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“HANDS FREE” THORACIC PEDICLE INSTRUMENTATION. PEDICLE SCREW PLACEMENT: SURGEONS FEELING VERSUS REAL LOCATION.

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INTRODUCTION.



- Thoracic pedicle screw placement is a common but challenging surgical technique for vertebral instrumentation.
- “Hands-free” instrumentation is based on the surgeon’s experience, depending on its own intraoperative feeling, when probing the pedicle path.

OBJECTIVES.

- To compare the real thoracic pedicle screw placement assessed with postoperative CT Scan when comparing to data obtained intraoperatively, in reference to surgeon's feeling probing the pedicle path.

METHODS.



- Prospective observational study.
- Consecutive patients who underwent hands-free thoracic screw placement by 4 different spine surgeons: 1 senior and 3 juniors.

METHODS.

- An independent observer registered intraoperatively data regarding Steffe and probe palpation of the pedicle path, cortical violation feeling an need for screw replacement.

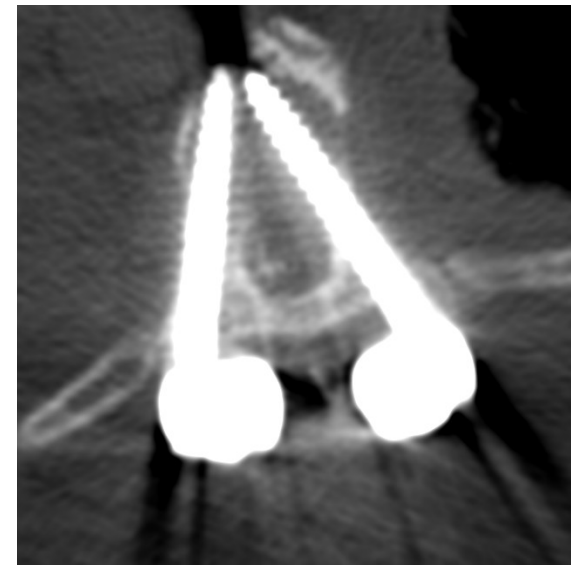
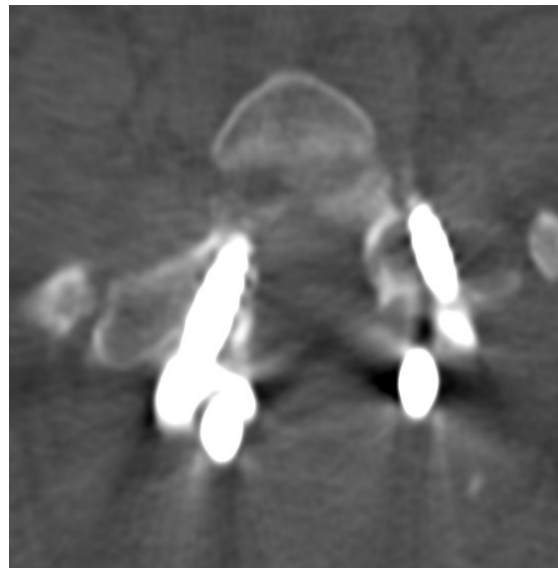
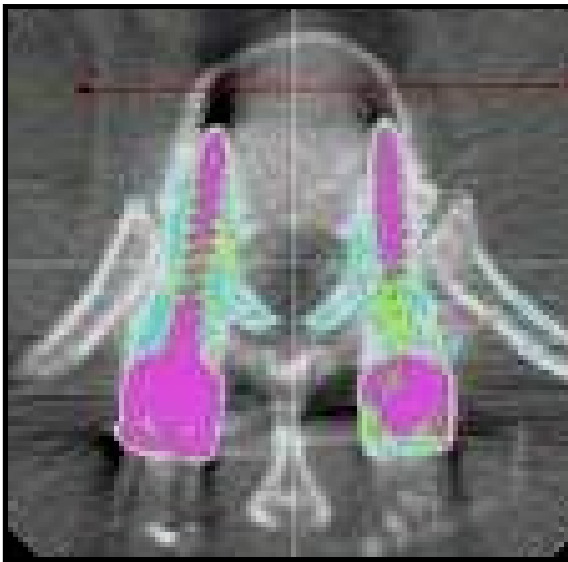


METHODS.



- Postoperatively, a CT Scan study was performed (informed consent) to all patients.
- Same observer and an independent radiologist checked the real screw location.
- Intraoperative data and radiological results were analyzed with SPSS 17.00 for windows.

METHODS.



Correct location: cortical violation < 2 mm

Beguiristain Gúrpide, J.L. *Rev. Ortop. Traum.* 2001

RESULTS.

- 130 thoracic screws.
- 16 patients (9 males).
- Average age: 54 years (31-77).
- Diagnosis.

Diagnosis	Frequency
Vertebral fracture	12
Metastasis	2
Dyscitis	1
Degenerative scoliosis	1

RESULTS.

- 30.8% of medial cortex violation.
- 91.7% of those were intraoperatively assessed as correctly placed:
 - kappa = 0,122. IC95% = (0.034 – 0.370)

Very low agreement in between surgeons feeling and real placement.

RESULTS.



- In proximal thoracic pedicles (T1-T7) the percentage (17.9%) was higher than in lower (T8-T12) levels (10.9%).
- The greater surgeon's experience has the lower misplaced screws percentage.

CONCLUSIONS.



- There is low agreement between surgeon's screw placement feeling and the CT Scan image.
- Despite screw misplacement no neurological complications were seen.

DISCLOSURE DECLARATION.



None of the authors has any potential conflict of interest.