



Clinical Outcomes Following Surgical Obliteration of Cerebrospinal Fluid Venous Fistula in Patients with Intracranial Hypotension: A Prospective Study

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Introduction

Cerebrospinal venous fistula (CVF) is a newly described etiology for spontaneous intracranial hypotension (SIH) (Figure 1). Recently, surgical ligation of CVF has been recognized as a therapeutic option for patients failing more conservative therapy; however, there is a paucity of clinical data regarding its efficacy and safety profile.

Methods

Patients undergoing surgical ligation for CVF causing SIH between 2012 and 2018 were prospectively enrolled in this study. Inclusion criteria included 1) diagnosis of SIH, and 2) demonstration of CVF on CT-myelogram. Demographic factors, CVF location, and description and duration of symptoms were recorded for each patient. Preoperatively, the Headache Impact Test (HIT-6) was administered to all patients, who were then re-administered the test at least 6 weeks after surgical intervention. Additionally, the Patient Global Impression of Change (PGIC) was also administered at follow-up. Perioperative complications and 30-day readmission rates were recorded.

Results

20 total patients were included in statistical analysis. Average age was 51.3+/-13.6 years, BMI 26.0+/-4.2 kg/m2. There was an average of 2.5 epidural or fibrin blood patches attempted prior to surgery, with T8-9 (N=5, 25.0%) and T11-12 (N=5, 25.0%) being the most commonly involved level. The average HIT-6 score was almost universally high (64.7+/-6.4, range [44-76]). Postoperatively, the mean follow-up was 16.0+/-9.7 months with an average postoperative HIT-6 score of 44.1+/-8.4 with average change of -20.6+/-9.3 points. With respect to the PGIC survey, 18 (90.0%) patients responded most favorably that surgery resulted in headaches that were “a great deal better, and a considerable improvement that has made all the difference”. No patient suffered any short or long-term perioperative complications or 30-day readmission.

Conclusions

Surgical ligation of CVF for SIH is a safe and efficacious therapeutic option for patients failing more conservative therapy. Larger trials with longer follow-up period are indicated to better assess its long-term efficacy and safety profile.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) describe the importance of cerebrospinal fluid venous fistulas, 2) discuss, in small groups, the utility of surgical ligation in the treatment of cerebrospinal fluid venous fistulas, and 3) identify an effective surgical solution for treatment-refractory cerebrospinal fluid venous fistula.

References

