

# Spleen diseases

## Congenital anomalies of the spleen

- **agenesis** - rare, often accompanied by other defects (congenital heart defects),
- **accessory spleen** - common, even up to 7-11% of people,
- changes in location - relatively infrequent,
  - **situs viscerum inversus** - located on the right side,
  - **wandering spleen** - insufficient fixation by the frenicolien ligament - it can fall to the navel,
  - **dystopia**,
    - an acquired defect caused by the pulling out of the ligament by the pathologically changed spleen,
    - dystopia can also be caused by fixation on another organ (e.g. it sticks to the pregnant uterus and it then pulls it down),
- **splenosis**,
  - term for multiple implantations of splenic tissue in different parts of the abdominal cavity as a result of rupture,
  - can cause ileus,
- **polysplenia**,
  - very rare
  - the original spleen is absent or small, but there are many smaller spleens in various locations,
- **perisplenitis cartilaginosa** - capsule hyalinosis,
- other - with hereditary metabolic disorders (Gaucher, Niemann-Pick...), systemic lupus erythematosus, etc.

## Inflammation of the spleen

### Acute septic pseudotumor of the spleen

- septic spleen,
- the response of the spleen to the general manifestations of bacterial infection,
- the spleen is enlarged (200-400 g, or more), soft, easily vulnerable,
- can be a source of peritonitis or bleeding,
- the longer the sepsis lasts or the more often it recurs, the larger the spleen tends to be,
- the largest is the spleen in parasitic infections (malaria), and also - typhus, plague, endocarditis, kala-azar.

### Abscess of the spleen

- either metastatic or by transfer from the surroundings,
- risk terrain - heart attack, cyst, pseudocyst, post-traumatic hematoma,
- the amount of pus - up to hundreds of ml, it is usually mature,
- omentum is usually attached to the abscess,
- clinical picture,
  - both of these units are characterized by general septic manifestations and a small local finding,
  - important symptom - induced pleurisy, higher position of the diaphragm.

### Other

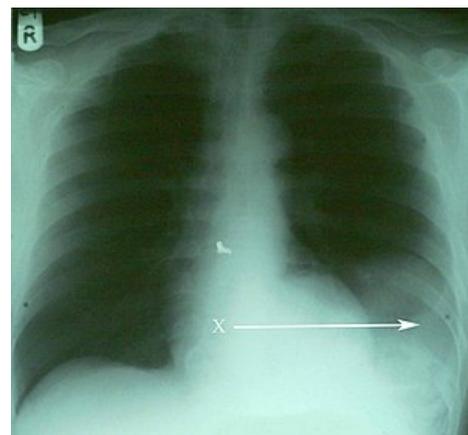
- tuberculosis - rare today,
- sarcoidosis - moderate splenomegaly (500-700 g), also very rare, often only an incidental histological finding during splenectomy for another indication,
- actinomycosis - usually as part of a disease in another location,
- parasitic splenomegaly,
  - malarial spleen - huge, prone to rupture even with minimal trauma,
  - echinococcal cyst - it is rare in the spleen, more in the lungs and liver,
- viral - e.g. with mononucleosis.

## Spleen surgery

### Preserving methods

#### Suture

- In minor ruptures, especially in children (the capsule is stronger, stitches are cut less),
- we sew atraumatically, it is advantageous to underline the contractions with a Teflon plate or to sew a piece of omentum (and a tampon) there.



Rupture of the spleen and its diaphragmatic herniation on X-ray

## Compression of the spleen with mesh

- For multiple tears, when suturing would be difficult and the bleeding is not so great.

## Resection of the spleen

- For tears that affect the upper or lower part of the spleen,
- ligation of the segmental branches in the hilum, thereby demarcating the ischemic part, which is then resected,
- it is advantageous to treat the wound surface with glue or omentum,
- non-anatomical resections – using some modern staplers.

## Implantation of spleen tissue (autotransplantation)

- When the spleen cannot be preserved,
- we try to do this with children and young people,
- most often, the tissue is implanted between the leaves of the omentum, under the peritoneum, less often outside the abdominal cavity,
- however, it is necessary to implant at least 1/3 of the original organ.

## Splenectomy

- Advances in the pharmacology of blood malignancies have slightly limited the indications for splenectomy,
- new procedures are also starting to be used (laparoscopy, etc.).

## Indications for splenectomy

- There are big changes in the indication area (as one begins to realize what the spleen is actually for), while it is practically contraindicated in children under two years of age, it is almost always performed in children (smaller postoperative risks when removing the entire spleen than when trying to preserve it),
- injury – if conservative treatment is not possible,
- hematological indications – it is initiated by a hematologist,
- many indications are relative - we must take into account whether the effect of splenectomy balances the risk of performance and asplenia, it is also performed as part of extensive radical operations for GIT malignancies,
- **hematological indications** – hypersplenism, hemolytic anemia, primary thrombocytopenia (if conservative treatment with corticosteroids fails), lymphomas,
- **indications for trauma** – severe parenchymal rupture, injury to the spleen in polytrauma, damage to hilar vessels,
- **other indications** – spleen abscess, cyst, part of resection procedures for GIT organ cancers, spleen torsion, ileus from pressure of an enlarged spleen, portal hypertension – proximal splenorenal junction.



Dark red nodules are implanted splenic tissue after splenectomy due to traumatic rupture of the spleen



CT of traumatic rupture of the spleen

## Tactics and technique of operation

- approach
  - varies according to indication,
  - for trauma - it must be fast and must ensure exploration of the entire cavity - upper middle laparotomy,
  - for planned ones - we can also look at the aesthetic point of view - subcostal incision,
- we must get rid of all the hangings of the spleen:
  - lig. pankreatikolienale (contains a. et v. lienalis),
  - lig. gastrolienale (short gastric vessels),
  - lig. phrenicolienale,
  - lig. lienorenale (thin),
- the operation is easier if we can luxate the spleen into the surgical wound,
- it is ideal to treat the splenic artery and vein only when the other hangings are treated,
  - we tie it double, treat the branches to the pancreas and try not to injure the cauda,
- surgery for portal hypertension is complicated – it is necessary to constantly check hemostasis, drain with Redon.



Spleen after splenectomy. Two-stage rupture with subcapsular hematoma

## Complications

- Early postoperative complications,
  - bleeding, local infection, intrathoracic complications (restriction of diaphragm mobility...), postoperative pancreatitis, port thrombosis...

- Late-postsplenic sepsis.

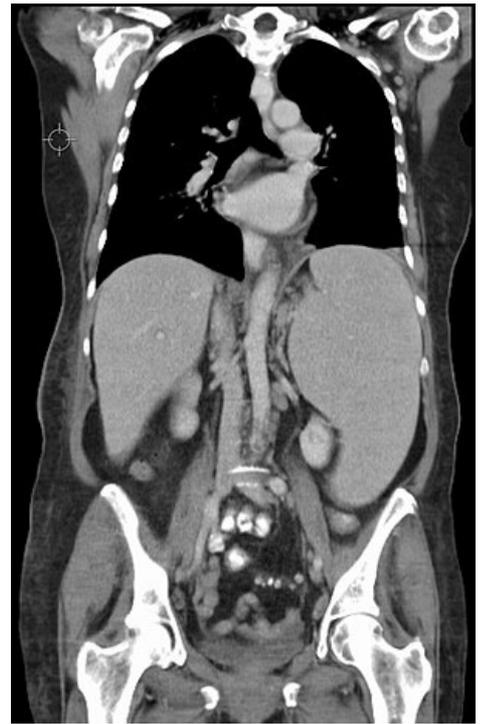
## Links

### Související články

- Spleen • Splenomegaly • Hepatosplenomegaly

### Sources

- ZEMAN, Miroslav, et al. *Speciální chirurgie*. 2. vydání. Praha : Galén, 2006. 575 s. ISBN 80-7262-260-9.
- BENEŠ, Jiří. *Studijní materiály* [online]. [cit. 6.5.2010]. <<http://jirben.wz.cz>>.



Splenomegaly in CLL