

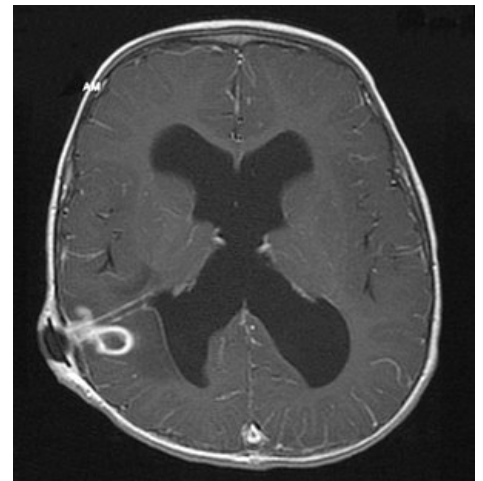
Inflammatory intracranial diseases

Bacterial meningitis

- neurosurgeons are mainly interested in meningitis arising from a disability of a neurosurgical nature
- sometimes, for example, meningitis may indicate an affection that can be treated neurosurgically (dermal sinus, congenital defect – communication of paranasal sinuses with intracranium,...)
- etiology – mainly in connection with traumas (fractures of the base,...)
 - in connection with the abscess, either at the stage of creation or as a complication
 - less often it can arise as a surgical complication (high risk is when implanting shunts in hydrocephalus)
- prevention – we administer a wide range of ATBs
 - chloramphenicol, some cephalosporins III. generation, penetrates the blood-brain barrier (BBB) well and some sulphonamides
- therapy – heavy lumbar punctures are important – we drain pus
 - we do not operate in meningitis
- **recurrent bacterial meningitis syndrome** – somewhere there is some communication to the intracranial space, there may not be an obvious accidental etiology, especially in pneumococcal infections

Brain abscesses

- inflammatory deposit in the brain tissue, purulent colicvated, more or less encapsulated
- even today it poses a serious threat to the patient's life
- according to the way of contact we distinguish:
 - **contact** abscesses – the infection is clogged from the outside (trauma, surgery)
 - **adjacent** abscesses – arise from purulent deposits close to the neurocranium (from VDN, via thrombophlebitis, from the middle ear,...)
 - **metastatic** abscesses – blood from distant deposits in bacteremia
 - **cryptogenic** – the primary deposit is not detected
- clinical picture – close to other expansion processes in the skull – in the foreground is the syndrome of intracranial hypertension and focal symptoms
 - if it is in the so-called silent areas of the brain, then there are no focal manifestations
 - abscesses need to be considered in central symptomatology if we have a significant infectious deposit in the body
 - but there may be no fever, no lymphocytosis, no increased sedimentation (especially in encapsulated ones)
 - the CT of the brain is decisive – a hypodense expansion process with a hyperdense rim, which significantly opacifies after contrast (so-called ring sign)
- diff. dg – other expansive processes also have ring sign – mainly gliomas → probatory punctures
- prompt diagnosis of abscess is important, the patient is at risk of sudden reversal
 - an abscess can rupture → pyocephalus, it is almost always fatal
 - or rapid increase in edema,...
- therapy – pus evacuation – either by puncture or more punctures or bearing drainage
 - or extirpate it with the sheath (the thicker the sheath, the better, in thin cases there is a risk of rupture and spilling of pus into the operating field)
 - about ATB coverage (according to cultivation, there is usually many bacteria, usually it is a mixed flora)
 - it is also necessary to solve the primary deposit, if we know it



Brain Abscess at MRI (T1 + contrast) – showing a small ring-enhancing lesion with mild surrounding edema adjacent to the ventricular catheter and ventricular dilatation.

Subdural empyema

- purulent process in the subdural space
- pus develops rapidly in space and develops its toxic effect on a large area of the brain → it is therefore very serious with an uncertain and unfavorable prognosis
- etiopathogenesis – the source is purulent inflammation of paranasal sinuses – most often frontal, the dura is overcome by superficial thrombophlebitis
 - occurs more in younger adults and children
- clinical picture – general infectious symptoms – fever, laboratory indicators of inflammation, sepsis
 - acute symptoms of brain damage – Jacksonian or generalized epileptic seizures, hemiparesis, disorders of consciousness
- diagnosis: CT – hypodense deposits of various widths over the entire hemisphere, sickle-shaped
- classification and therapy – acute to peracute and subacute forms
 - *acute form* – urgent therapy is needed, it is almost always over the entire hemisphere
 - empty the pus with several holes (front, occ., Pariet., Temp.), drainage

- local rinsing of the area with ATB
- when the recesses do not work, we do a craniotomy
- mortality is about 50%
- *subacute form* – recently there are more common, better prognosis
 - after a stormy entry phase the condition stabilizes, pus accumulates mainly occipitally, under the influence of ATB therapy it loses toxicity and begins to manifest expansively → the second phase has symptoms of intracranial hypertension
 - lower limb paresis is at the forefront of the symptoms, at this stage it is necessary to evacuate the pus

Epidural pus in the surgical wound and osteomyelitis of the bone lobe

- surgical complications
- the body copes with several bacteria that get into the wound despite asepsis, but the osteoplastic bone lobe has a significantly reduced immunity due to a reduction in blood nutrition
- clinical picture – there are complications in wound healing, fistulas form in the scar,...
 - pus develops epidural under the bone
 - the overall condition of the patient is not affected, it is a local problem (if the dura is really well sutured, then no pathogen will get there)
- therapy – revision, reopening of the wound,...

Spinal epidural abscess

- while the dura grows to the periosteum in the brain, it is free in the spinal cord and therefore there is a natural epidural space
- the infection is usually in the dorsal space
- affects debilitated patients
- usually gets there hematogenously from the focal bearings, it is rare

Links

Source

- BENEŠ, Jiří. *Studijní materiály* [online]. ©2007. [cit. 2009]. <<http://www.jirben.wz.cz/>>.

References

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