Same evaluations have been made later dividing the whole group in 4 sub-groups: patients with lumbar curves (66), thoracic curves (68), patients with age ranging between 14 and 18 (45) and between 6 and 13 (89).
Results Our data showed that a real correlation between hump and curve severity, in cobb degree, exists (significativity was lower than 0.001 at the beginning and end of the treatment): higher curve severity corresponds to an higher hump dimension. Furthermore the effectiveness of the orthoses treatment to correct the curve severity and remodel the hump was highlighted. Treatment starts with a cobb angle of 29.41 ± 8.53 and ends at 19.29 ± 9.84. Hump begins with a value of 11.61 mm ± 5.59 mm and finish at 6.19 mm ± 4.61mm. It was also noticed that the hump correction is higher than the correction of the curve registered in Cobb degrees. In particular, this is more noticeable: (1) in thoracic curves: percentage average correction in cobb degrees was -30.07 ± 25.31 while hump was -45.95 ± 38.02; Wilcoxon test shows that thedifferences are significant ($p = 0.01$); (2) in patients aging between 6 and 13: percentage average correction in cobb degrees was -34.99 ± 27.68 while hump was -43.22 ± 45.29; Wilcoxon test shows that the differences are significant ($p = 0.019$).
Conclusions The hump is the effect of the rotation of the scoliosis curve. At thoracic level hump is averaged by ribs and, for this reason, there is a less important correlation with the increase of spine deformity. Orthoses treatment of idiopathic scoliosis fixs the spine deformity and, also, is very effective to remodel the hump. This phenomenon is more noticeable at backbone level where the main action is performed to the rib cage.

MINIMUM 25-YEAR RESULTS AND QUALITY OF LIFE AFTER LUMBAR DISCECTOMY

M. Mariconda, O. Galasso, V. Secondulfo, G. Della Rotonda, C. Milano

Dipartimento di Ortopedia, Università Federico II (Naples-IT)

The surgeon-oriented evaluation has been used traditionally to assess the long-term results of a discectomy for lumbar disc herniation, but in recent decades patient-based outcome instruments have gained increasing importance in this evaluation. A comprehensive patient-oriented evaluation should include measurements of disability along with a reliable evaluation of the general health status. There is few data from validated measuring instruments on the very long-term outcome of lumbar discectomy.A follow-up study was carried out to assess the minimum 25-year outcome of discectomy for lumbar disc herniation. We conducted a follow-up study of 201 patients on an average of 27.8 years after lumbar discectomy (range: 25–32 years). The patient-oriented assessment included: an SF-36 questionnaire, Oswestry Disability Index, Cumulative Illness Rating Scale, and a study-specific questionnaire dealing with daily life activities and satisfaction with the surgery. Factors significantly influencing the SF-36 summary scores and the ODI were also checked at multivariate regression analysis. The SF-36 physical scales and summary scores were similar to the normative values for healthy subjects and were better than the scores of patients with untreated sciatica with respect to reported pain. The mean Oswestry disability score was 17.5. Satisfaction with surgery was expressed by 181 of 201 patients (90%). The sudden postoperative relief from pain positively predicted most of the outcomes, whereas comorbidities were negative prognostic factors at the regression analysis. In conclusion, patients who had undergone lumbar discectomy a minimum of 25 years earlier have a satisfactory self-reported health-related quality of life and less pain than non-surgically treated subjects.

VESSEL-X® KYPHOPLASTY FOR TREATMENT OF THORACOLUMBAR SPINE FRAGILITY FRACTURES: TWO-YEAR FOLLOW-UP OF 110 CONSECUTIVE PATIENTS

R. Iundusi[1], G. Ferraro[2], G. Cannata[1], M. Portaluri[2], V. Tempesta[1], U. Tarantino[1]

[1]Orthopaedics and Traumatology Department, PTV Hospital, University of Rome "Tor Vergata" (Rome-IT); [2]Orthopaedics Department, "Card. G. Panico" (Tricase-Lecce-IT)

Objective The aim of this study was to evaluate the reduction of pain, complications and results of Vessel-X® kyphoplasty, also known as vesselplasty, in the treatment of osteoporotic vertebral compression fractures (VCF) not responder to medical treatment.
Material and Methods From March 2006 to December 2007 we treated 136 VCFs in 110 patients, 81 women e 29 men (mean age 68 years). Procedures were managed by one or two C-arm fluoroscopic techniques. The highest level was D6 while more common were levels at the thoraco-lumbar junction. We always performed bilateral transpedicular minimally invasive approch using Vessel-X®, size 20 mm, with low-viscosity bone cement mixed with Osteo-G® (calcium phosphate). Pain was evaluated with Visual Analog Scale (VAS range, 0–10) and 36-item Short-Form Health Survey (SF-36) assessed at baseline, the day after the procedures and after 1, 6, and 24 months. All patients received an antiosteoporosis medical treatment, pain medication, and physiotherapy.
Results All patients have consistently shown a significant decrease of pain. In no case we reported pedicular or intracanal leaks of cement. Intradiscal leakages have happened in 9 levels (6.6% of total) but without local or peripheral symptoms. The average amount of cement injected, for each vertebral body, was 5cc (range 3.5–7 cc). Another vertebral collapse, within the first year after operation, took place in 14 patients, but only in 5 cases (3.6% of total) was an adjacent level.
Discussion During vesselplasty an artificial "vessel" system, the Vessel-X®, suitable with three sizes (20, 25 and 30 mm), is introduced into the vertebral body to achieve unilateral (or bilateral) transpedicular (or extrapedicular) augmentation after which low-viscosity bone cement, mixed with calcium phosphate, is injected into the vertebral body: the Vessel-X® are expanded to their predetermined configuration and a few bone void filler material penetrates through the "vessels" interdigitating the vertebral body, restoring the vertebral height, and reducing one of the most common adverse effects of other minimally invasive techniques such as cement leakage out of the vertebra.
Conclusions Vesselplasty is a safe and effective, minimally invasive procedure for relief of pain associated with VCFs, and improves mobility decreasing the potential risks associated with inactivity. We remind the importance of a global approach to the osteoporotic patients: the best treatment remains early diagnosis evaluating bone remodelling markers, lumbar and femoral Dual-energy X-ray absorptiometry (DEXA), thoracic and lumbar X-ray and risks fracture assessment to ensure an individual and best appropriated therapy as specific as possible.

PERIPROSTHETIC ELECTROMAGNETIC FIELDS GENERATED BY TITANIUM AND TITANIUM-BASED ALLOYS AS A NEW CAUSE OF SPINAL FUSION FAILURE

V. Denaro, N. Papapietro, S. Barnaba, L. Ruzzini, A. Sgambato, A. Cittadini

Università Campus Bio-Medico (Rome-IT)