

imeters) in PA was $1,9 \pm 2,5$ (left), $3,7 \pm 2,8$ (center), $2,3 \pm 2,0$ (right) and in LL $2,1 \pm 2,8$ (anterior), $4,1 \pm 3,4$ (center) and $1,5 \pm 2,8$ (posterior) (very significant $p=0.0026$). 4 patients (11,7%) had a new vertebral fracture (all in the adjacent vertebra) during follow-up. No device migration was noted.

Conclusion: During long-term follow-up, nitinol endovertebral prosthesis-assisted vertebroplasty is effective to achieve and maintain pain relief and height restoration.

9:00 AM

Abstract No. 196

Efficacy of Discogel® radiopaque gelified ethanol + etilcellulose in the treatment of contained disc herniations: A preliminary experience

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Purpose: All the percutaneous procedures employed for the treatment of contained disc herniations, while having high success rates, result in a reduction of the volume of the intervertebral disc; this may cause an increase in degenerative disease at the same level. The aim of this study is to provide the efficacy of Discogel® radiopaque gelified ethanol + etilcellulose (Gelscom®, France) in the treatment of painful disc herniations, by means of pain relief and maintaining the height of the intervertebral disc.

Materials and Methods: Thirty-three patients (18 male, 15 female, av. age: 49.4) with lumbosacral pain due to contained disc herniations were selected for treatment with percutaneous intradiscal injection of Discogel. Diagnosis was confirmed by MRI in all patients. All procedures were performed under fluoroscopic guidance and with local anesthesia. Twenty gauge needles were used and 8ml of ethanol gel + etilcellulose were injected for each intervertebral disc. Clinical evaluation, assessment of pain by mean of a 11-points visual analogue scale (VAS, 0–10) and of function by means of the Oswestry disability scale (ODI 0-50) was performed at baseline and at one month after the procedure. CTMS checks has been performed immediately after the procedure and at one month. The volume of the intervertebral disc was calculated using Advantage windows WS (GE, USA).

Results: A total of 37 intervertebral discs were treated in the 33 patients enrolled in the study. Baseline pain was 8.2 ± 1.7 , baseline ODI was 36.1 ± 10.4 . At one month, pain was 2.8 ± 2.2 ($p<0.01$), while ODI was 16.5 ± 2.8 ($p<0.01$). We reported an increase of 41.9% in the volume of the intervertebral disc (av. volume before: 8.1 ± 3.2 , after: $11.4 \pm 2.6\text{cm}^3$) ($p<0.01$). We only had one asymptomatic canal leakage.

Conclusion: From our preliminary study, the percutaneous intradiscal injection of Discogel® is an optimal therapy for symptomatic patients with contained disc herniations. Furthermore the etilcellulose, through the formation of a soft prosthesis, ensures the maintenance of disc height.

9:12 AM

Abstract No. 197

The complications and speculation about the mechanism of production after percutaneous kyphoplasty (with analysis of 175 cases)

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Purpose: To analyse and summarize the complications of percutaneous kyphoplasty (PKP) in 175 patients with painful osteoporotic vertebral compression fractures, and to speculate on its possible mechanism of production.

Materials and Methods: Retrospective data of 175 patients with painful osteoporotic vertebral compression fractures treated with PKP were analysed about the clinical signs and symptoms and CT or/and MRI findings after the procedure. There were 30 male and 145 female patients, aged from 36- to 92- years-old (median age: 69).

Results: PKP was performed in 175 patients with 214 vertebrae. Cement leakage was found in 58 cases with 62 vertebrae, and pulmonary embolism occurred in 3 cases. Besides, nerve root injury, intercostal neuralgia and excessive blood loss happened individually. The leakage rate of PMMA was 34.3% (60/175) according to the number of patients, or 29.9 % (62/214) according to the number of vertebrae. After systemic management, the clinical symptoms were basically disappeared in all other patients except that 2 patients died after PKP due to the pulmonary embolism.

Conclusion: PMMA leakage is the most common complication in PKP as PVP. Although most leakage doesn't cause any symptoms, there still is life-threatening risk. The probable mechanism of complication resulting from PKP may lie in the cement leakage secondary to easy rupture of vertebral body and pedicle caused by the increase of working pathway and complexity of the procedure, and in other factors such as the comorbidity, need for general anesthesia and long immobilization after PKP.

9:24 AM

Abstract No. 198

Osteoporotic rabbit lumbar spine model following radiofrequency ablation: Evaluation of physical properties and micro CT-histopathologic correlation

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Purpose: Animal models are important tools to develop treatment strategies for osteoporosis in humans. Radiofrequency (RF) ablation has proved to be a useful therapeutic option in patient with bone tumor. This experimental study was undertaken to investigate whether bone RF ablation enabled to generate osteoporotic rabbit lumbar spine model, to evaluate the change in physical properties of rabbit vertebrae after RF ablation, and to assess the accuracy of micro-CT at detecting the RF-induced thermal bone injury.

Materials and Methods: The compression load was measured in rabbit lumbar spines. Six spines were controls. RF ablation was randomly done by inserting a 17G 1cm-exposed cooled-tip RF electrode through a 14G bone biopsy needle in spines from L4 to L7. RF energy was applied for 3–5 minutes. RF ablation was performed under the CT-fluoroscopic guidance. Both lumbar spines before and after RF ablation were scanned with micro-CT using a 50µm resolution, and the ablated spines underwent histopathologic examination.

Results: There was a significant difference in the ultimate stress (MPa) between control and ablated lumbar spines from L4 to L7