Compatibility of Self-Setting DBM-CP Composites in Vertebral Augmentation
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Introduction: Vertebral augmentation has been a popular method in treatment of osteoporotic compression fractures. Although various void fillers used in percutaneous procedure had been introduced, osteoinductive materials are rare entity. To analyze the physical properties of osteoinductive composite with demineralized bone matrix(DBM) and self-setting calcium phosphate cement(CPC) for its compatibility to percutaneous vertebral augmentation.

Materials and Methods: According to tap volume method, DBM was mixed with CPC in variable ratio 0%, 20%, 30%, 40% and 50%. Distilled water was used as a hardening fluid. Its properties, including injectability, mold applicability, setting time and its behavior, maximum temperature, and mechanical strength, were analyzed.

Results: The DBM-CP composites has a good injectability and mold applicability, a maximum temperature of less than 5 degrees, a initial setting time of 3 to 10 minutes.

Discussion: This study suggests that the DBM-CP composites has a good injectability and mold applicability with a low setting temperature and even distribution of compound. Therefore this composite might be used as a substitute of PMMA in percutaneous vertebral augmentation.

References: