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## C0354 - MINIMALLY INVASIVE PERCUTANEOUS SURGERY VS. CONVENTIONAL OPEN SURGERY FOR PEDICLE SCREW FIXATION OF THORACOLUMBAR FRACTURES

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### Resumen

**Objectives:** To compare retrospectively minimally invasive percutaneous surgery (MIS) and conventional open surgery (OS) for screw fixation of thoracolumbar fractures (TLF), in terms of safety, accuracy and efficacy of the two techniques.

**Methods:** We perform a retrospective study of patients undergoing transpedicular screw fixation, either MIS or OS, for the treatment of thoracolumbar fractures between 2013-2016. Epidemiological (age, sex and cause of fracture), clinical (neurological ASIA scale pre and post-surgery, the need blood transfusion, fluids and plasma in the surgical act, complications and death) and radiological (Ao Classification, TLICs Classification, segmental kyphosis pre and post-surgery, accuracy of screw placement) variables were collected and compared.

**Results:** Forty one patients (63.4% men, 36% women) were identified. The average age was 42.88 years. MIS was performed in 21 patients and OS in 20 patients. The most frequent cause were traffic accidents, and the most affected vertebral body was T12 and L1; the most common fracture type was A4 (Ao classification) and the average TLICS score was 6.4 and 5.5 (Os and MIS respectively). 48.8% of patients didn't have deficit (E-Asia scale) and 19.5% had complete cord lesion (A-Asia scale). A total of 288 screws were placed. 19 out of 132 and 11 out of 156 were misplaced (OS and MIS respectively). The OR of misplacing a screw was 2.17 (1.01-4.85),  $p = 0.05$  with the OS. The loss of hemoglobin and the need for transfusion was greater in open surgery but this was not statistically significant. Segmental kyphosis presurgery were 15.9 and 15.02; and 7.13 and 7.65 postsurgery (OS and MIS respectively). The loss of correction was 1.4 and 3.1 (OS and MIS respectively) at 6 month follow up. Three misplaced screws were clinically relevant, 2 OS and 1 MIS. 2 deaths occurred, no related with the surgical technique but the initial injury.

**Conclusions:** The MIS technique seems to be more accurate, and equally effective and safe than OS for the treatment of thoracolumbar fractures.