Management: Acute infection, implant malposition, hematoma, instability, implant loosening, …

Dr Caufriez Benoît,
orthopaedic surgeon

CHU AMBROISE PARÉ

Plan

- Hematoma
  - Subcutaneous
  - Compressive hematoma
- Post operative infections
  - Subcutaneous infection
  - Dehiscence of wound, subcutaneous abscess
  - Under fascia
  - Intervertebral disc infection
  - Meningitis
  - Epiduritis
- Implant loosening and instability
- Conclusions

EUROSPINE SPINE TANGO

Hematoma

Hematoma

- Subcutaneous (fascia-subcutaneous fat)
  - signs of local tension
- Extra-dural space (Between muscle-dural)
  - symptoms of nervous compressions
- Subdural space
  - tends to extend in height on several levels

Hematoma

- Frequence:
  - 2%, all surgeries of the spine combined
- Risk factors:
  - Coagulopathy, anticoagulants, antiagregant , (even if stopped according to the rule of the art), types of surgeries

Hematoma

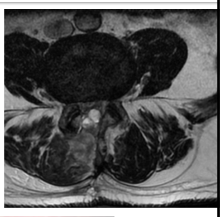
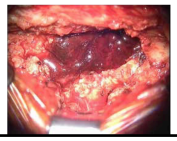
- Presentation:
  - Pain
    - Lumbar, dorsal, cervical +/- radiculalgia
    - Red flag: multiradicular, bilateral, increases in intensity, new neurological signs
  - Sphincter disorders
    - morphine vs. hematoma
    - sensitivity of the perineum
    - sphincter contraction.
  - Neurological disorders
    - Motor not in first
  - General signs: pallor, anemia, shock are rare

Hematoma

- Reach based on level
  - Lumbar posterior approach: urinary retention, paralysis L4 L5 S1, pain, pain, anesthesia of perineum
  - Lumbar anterior approach: acute abdominal syndrome, shock
  - Thoracic: paraparesis, paraplegia, rapid sphincter disorder
  - Cervical: Paraparesis of 4 members, breathing disorder, brachialgia

Hematoma

- Exams
  - MRI (choice!)
    - Clinical disorder
  - CT
    - double-edged sword
  - EMG
  - RX
  - Urodynamic test

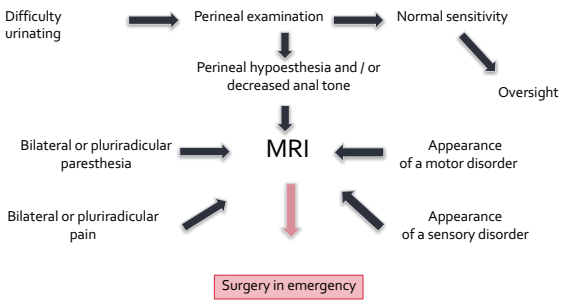
Hematoma

- Surgery
  - No delay! Diagnosis = surgery
  - What about the 6 hours myths
  - Remove the hematoma
  - Dural space tense => subdural hematoma
- Rigorous hemostasis

Hematoma

- Corticotherapy?
  - Bracken (1990) but increases the risk of infection
- Drainage?
  - not reduce the risk of compressive hematoma (Scuderi 2005, von Eckardstein 2015, Kanayama 2010)

Hematoma



Post operative infections

Post operative infections

The key: Multidisciplinary management

Post operative infections

- It can spread from the cutaneous plane to the nervous system or all the plans at the same time.
- Risk factors
  - Infectious ATCD (boil, abscess etc)
  - Diabetes
  - Corticotherapy
  - Smoking
  - Immunosuppressant

Post operative infections

- Frequency: 5% all surgeries combined
  (Smith JS. 2011, Kurtz SM. 2012, Chaichana KL. 2014)
- Types :
  - Subcutaneous infection
  - Dehiscence of wound, subcutaneous abscess
  - Under fascia
  - Intervertebral disc infection
  - Meningitis
  - Epiduritis

Post operative infections

- Subcutaneous infection
  - The least serious form
  - Redness and follow-up of the wound
  - Local care and ATB
  - Smears have no interest (contaminate)

Post operative infections

- Dehiscence of wound, subcutaneous abscess
  - Surgical trimming
  - Bacteriological samples
  - Local care and antibiotherapy

Post operative infections

- Under fascia
  - Surgical trimming
  - Bacteriological samples
  - Local care and antibiotherapy

Never minimize a localized infection, it is sometimes "the tree that hides the forest"

Post operative infections

- Intervertebral disc infection

May be the result of subcutaneous infection or occur without cicatricial abnormality. (85-86)

  - Presentation:
    - Intense, permanent, diffuse, nocturnal low back pain
    - New mechanical low back pain than before surgery
    - Fever, sweating, spinal stiffness
  - Timing 3 to 6 weeks after surgery

Post operative infections

- Intervertebral disc infection
  - Diagnosis:
    - Delay!
    - Rx
    - CT Scan
    - MRI (+/- C) hyper T1 et T2
    - Bio: CRP > 100, GB > 10000
    - CT scan puncture (bacteriology)

Post operative infections

- Intervertebral disc infection
  - Treatment:
    - Corset
    - Targeted antibiotic 3 months
  - Management:
    - Clinical control
    - Biological control
    - MRI at 3 and 6 months
  - Consequences:
    - Arthrodesis when healing
    - Vertebral deformation

Post operative infections

- Meningitis
  Consequence of a dural breach or epiduritis
  - Presentation:
  - Rarely picture of primitive meningitis:
    - stiffness of the neck, intessif headache, photophobia, pyrexia
  - But clinical more incidious:
    - moderate pyrexia (38-38.5), moderate headache, deterioration general state

Post operative infections

- Meningitis
  - Diagnosis:
    - CT scan and lumbar puncture
  - Treatment:
    - Antibiotherapy until biological, clinical and CSF normalization
  - Consequences : Mental disorders, decrease concentration and intellectual speed.

Post operative infections

- Epiduritis
  - Presentation
    - moderate pyrexia (38-38.5), moderate headache, general state deterioration, neurological disorders, radiculalgia.
  - Diagnosis:
    - MRI
  - Treatment:
    - Neurological disorders => Surgery et antibiotherapy
    - No neurological disorders => antibiotherapy

Post operative infections

- Subdural empyema

  Either spontaneous or the consequence of epiduritis
  - Presentation:
    - moderate pyrexia (38-38.5), neurological disorders
  - Diagnosis:
    - MRI
  - Treatment:
    - Surgery if neurological disorder
    - Antibiotherapy 3 months

Post operative infections

- Material infection
  - Signs of acute infection
    - Surgery: surgical trimming, washing, bacteriology
    - Antibiotherapy (3 or 6 months)
    - Clinical and biological monitoring

Post operative infections

- Prevention of infection.
  - preoperative:
    - antiseptic shower
    - no shaving of the operated area
  - intraoperative
    - Prophylactic antibiotic therapy
    - a team sensitized to the aseptic in the operating room
    - checking the sterility of the material
    - ...
  - postoperative
    - Wound monitoring
    - blood monitoring

Conclusions

Conclusions

- We all have complications
- Prevention
  - Infection
  - Biomechanics
  - explain the risks to the patient
- If complications
  - Inform the patient
  - proactive management

Conclusions

- Multidiciplinary management:
  surgeon, anesthesiologist, internist, infectiologist, radiologist, microbiologist, etc …