pharyngeal muscles.
 2. **Surgery**
 - Nose and nasopharynx – septoplasty, adenotomy.
 - **Velopharyngeal space**
 - **UPPP** (uvulopalatopharyngoplasty) – resection of part of the soft palate, part of the palatal arches and the entire uvula, bilateral tonsillectomy.
 - **LAUP** (laser assisted uvuloplasty) – laser uvuloplasty, outpatient procedure.
 - **Radiofrequency ablation** – insertion of needles into tissue → delivery of radiofrequency energy → thermal damage → coagulation necrosis → a scar that is smaller in volume than the original tissue.
 - Tongue retroposition, maxillomandibular shift, tracheostomy.
- Simple rhonchopathy – LAUP, radiofrequency ablation.
 - Light to medium SAS – UPPP.



Patient connected to CPAP

- Severe SAS – CPAP, UPPP (if CPAP is not possible).

Links

Related Articles

- Sleep apnea syndrome
- Sleep Disorders
- Headaches

References

- KLOZAR, Jan, et al. *Speciální otorinolaryngologie*. 1. edition. Praha : Galén, 2005. 224 pp. ISBN 80-7262-346-X.