INTRODUCTION

Cerebrospinal fluid (CSF) fistula is a known post-operative complication of the translabyrinthine craniotomy approach for vestibular schwannoma resection. Reported rates in the literature are variable, ranging from 0-30%. Patients who suffer from CSF fistulae are at greater risk for meningitis, the need for revision surgery, and may experience a prolonged hospital stay. The identification of associated risk factors may influence future perioperative management. Unfortunately, there is a paucity of data in the current literature in this regard.

We have maintained a simple closure technique with the avoidance of lumbar drainage and foreign material in the craniotomy reconstruction. In the current study, we present the rate of post-operative CSF fistulae after translabyrinthine craniotomy for the removal of vestibular schwannoma at a major skull base surgery referral center over a 3-year period. We also describe the details of our closure technique and perioperative protocol that have been effective in preventing its occurrence.

METHODS AND MATERIALS

A retrospective chart review of all individuals who underwent translabyrinthine craniotomy for the removal of vestibular schwannoma from December 2011 to October 2014 was performed. Tumors of the facial, glossopharyngeal, or vagus nerve were excluded, as well as other masses of the cerebellopontine angle. Cases that involved a combined approach, staged resection, or prior treatment with stereotactic radiosurgery were also excluded.

The main outcome variables were the presence of CSF leak, the association with age, gender, BMI, and the need for additional surgeries or medical interventions.

RESULTS

82 patients, of 4 different surgeons, met inclusion criteria. Five patients were noted to have a post-operative CSF fistula (6%). The average age of those patients with postoperative CSF fistulae (63.4 + 9.71) was significantly higher than the remaining patients (51.96 + 12.49). There was no significant difference in BMI between the two groups. None of the CSF fistulae patients developed meningitis. All five of the CSF fistulae patients were readmitted, but there was no significant difference in length of stay between the two groups. 4/5 failed conservative management, requiring lumbar drain placement, and wound exploration with closure of the fistula.

CONCLUSIONS

Post-operative CSF fistula is a rare occurrence after translabyrinthine craniotomy for resection of a vestibular schwannoma in our practice. Our simple closure technique, without the routine use of perioperative diuretics or the perioperative placement of a lumbar drain, is sufficient for the prevention of post-operative CSF fistula. The only risk factor determined to be of significance was increased age. We predicted that increased BMI, diabetes mellitus and obstructive sleep apnea would be associated with a greater risk for post-operative CSF leak; however, this was not the case.

REFERENCES