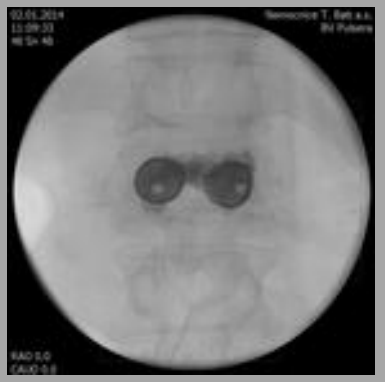
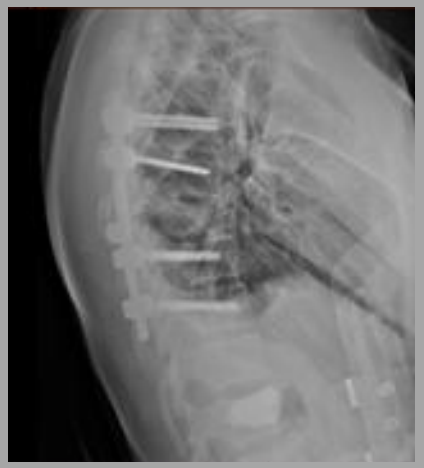
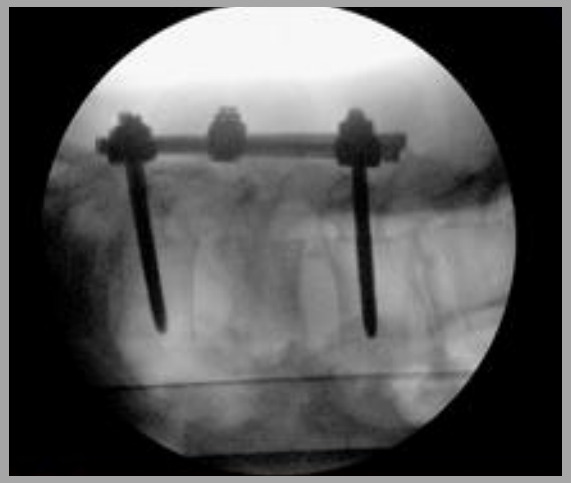


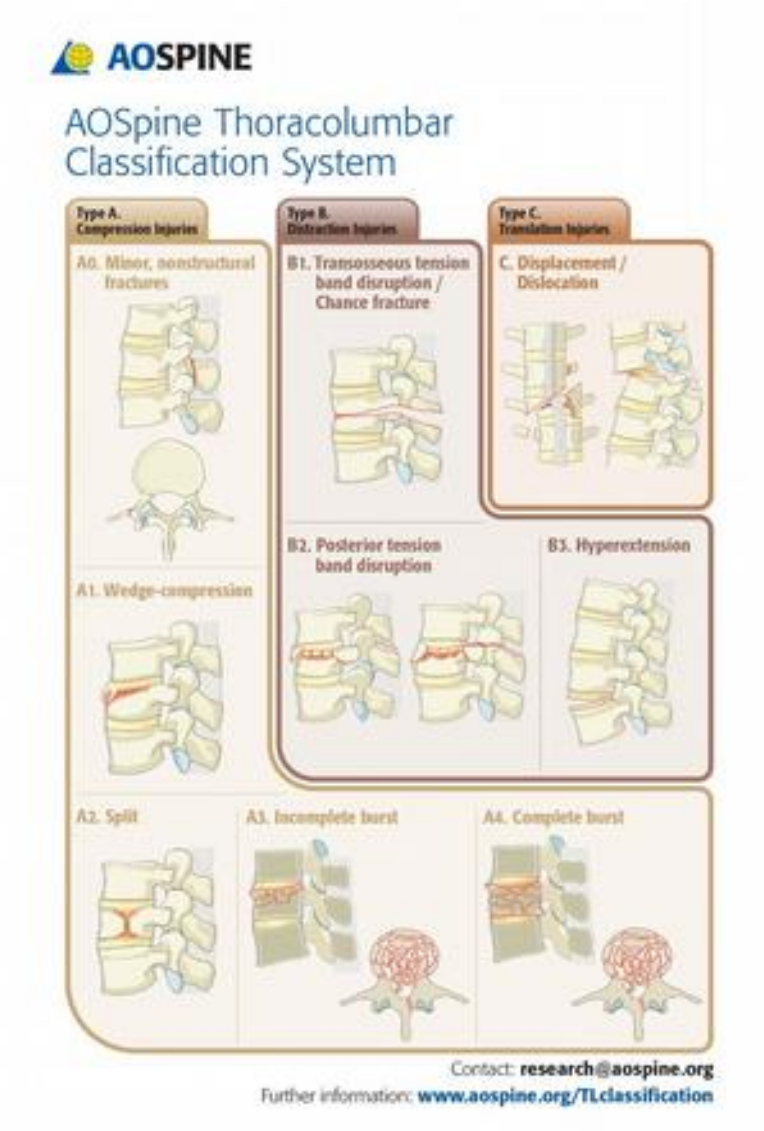
Augmentace obratlového těla jako alternativa k stabilizaci u zlomenin Th - L páteře

Jurek P., Linzer P., Mojak P, a kol. NCH
KNTB Zlín





Zlomeniny Th/L páteře

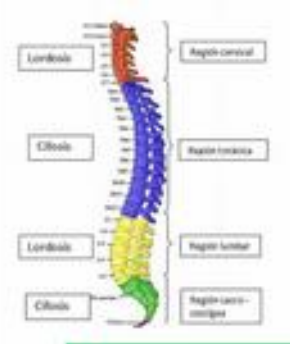


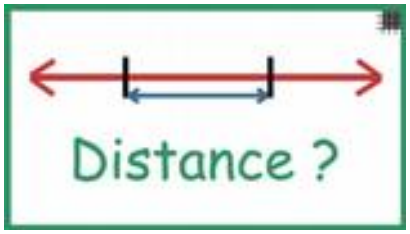
Řešení

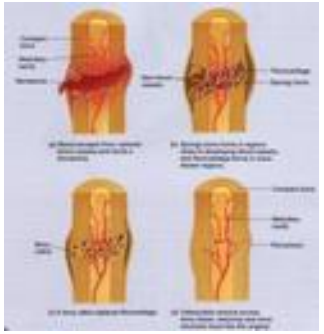
- Konzervativně
- Operačně

Cíle operační léčby zlomenin obratlových těl dle AO

- Obnovení anatomické křivky
- Dekomprese páteřního kanálu
- Nejkratší možná fúze
- Zajistit kostní hojení
- Minimalizovat riziko iatrogeního poškození

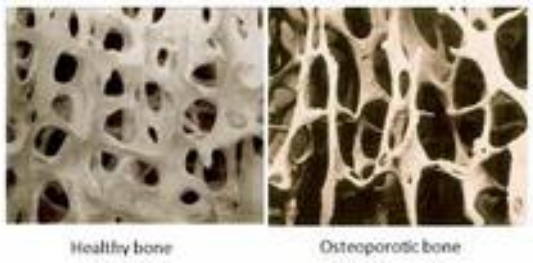


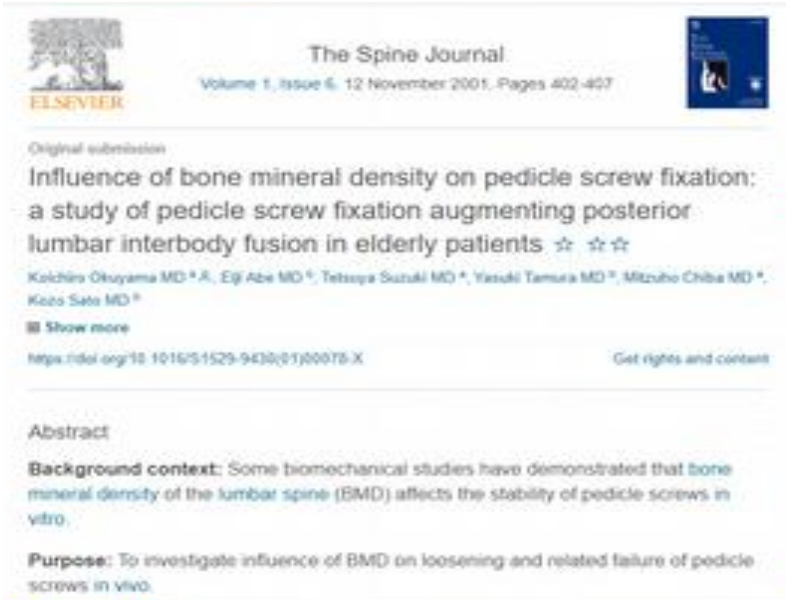




U starších paceintů

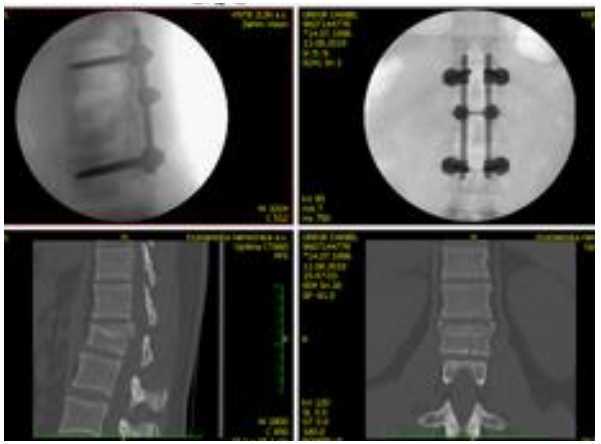
- Osteoporóza
  - V České republice osteoporóza postihuje 15 % mužů a 33 % žen ve věku nad 50 let a 39 % mužů a 47 % žen ve věku nad 70 let. Celkově osteoporóza postihuje více než 5 % obyvatel.
    - Vznik zlomenin
    - Zhoršení biomechanických vlastnosti transpedikulárních fixací

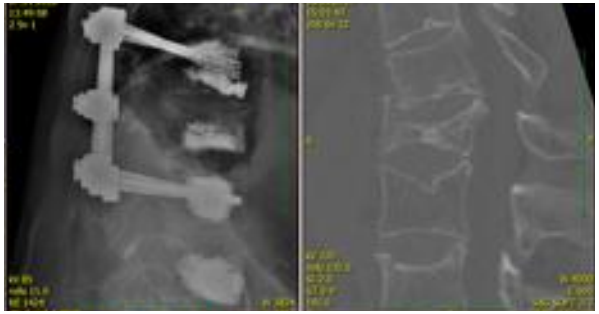


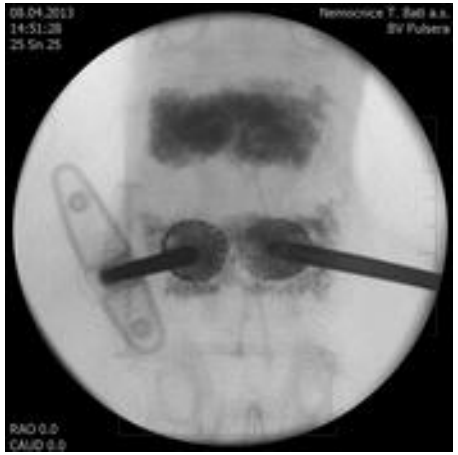


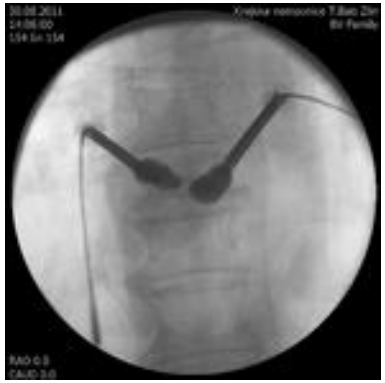
Možnosti operační léčby

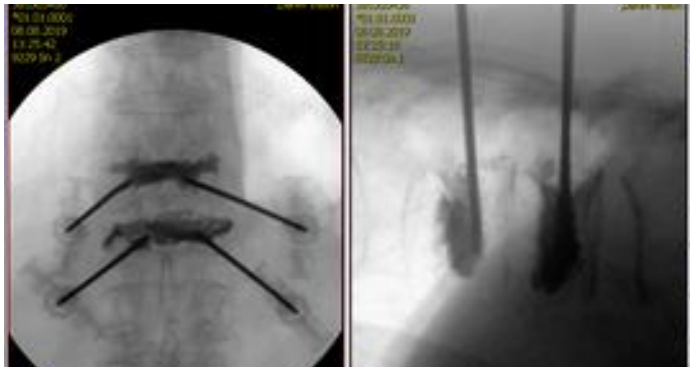
- Fixace – bez či s augmentací
- Plastika obratlového těla
  - Vertebroplastika
  - Stentoplastika (VBS)
  - Kyfoplastika





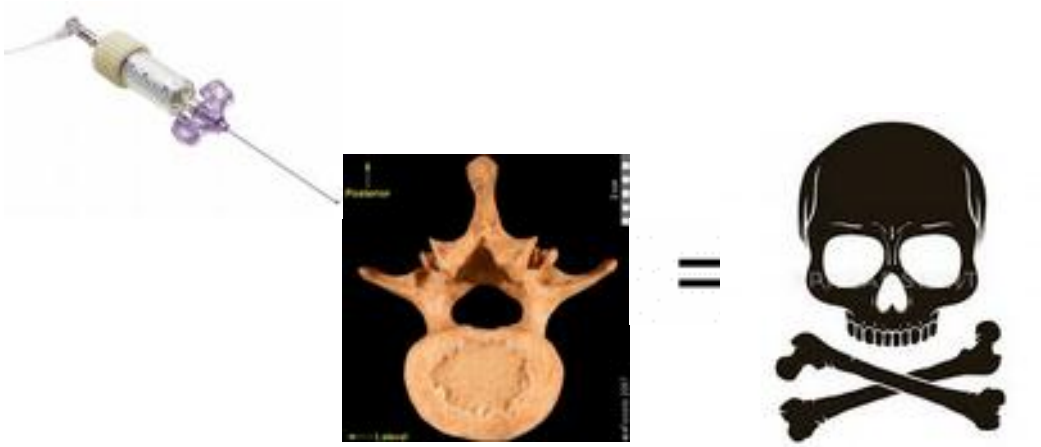






Patří cement do obratlového těla?

- Nepatří



- Ale za určitých okolností…….
  - » Osteoporóza +-
  - » Prevence strukturální deformity +
  - » Ukotvení šroubů
  - » Analgetický efekt
  - » Benefit pro pacienta

Cement

- Vertebroplastika - originally described by Deramond et al. in 1987 for the treatment of an aggressive vertebral haemangioma
- *Totální endoprotéza kyčle - Cementovaná náhrada – od* 1962, Sir John Charnley
  - Starší
  - Mladí

Review


Cochrane
Library
Cochrane Database of Systematic Reviews
Percutaneous vertebroplasty for osteoporotic vertebral compression fracture (Review)
Buchbinder R, Johnston RV, Rischin KJ, Homik J, Jones CA, Golmohammadi K, Kallmes DF
www.cochranelibrary.com
WILEY


Cochrane
Library
Cochrane Database of Systematic Reviews
Pedicle screw fixation for traumatic fractures of the thoracic and lumbar spine (Review)
Cheng LM, Wang JJ, Zeng ZL, Zhu R, Yu Y, Li C, Wu ZR
www.cochranelibrary.com

Doporučení

- Fixace
  - Evidence from randomised trials **was insufficient for research ersto determine relative effects on patient function, activities of day living, and pain associated with various pedicle screw** techniques for traumatic fractures of the thoracic and lumbar spine. In the absence of robust evidence to support fusion, it is important to factor in the risk of long-term donor site pain related to bone harvesting in deciding whether to use this intervention.
  - **Surgical versus non-surgical treatment for thoracolumbar burst fractures without neurological deficit**
  - The contradictory evidence provided by two small and potentially biased randomised controlled trials is insufficient to conclude whether surgical or non-surgical treatment yields superior pain and functional outcomes for people with thoracolumbar burst fractures without neurological deficit. It is likely, however, that surgery is associated with more early complications and the need for subsequent surgery, as well as greater initial healthcare costs.
- Vertebroplastika
  - We found high- to moderate-quality evidence that vertebroplasty **has no important benefit in terms of pain, disability, quality of life or treatment success in the treatment of acute or subacute osteoporotic vertebral fractures** in routine practice when compared with a sham procedure. Results were consistent across the studies irrespective of the average duration of pain.

Inclusion criteria

- A)
  - Severe back pain refractory to analgesic medication (analgesics or NSAIDs) for **at least 4 weeks and no longer than 1 year**
  - Vertebral compression fracture with 10%-70% loss of vertebral body height on Xray of the spine
  - Focal tenderness on physical examination at the level of vertebral fracture
  - Vacuum phenomenon or bone marrow oedema of the vertebral fracture on MRI
  - Osteoporosis (T-score less than -2.5) on bone densitometry

- B)
  - Confirmed osteoporotic vertebral compression fracture at the thoraco-lumbar junction (T12-L1)
  - **Exclusion criteria - None reported**

Vertos IV

- Vertebroplastika vs. Shame procedure – dvojitě slepá studie – definováno jako studie pro bolestivé akutní osteoporotické zlomeniny.
  - **Doba od vzniku syptomů po léčbu**
    - 29-52 dnů u vertebroplastik
    - 24-51 dnů u srovnávací skupiny

Vertos IV

- **Hlavní výsledky**
  - Nebyl nalezen signifikantní rozdíl v poklesu VAS mezi skupinami ve sledovaných intervalech (den, týden, 1,3,6 a 12 měsíců po výkonu)
  - Bez rozdílu v kvalitě života

- **Vedlejší výsledky**
  - Po roce VAS nad 5
    - Po vertebro 20%
    - Bez vertebro 41%

  - Progresivní ztráta výšky obratlového těla po roce
    - Po vertebro 8%
    - Bez vertbero 45%

  - Pokles výšky má prokazatelný korelát s vyšším VAS

Časné provedení

- Do tří týdnů od traumatu
- Bolesti VAS přes 7
- Hospitalizovaní pacienti

- ASAP
- Imobilizovaní pacienti
- Hospitalizovaní
- V bloku pokud pacient zvládne

- **Statisticky významná redukce bolesti**
- **Časná vertikalizace**
- **Prevence vzniku deformity**

EBM Analysis: General medicine

OPEN ACCESS

Cochrane vertebroplasty review misrepresented evidence for vertebroplasty with early intervention in severely affected patients

William Clark,[1] Paul Bird,[2] Terrence Diamond,[2] Peter Gonski,[3] Val Gebski[4]

Abstract

The Cochrane vertebroplasty review of April 2018 was replaced with an updated version in November 2018 to address complaints of errors in analysis. The updated version continues to misrepresent the evidence supporting early intervention with vertebroplasty for patients with uncontrolled, severe pain and fracture duration <6 weeks. The VAPOUR trial is the only blinded trial of vertebroplasty restricted to this patient group. It showed the benefit of vertebroplasty over placebo, particularly when the intervention occurred within 3 weeks of fracture. The Cochrane vertebroplasty review has ignored the positive outcomes in the VAPOUR trial. Open randomised trials of fractures <6-week duration support the positive findings of the VAPOUR trial. This is not described in the Cochrane review. The VAPOUR trial is clinically heterogeneous from other blinded trials. Cochrane protocol stipulates that clinically heterogeneous trials be described separately, as independent evidence, and not combined in analysis with dissimilar trials. Failure to observe this represents a serious protocol breach in the Cochrane review.

Complaint to Chief Editor of Cochrane

despite opiate analgesia. Eligible patients had fractures for a <6-week duration causing severe pain, uncontrolled by medical therapy including opiates. Vertebroplasty was offered without further delay. 79% of patients in the VAPOUR trial had the fracture duration ≤3 weeks at the time of intervention. This is the only blinded trial to enrol hospitalised inpatients. All patients required severe pain for enrolment, defined as the numeric rated score (NRS) of 7/10 or more. The primary outcome measured the proportion of patients who converted to a mild pain score (NRS <4/10) at 14 days. This favoured vertebroplasty over placebo at 14 days and at every other time point to 6 months (figure 1). Vertebroplasty reduced hospital stays and provided clinically significant reductions in the Roland Morris Disability score at 1, 3 and 6 months. **Mean fracture duration at time of vertebroplasty was 2.8 weeks.**

VERTOS4[7] recruited outpatients referred for radiography, not for vertebroplasty. Protocol[7] states 'all patients, 50 years of age or older, referred for an X-ray of the thoracic and/or lumbar spine, receive a short clinical questionnaire'. Patients who had a fracture, VAS pain ≥5/10 and pain duration ≤9 weeks (at the time of radiograph), were invited to provisionally enrol. The amended time of radiography is accessible with trial publication[7]

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[2]Department of Medicine, St George and Sutherland Clinical school, University of New South Wales, Kogarah, New South Wales, Australia
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[4]Department of Biostatistics, Clinical Trials Centre, University of Sydney, Sydney, New South Wales, Australia

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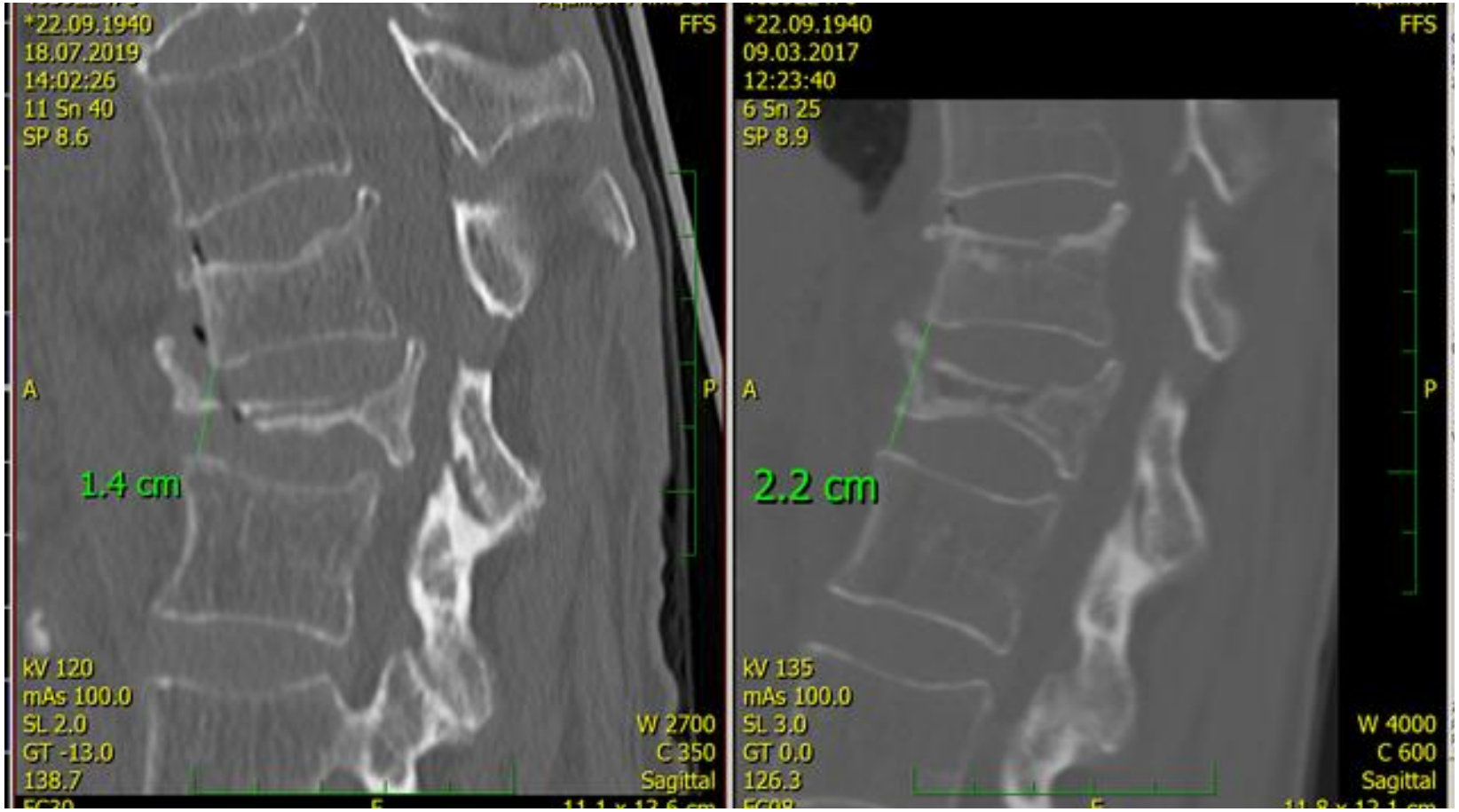
Ležící pacient

- Riziko pneumonie
- Trombembolické choroby
- Dekubity
- Močové infekce
- Ztráta svalové síly

Výsledky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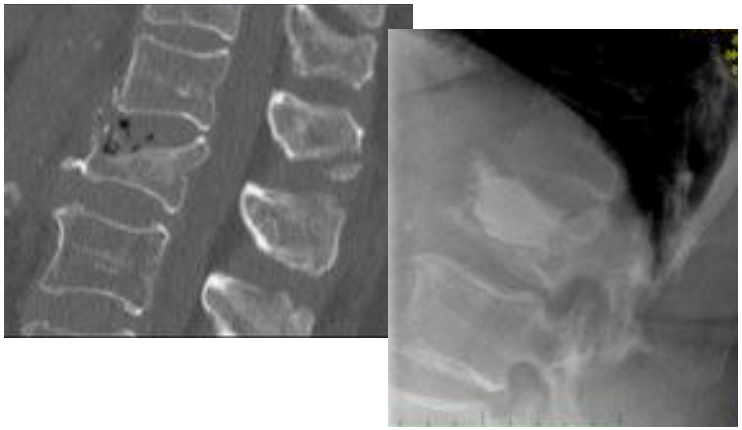
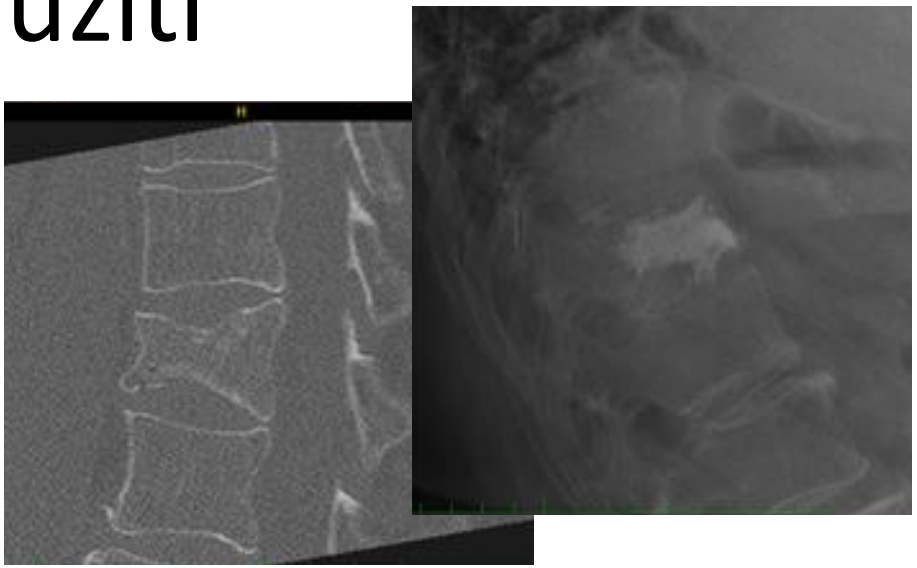
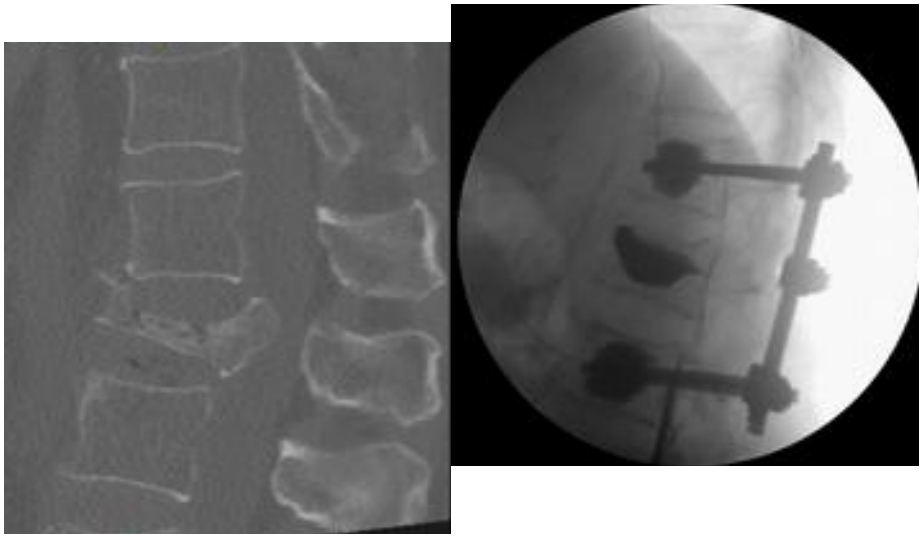
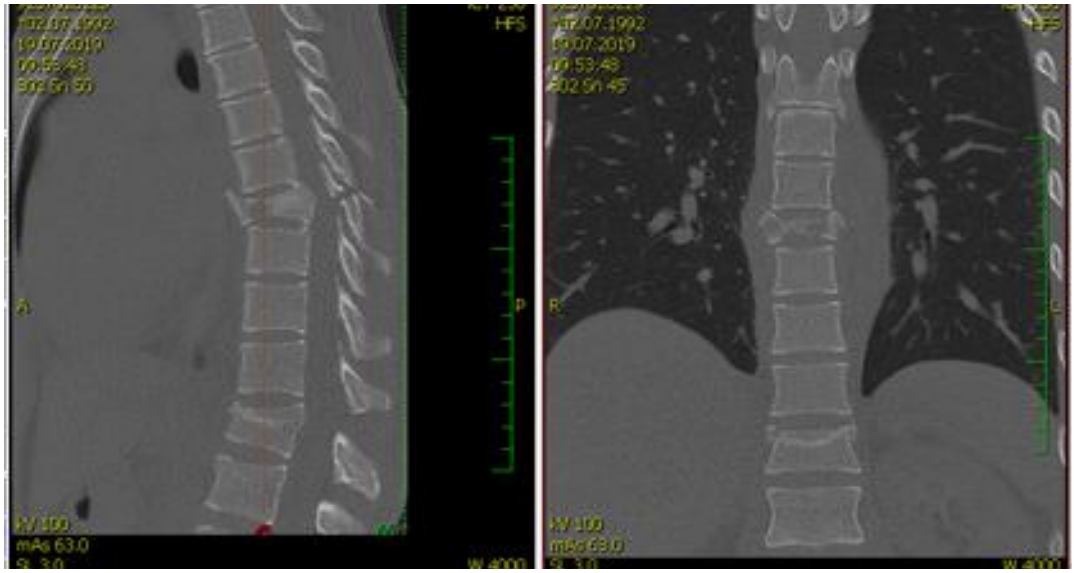
Využití

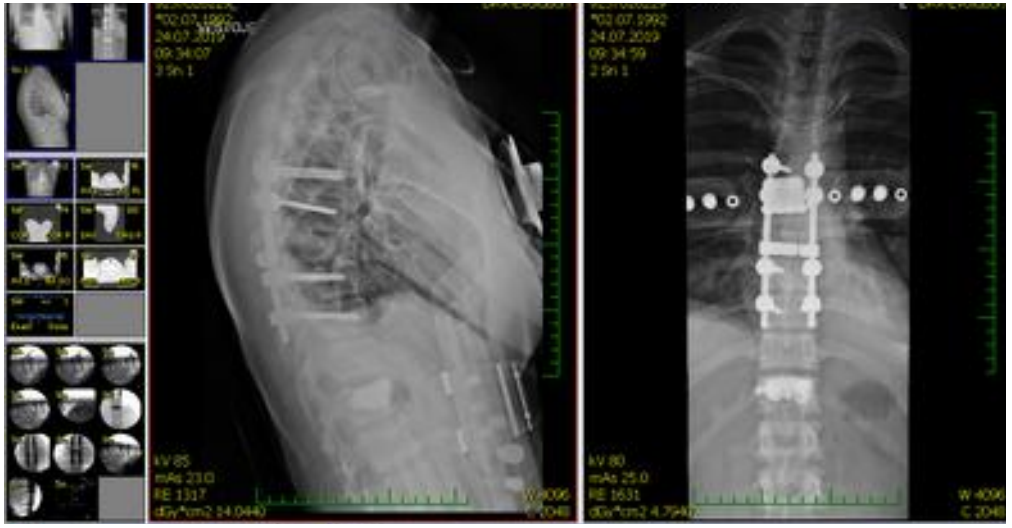






Augmentace či dlouhá fixace?





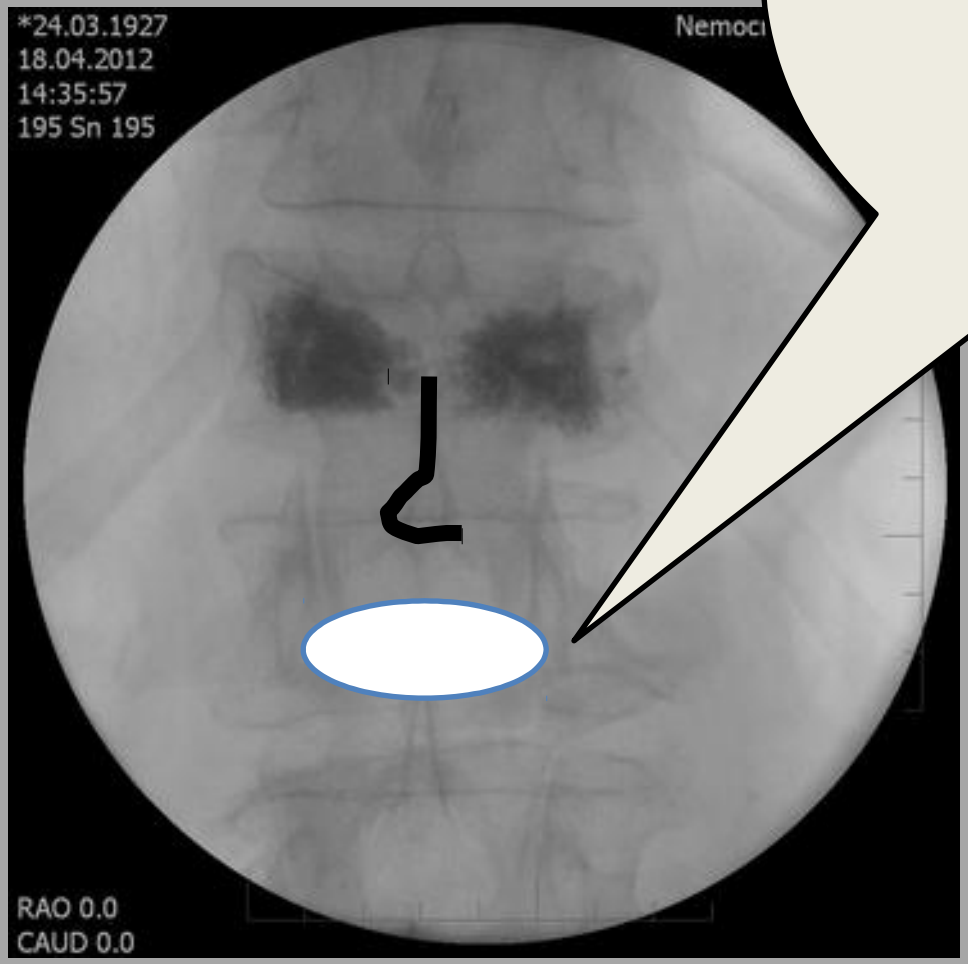
Zkušenosti

Na našem pracovišti se augmentace používá od 2006

- Vertebroplastika
  - 2016 71
  - 2017 111
  - 2018 105
- Augmentované fixace
  - 2016 28
  - 2017 30
  - 2018 32

Závěr

Augmentace obratlových těl jako řešení osteoporotických fraktur má své nezastoupitelné místo v spondylochirurgických indikacích a při individuálním zvážení a správné indikaci může tato technika přinést benefit i při řešení obratlových zlomenin mladších pacientů bez známek osteoporózy.



Děkuji za pozornost