

# Thoracic outlet syndrome

**Thoracic outlet syndrome (TOS)** occurs during intermittent compression of the subclavian artery + subclavian vein + brachial plexus in the upper thoracic aperture **between the 1st cervical rib and the surrounding structures**. Compression is facilitated by disorders of the cervical spine, paravertebral muscles and muscles of the humerus. Sometimes blood vessels can be suppressed by a lung apex tumor. We distinguish three types:

1. **Scalene syndrome**, in which the anterior scalenus and the medial scalenus muscle participate in the compression during the rotation of the head with the raised chin and during inhalation.
2. **Costoclavicular syndrome** manifests itself when the chest is pushed out and the shoulders are pushed back.
3. **Hyperabduction syndrome** is the most common type, compression arises when the upper limb is lifted in abduction.

## Clinical manifestation

The syndrome is clinically manifests in only a small proportion of those affected. There is a feeling of coldness and whitening of the fingers, Raynaud's syndrome, pain and fatigue of the upper limb when working out, paraesthesia in the upper limb, especially in the fingers, weakening / disappearance of pulsations in the arteries of the upper limb + murmur in the subclavian area (only in certain positions), trophic skin changes on the fingertips (exceptionally in advanced conditions where wall thrombosis of the subclavian artery and peripheral embolizations have occurred).

## Diagnostics

- Adson's test - when the head is turned to the side in maximum inspiration, due to Scalene syndrome, the radial pulse disappears.
- X-ray

## Therapy

**Conservative** form prevails - avoiding provocative positions, rehabilitation, treatment similar to Raynaud's syndrome. In case of severe disorders, the 1st rib can be resected.

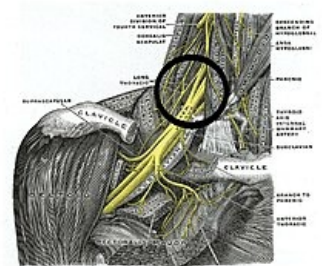
## Links

## Bibliography

- KLENER, P. *Vnitřní lékařství*. 3. edition. Prague : Galén, 2006. ISBN 80-7262-430-X.



Interscalene block



Infraclavicular block

