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# Decreased extrusion of calcium phosphate cement *versus* high viscosity PMMA cement into spongious bone marrow – an *ex vivo* and *in vivo* study in sheep vertebrae

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## Abstract

**Background context:** Vertebroplasty/kyphoplasty of osteoporotic vertebral fractures bears the risk of pulmonary cement embolism (3.5-23%) due to leakage of commonly applied acrylic polymethylmethacrylate (PMMA) cement to spongious bone marrow or outside of the vertebrae. Ultraviscous cement and specific augmentation systems have been developed to reduce such adverse effects. Rapidly setting, resorbable, physiological calcium phosphate