

# **Comparative Study between cortical trajectory screws and pedicular screws in osteoporotic lumbar spine**

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A thesis submitted in partial fulfillment

Of

The requirements for MD degree

In

**ORTHOPEDIC SURGERY**

**DEPARTMENT OF ORTHOPEDIC SURGERY**

**FACULTY OF MEDICINE**

**FAYOUM UNIVERSITY**

**2020**

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Fayoum University 2020

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## Abstract

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**Purpose:** This study aims to compare the clinical and radiological outcome of cortical bone trajectory screws (CBTS) to traditional trajectory screws (TTS) in osteoporotic patients in short structure fusion surgeries.

**Methods:** A retrospective cohort study was done on 59 osteoporotic patients indicated for lumbar spine fusion: 27 patients in group A treated using CBTS and 32 patients in group B were treated with TTS. Patients were followed for at least one year clinically and radiologically. Dynamic X-rays and CT to assess fusion and VAS and ODI for clinical assessment.

**Results:** In terms of fusion rate, implant failure, operational time, incisional length, hospital stay, the incidence of complications, and clinical outcome, there was no significant difference between the two study groups (VAS, ODI). It was accompanied by decreased intraoperative blood loss than the TTS group ( $P=0.012$ ), but with greater radiation exposure ( $P < 0.001$ ).

**Conclusion:** In osteoporotic patients receiving short-structure lumbar fusion surgery, CBTS revealed comparable clinical and radiological outcomes to TTS. So, CBTS could safely replace TTS in short-structure spine fusion surgery in osteoporotic patients

**Keywords:** lumbar spine fusion, cortical bone trajectory screws, traditional trajectory screws, CBTS, TTS.