External ventricular drain for chronic subdural hematoma

- Bilateral posterior fossa chronic subdural hematoma as a cause of hydrocephalus
- Evaluating the Effectiveness of Minimally Invasive Surgery Using External Ventricular Drainage Systems in Draining Chronic Subdural Hematomas
- Comparison of Two Drainage Systems on Chronic Subdural Hematoma Recurrence
- Study Design in Neurosurgical Research: Considerations for Observational and Experimental Cohort Studies
- Novel Use of Dual-Lumen Catheter for Irrigation and Drainage After Evacuation of Chronic Subdural Hematoma
- Factors predicting reoperation of chronic subdural hematoma following primary surgical evacuation
- Minimally invasive bedside craniotomy using a self-controlling pre-adjustable mechanical twist drill trephine

There is inadequate neurosurgical literature discussing appropriate clinical study design. Louie et al. explored considerations for 2 fundamental study designs of epidemiology: experimental and observational cohort studies, through examples of theoretical yet realistic neurosurgical research questions. By examining 2 common neurosurgical procedures-namely, subdural drains for evacuation of chronic subdural hematoma, and the utility of navigation for placing external ventricular drains-they characterized the framework of cohort study models for clinical research applications [1].

From 2014 to 2020, the data of 28 patients with chronic subdural hematoma who underwent surgeries with two large burr holes, saline irrigation, and CDS or one small burr hole, no saline irrigation, and EVDS were retrospectively who had preoperative computed tomography (CT), postoperative 1st-3rd day CT, and postoperative 7th-10th day CT were included in the study. Pre- and postoperative subdural liquid collection volumes and postoperative intracranial air volumes were measured using Sectra Medical Workstation. Results were compared between these two groups.

Results: There were no significant differences in the preoperative and 7th-10th day liquid volumes between these two groups (p 0.05). There were significant differences in the postoperative 1st-3rd day air volume between these two groups (p 0.001).

Conclusion: The statistical results showed that surgeries with EVDS are as effective as surgeries with CDS in draining chronic subdural hematomas. We also determined that the intracranial air volume is significantly less in surgeries with EVDS. For this reason, we believe that EVDS can reduce the risk of postoperative infection [2].

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retrospectively analyzed the charts of 172 CSDH patients treated with bedside twist drill craniostomy (TDC) and subdural drain insertion. Patients were divided into two groups: group A (n = 123) received a pediatric size nasogastric tube [NGT]), whereas group B (n = 49) had a drain commonly used for external ventricular drainage (EVD). Various demographic and radiologic data were collected. Our main outcome was recurrence, defined as symptomatic re-accumulation of hematoma on the previously operated side within 3 months.

Results: In all, 212 cases of CSDH were treated in 172 patients. The majority of patients were male (78%) and had a history of previous head trauma (73%). Seventeen cases had recurrence, 11 in group A and 6 in group B. The use of antiplatelet and anticoagulation agents was associated with recurrence (p = 0.038 and 0.05, respectively). There was no difference between both groups in terms of recurrence (odds ratio [OR] = 1.42; 95% confidence interval [CI]: 0.49-4.08; p = 0.573).

Conclusion: CSDH is a common disease with a high rate of recurrence. Although using a drain postoperatively has shown to reduce the incidence of recurrence, little is known about the best type of drain to use. Our analysis showed no difference in the recurrence rate between using the pediatric size NGT and the EVD catheter post-TDC [3].

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