Could Vesselplasty, Vessel-Lock, And Srha Be The Solution For Osteoporotic Vcfs Problems

B Darwono

Citation

Abstract
Introduction
The problems of vertebral compression fractures (VCFs) in the osteoporotic elderly group is very complex, bringing a downward spiral that worsening the quality of life (QoL) and increasing mortality rate to 23 %. Many non-fusion percutaneous techniques are developed to cut the downward spiral and improving the QoL of this group ie. Vertebroplasty and Kyphoplasty. In most Kyphoplasty the tools are withdrawn then inject cement inside the created void like vertebroplasty and have a risk of leakage. The New technique Vesselplasty use a non stretchable PET container and inject cement inside the container then left as an implant body expander. The container prevent the leakage risk of the cement, but the interdigitation of cement mimics a controllable vertebroplasty so it need a proper justification to end the procedure. Vessel-lock is a later development combining cannulated screw and Vessel-X to be used for fusion technique The new SrHA cement is an osteoinductive and osteoconductive materials with less heat production (<65 °C) is suitable to be used in this technique.

Materials and Methods
A non randomized prospective study treating osteoporotic VCFs using Vesselplasty with PMMA or SrHA cement and Vessel-lock for treating VCFs combined with Lumbar spondylosis. The minimum follow up is 6 months and maximum 5 years to evaluate the pain (VAS), VBH restoration, the effect of PMMA and SrHA cement, using X-ray and Ct-scan and result of Vessel-lock in osteoporotic VCFs with lumbar spondylosis.

Results
A total of 250 cases : 182 females and 68 males, average age 72 : eldest 100 and youngest 57 years old. 298 vertebrae from T3 until L5 were treated, using PMMA 178 and SrHA 120. A significant pain relieved was achieved 1 day after treatment fro VAS 9.9 to 1.7 ( p < 0.001 ). The amount of cement to be injected varies from 2.5 - 9.5 cc, and the average of VBH corrections is 96.4 % ( varies from 50 – 100 %). After 6 months new bone formation was seen at the interface of SrHA cement, while there is no bone formation at the interface of PMMA. At the learning curve there are 5 asymptomatic leakage (1.6 %) means that justification to end the procedure is important. 7 adjacent fractures (2.3 %) one year after treatment occurs in the above 80 years old group : 6 using PMMA and 1 using SrHA. 10 cases with recollapsed vertebra (3.3 %) just 1 month after treatment due to exessive activity before the natural healing of the bone occurs. Five cases osteoporotic VCFs with spondylolistesis and scoliosis degenerative were treated using Vessel-lock with excellent correction of the deformity.

Conclusion
The New technique Vesselplasty is a percutaneous non fusion technique to treat Osteoporotic VCFs using PET non stretchable container to prevent leakage and to restore VBH as implant body expander. The osteoinductive effect of SrHA creating a new bone formation at the interface after 6 months places SrHA superior to PMMA for the elderly and osteoporotic cases. A preliminary report of 5 cases osteoporotic VCFs + Lumbar spondylosis were treated using Vessel-lock with excellent result in correction of the deformity and improvement of QoL.

References
Author Information
Bambang Darwono
Orthopaedi Gading-Pluit Hospital, Medical Faculty, Tarumanagara University, Jakarta, Indonesia.