

Cerebrospinal Fluid Fistula Following Translabyrinthine Resection of Vestibular Schwannoma: technical and patient factors.

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Abstract:

Objective: To determine the incidence of cerebrospinal fluid (CSF) fistula following translabyrinthine resection of vestibular schwannoma, and explore its predictive factors.

Study Design: Retrospective case review

Methods: Charts of consecutive patients undergoing translabyrinthine resection of vestibular schwannoma from January 2003 – December 2006 were reviewed. All 120 patients meeting inclusion criteria underwent abdominal fat graft in the reconstruction of the posterior fossa defect. Two groups of patients were identified and compared with respect to incidence of CSF fistula. Group #1 patients had their posterior fossa defect closed following a regimented protocol developed over several years. Group #2 reflected a series of changes made during the study period to the standardized closure protocol. Variables analyzed as predictive factors toward CSF fistula were: age, gender, use of peri-operative steroids, primary or revision surgery, history of diabetes, hypertension, smoking, and performance of cranioplasty.

Results: Cerebrospinal fluid fistula occurred in 7.5% of patients (9/120), female gender combined with a history of hypertension was a statistically significant predisposing factor to CSF leak (26.3%, $p=.042$). All other reviewed factors failed to achieve statistical significance. There was a trend toward statistical significance when comparing CSF fistula rates of Group #1 (2%; 1/50) patients to Group #2 (11.4%; 8/70) patients.

Conclusions: The incidence of cerebrospinal fluid fistula remains constant relative to historic studies at high volume tertiary referral institutions. An increased risk exists among women with hypertension. Regimented closure methods involving a large fascial graft, release of the tensor tympani muscle in packing the Eustachian tube, and a single plug of abdominal fat demonstrated a lower incidence of CSF fistula.

Keywords: Translabyrinthine, Vestibular Schwannoma, cerebrospinal fluid fistula