

# Limbs Amputation

- It is one of the oldest historically documented performances.
- In addition to therapeutic significance, they also had ritual or criminal significance in history.
- **Exarticulation** - amputation in the joint line.
- Amputation is performed either *open* or *closed*;
  - **open technique** - the wound is not primarily closed after amputation, one more operation is needed to create a high-quality stump.

## Guillotine Amputations

- They have always been done openly, today it is not just cutting off a limb.
- First, the skin is cut circularly, it retracts, and where it stops, the muscles are cut, they retract again, and where it stops, the bone is broken.
- It must be adjusted for prosthetics before closure.

## Lobar Amputation

- This is standard operating performance.
- We create skin flaps on the stump and invert them, sew them together.
- We must plan the placement of the flaps in advance so that all the pathological tissue is removed and the skeleton is disrupted to the planned extent.
- While in the case of an indication due to bone, the height of the interruption of the skeleton is decisive, in the case of an indication of soft tissues we create flaps and then cut off the bone above them.
- At the same time, we must strive to preserve the motility of the stump - either *myoplasty* or *myodesis* is done.
  - **Myoplasty** - we connect the muscles of a specific group with their antagonists, most often flexors with extensors - *except fingers!!*
  - **Myodesis** - reinsertion - a creation of a new muscle attachment (typically thigh adductors,...).
- We place the amputation scar outside the tread area of the stump.
- We pay special attention to the treatment of nerves - prevention of amputation neuroma.
  - The best - pulling out the nerve trunk and cutting it sharply, then let it retract spontaneously.
- Cover the bone stump with a prepared periosteal flap (for nutrition) - prevention of "crown sequestration".

## Indications for Amputations

- **Trauma** - previously often, today less due to microsurgery;
- **Infection** - long-term local processes or, conversely, acute sepsis from a local infection;
- **Necrosis** - burns, frostbite, vascular blockages;
- **Diabetic foot** - advanced condition;
- **Tumours, dysfunctions, defects of soft tissues;**
- For fractures, we use the MESS assessment.

## Complications

- Hematoma, skin necrosis, wound dehiscence, stump gangrene, swelling,...
- **Phantom difficulties**
  - *Phantom sensations* - normal after amputation before the CNS gets used to it, feeling the limb is present;
  - *Phantom pain* - neuroma, drug therapy when it doesn't help - review.

## Upper limb amputation

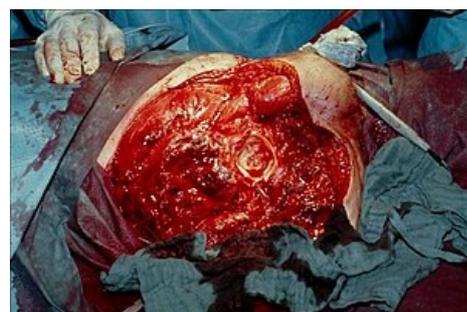
- *Interthoracohumeroscapulohumeral amputation* - complete limb with the girdle.
- *Krukenberg's "lobster claw"* - amputation in the distal third of the forearm, scissor-like separation of the radius and ulna (like eating with Chinese chopsticks).
- We must not sew flexors with extensors on the fingers - we would limit the movement of the other fingers.

## Lower limb amputation

- *Hemicorporectomy* - an exceptional procedure, removal of the entire pelvic girdle.



Clostridial myonecrosis RLL - swelling, marked cyanosis with bullae, palpable crepitus; within 8 hours after hemipelvectomy exitus lethalis



Hemipelvectomy

- *Hemipelvectomy* - removal of the lower limb with half of the pelvis.
- *Disarticulation of the hip joint* - good to remove the cartilage of the acetabulum (sequesters).
- *Femoral amputation* - very common.
- *Exarticulation in the knee joint* - very high-quality stump, swing phase of walking is preserved, good grip of the prosthesis.
- *Amputation in the lower leg* - we always resect the fibula more proximally and cut off the front edge of the tibia at the resection site - prevention of skin bruises, sometimes the two bones can be bridged with a piece of fibula.
- Amputation in the area of the leg - according to Syme - resection of the tibia and fibula perpendicularly and leaving the heel bone below them, further according to Chopart and Lisfrank.

## Links

### Related Articles

- Amputation

### References

- BENEŠ, Jiří. *Studijní materiály* [online]. ©2012. [cit. 16.2.]. <[http://jirben2.chytrak.cz/materialy/orto,trauma\\_jb.doc](http://jirben2.chytrak.cz/materialy/orto,trauma_jb.doc)>.