Posterior spinal fixation Fluoro-Ct-guided and assisted by navigator. About 194 cases

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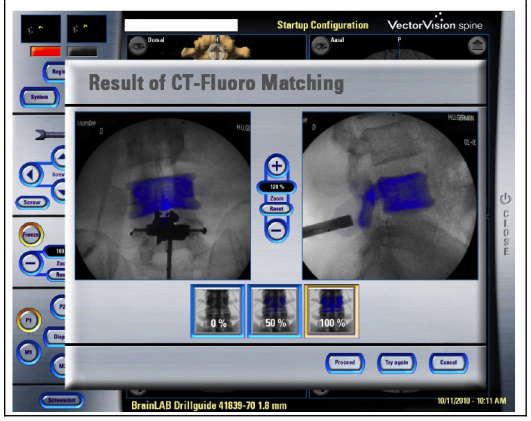
Introduction

We present a series of 194 cases of posterior vertebral fixation from Sept 2008 to January 2012 using Flouro 2D -TC assisted by navigator.

Methods

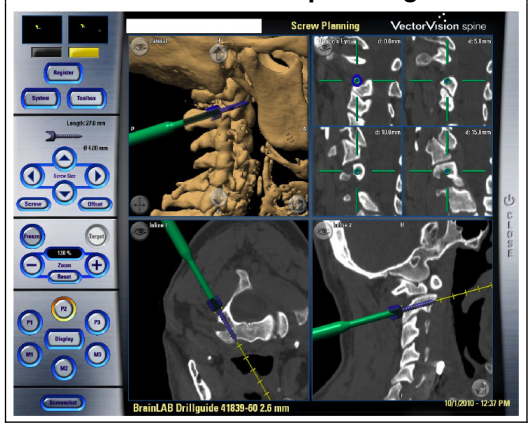
The sample included 110 males and 84 females. Age range was 17-79 with an average of 51.68, all with indication for fixation by different pathologies. All underwent a CT before surgery, according to navigation protocol, and the images obtained were merged in the navigator in the operating room with a Flouro 2D images.

Image fusion between x-ray and CT scan



To evaluate the results of the implant, a post-op CT was performed and the position of the implant was defined according to Heary's scale. The calibration time of the material and number of shots with the Fluoro 2D was also evaluated. For clinical evaluation VAS scales, Oswestry and JOA lumbar were employed, as well as the degree of satisfaction and acceptance of the procedure again.

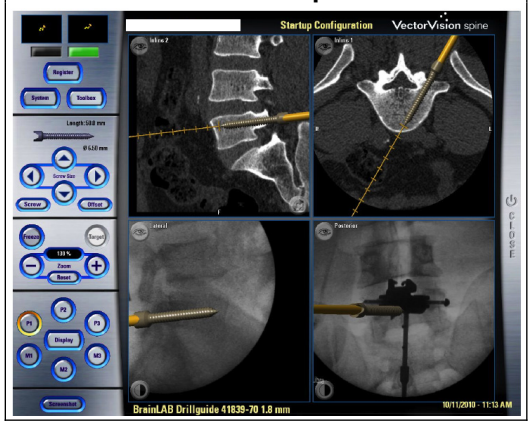
Cervical screw planning



Results

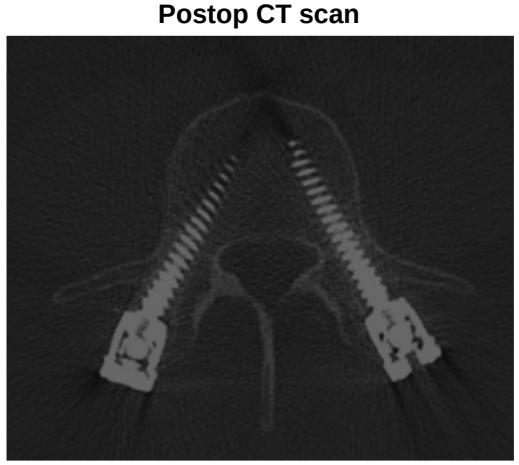
A total of 910 screws were implanted: 102 cervicals, 42 dorsals, 585 lumbar and 181 sacral. Open surgery was performed in 61 cases, MIS in 52 and Percutaneous in 81.The precision of the implant was 99.01% with a global deviation of 0.99% according to the Heary scale. Average time of surgery and registration was 3h 01 min and 2 min. 57 seconds respectively . The mean flouroscopic exposure was four shots.

Lumbar screw implantation



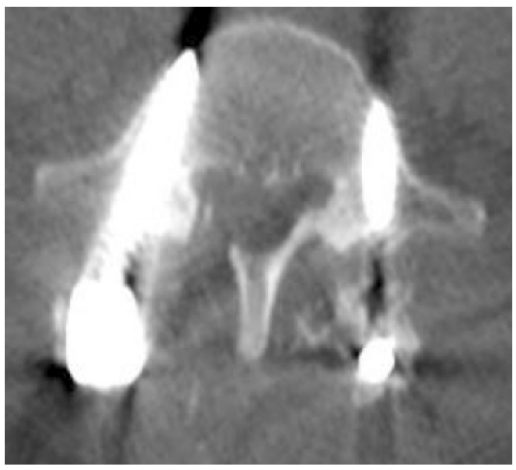
The clinical evaluation at one month of 187 patients was 8.6/3.0 in the VAS, 69%/24% in Oswestry and 6.61/13.08 in JOA (L), this parameters remaining stable at 6 months in 158 patients. The degree of satisfaction with the procedure was 94.9%, and those who would submit to another treatment was 95.3%.

Postop CT scan



With neuronavigation

Postop CT scan



Without neuronavigation

Conclusions

Navigation with Flouro-2D CT is a high precision technique that reduces complications rate as well as number of reinterventions, radiation exposure and surgical time.

Learning Objectives

By the conclusion of this session, participants should be able to understand that navigation may help on prevent screws misplacement as well as reduces radiation exposure and reinterventions rate