# Three Years Experience with Standolone Kyphoplasty and Calcium Phosphate Cement in Traumatic Fractures

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**STUDY DESIGN:** Prospective study to investigate the clinical and radiological results of balloon kyphoplasty and cement augmentation with Calcium Phosphate in traumatic fractures.

**OBJECTIVES :**Evaluation of radiological and computer tomography results, VAS, Roland Morris score and complications in 28 patients with acute traumatic compression fractures type A, treated with a standalone balloon kyphoplasty and cement augmentation with calcium phosphate (Calcibon$^{TM}$). Follow-up time at a mean of 30 month (24-37 months).

**METHODS:** From August 2002 to August 2003, 28 patients with traumatic compression fracture (Magerl type A) without neurological deficit consecutively underwent 33 balloon kyphoplasties with Calcibon$^{TM.}$ We report here the pre, postoperative and the follow-up results (12, 24 months), applying the visual analogue scale VAS (0-10) for pain rating, the Roland Morris (0-24) disability score, CT-scan examination, detailed radiographic evaluation of vertebral body deformity and segmental kyphosis measurement. The preoperative X-ray measurements, VAS and the 7 days Roland Morris scores are compared with the 1 and minimum 2 years follow-up findings.

**RESULTS:** The mean initial vertebral deformity (VB kyphosis) was 17°, corrected to a postoperative of 6°. We noted a loss of correction at (the minimum) two years follow-up in comparison to the postoperative standing X-ray at 24 h of 3° vertebral deformity and 3° segmental kyphosis. The VAS score demonstrates a decrease over time from a mean of 8,7 to 3,1 at seven days and to 0,8 at the last follow-up. The Roland Morris disability score demonstraites a similar improvement. We noticed no major complications related to the procedure. All patients with vertebral fractures as sole medical problem were discharged within 48 hours. All active patients returned to work within 3 months.

**CONCLUSIONS:** Balloon kyphoplasty is an alternative mini-invasive technique to reduce the height of vertebral body in acute fractures. The utilisation of Calcium Phosphat Cement (Calcibon$^{TM}$) is recommended only in fractures type A1 and A3.1 due to the intrinsic characteristic of this biological cement. With this indication, our preliminary results demonstrate a new feasible, seemingly safe treatment of this kind of fracture, allowing a rapid treatment of pain, early discharge and return to normal activities.