FP 05

Neuronavigation Versus Traditional C-Arm Flouroscopy In Transsphenoidal Surgery For The Excision Of Pituitary Macroadenomas: A Comparative Study From The University Of Santo Tomas Hospital, Philippines

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Introduction:
Transsphenoidal surgery (TSS) with C-arm fluoroscopy for excision of pituitary adenomas remains one of the safest procedures in neurosurgical practice. However, some of its serious complications include injury to the ICA causing fatal bleeding, optic nerve injury, hypothalamic injury, and CSF leaks. Since the most likely cause of these complications during TSS is localization and misdirection, neuronavigation may be beneficial, if not, a better instrument to aid surgeons in transspehnoidal surgery.

Objective:
To determine any advantage of using neuronavigation versus C-arm fluoroscopy in excision of pituitary adenomas based on (1) intraoperative blood loss, (2) operative duration and (3) complication rate.

Method:
This is a retrospective cohort study from the UST Hospital, comparing all cases of non-functioning pituitary macroadenomas from January 2014 to July 2016 who underwent TSS by C-arm flouroscopy versus neuronavigation.

Results:
A total of 37 patients were included: TSS + C-arm (n=25) and TSS + NN (n=12). The mean blood loss for the latter group was 220.8 mL which was significantly lower to the 284 mL mean blood loss of the former (p=0.005). The mean operative duration of patients under the TSS + NN group was 2.6 hours which was shorter than that of the control group at 2.9 hours but was not significantly different (p=0.077). There were 2 cases with complications noted from the TSS + C-arm group and none for TSS + NN group, but did not show any statistical significance.

Conclusion:
Neuronavigation is not a requirement but can be an advantageous adjunct in pituitary surgery.