

Degenerative diseases of the cervical spine

Degenerative diseases of the spine, generally

- one of the most common causes of incapability to work, often leading to disability
- these changes are only solved by a neurosurgeon if they cause **compression of nerve structures**
- it manifests with irritant or extinct neurologic symptomatology
- the only thing that will be achieved through surgery is the **decompression of structures**, restoration of functions will occur only when the spinal cord is not yet irreversibly damaged
- pathogenesis – **degeneration** occurs on all structures of the vertebrae – **intervertebral disc** – breakdown of collagen fibers, decrease in water, decrease in elastic fibers, cracks and tears form, breakdown into sequesters, osteophytes form on bones, ...
 - in addition to **disc herniation** (this is most frequent), **bone** apposition is also involved in compression

Cervical part of the spine

- disc herniation occurs, productive changes,... and subsequently canal stenosis or foraminal compression
- prolapse is manifested by a rather sudden, rapidly progressing symptomatology, productive changes usually have chronic symptoms
- **vertebral syndrome** – restriction of cervical spine mobility, blockages, contractures, pain
 - characteristic symptom of disc herniation – so called **decharge electrique** (Lhermitt's symptom) – when the head is tilted forward an electric shock is felt along the spine
 - compression is manifested by spinal root syndrome (radiculopathy) and spinal cord compression (myelopathy)
- **cervical root syndromes** – cervicobrachial syndromes
 - irritant radicular symptoms - painful radiation to the appropriate dermatome in the upper extremities
 - extinction symptoms, motoric and sensitive
- **myelopathy** – compression is from the front (either by a disc or osteophytes) – therefore motorics are mainly affected
 - sensation is only affected by an extensive compression
 - under the site of compression – clinical image of central paresis – hyperreflexia, spasticity, pyramidal irritations



X-ray – degenerative diseases of the cervical spine.

Differential diagnosis

- some primary spinal cord diseases may have a similar picture (MS, amyotrophic lateral sclerosis)

Diagnosis

- X-ray shows osteophytes, dynamic images show instability (when bend forward and backward, ...)
- CT – size of osteophytes and channel narrowing, yield improves with intrathecal contrast (CT-PMG)
- MRI – for detection of disc herniation

Treatment

- **indications**
 - *absolute*
 - acute, sudden onset or rapidly progressing compression syndrome
 - causes – medial disc herniation
 - immediate surgery, irreversible changes occur very quickly, methylprednisolone should be administered as soon as possible
 - *relative*
 - all radiculopathies and myelopathies
 - based on the severity of clinical findings and from the proof of compressing structures
- **types of surgeries**
 - *anterior approach*

- for disc herniations, dorsal or lateral osteophytes
- bone grafts are placed in the areas around the plates (in order to prevent kyphotization), osteosynthesis
- *posterior approach*
 - reserved for multi-storey stenoses, where in addition to osteophytes, there also is a congenital narrowing of the canal
 - decompression of laminectomies, durotomies and release of the dentate ligament
 - rarely performed today

Links

External links

- Degenerativní onemocnění páteře

Sources

- BENEŠ, Jiří. *Studijní materiály* [online]. ©2007. [cit. 08.07.2022]. <<http://www.jirben.wz.cz/>>.

Literature used

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