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## P-045 - PEDICLE. SCREW MANAGEMENT IN GERIATRIC PATIENTS

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### Resumen

**Introduction:** Prevalence of spine pathologies has reached 4.83 million cases worldwide annually, presenting a significant medical challenge in ensuring successful interventions. Whether due to fracture or degenerative disease, spine surgery in the geriatric population is often complicated by osteoporosis. Pedicle screw insertion is one of the most practiced procedures in spinal surgeries.

**Objectives:** Examine the advances of pedicle screw's procedure in osteoporotic bone.

**Methods:** This review was based on research from PubMed, found looking keywords such as "pedicle screw", "osteoporotic spine", "aging", "geriatric"... and studying also the articles related or cited by those previous ones until no pertinent information was found. We did not want to previously exclude studies that answered our purpose because it is not a deep studied topic.

**Results:** Several studies propose some solutions for managing pedicle screws in geriatric patients. Cement-augmented pedicle screws are commonly used in osteoporotic spines, with few materials described in the literature. Some pedicle screw trajectories, such as Cortical Bone trajectories, have shown improves in the results. Wider diameter and larger screws have also been beneficial, although oversizing should be avoided. Also there are some screw shapes that have been found to be optimal. In revision surgeries, an oversizing approach using the same screw design is recommended.

**Conclusions:** The demand of pedicle screw interventions in osteoporotic patients is high as it remains a fundamental procedure in spinal surgery. Hence, knowing the peculiarities of the pedicle screws in the osteoporotic bone is essential. To improve the stabilization, different shapes, sizes and diameters of pedicles screws have been developed, and also other techniques such as different implant trajectories or augmented pedicle screws. However, it still remains some problematic with osteoporotic patients procedures and there is no gold standard procedure established.