Chronic subdural hematoma recurrence case series

A retrospective descriptive study, in which the medical records of all patients with a chronic subdural hematoma (CSDH) diagnosis submitted to surgical treatment from 2000 to 2014 were analyzed.

The final study population consisted of 500 patients with a diagnosis of CSDH (95 patients with a diagnosis of Cystic Hygroma were excluded), of which 27 patients presented recurrence of the disease (5.4%). There were no statistically significant differences in relapses when cases were stratified by gender, laterality of the first episode or surgical procedure performed in the first episode (trepanning vs. craniotomy). It was possible to demonstrate an age-related protective factor, analyzed as a continuous variable, regarding the recurrence of the CSDH, with a lower rate of recurrence the higher the age.

The results indicate that, among possible factors associated with recurrence, only age presented a protective factor with statistical significance. The fact that no significant difference between the patients submitted to trepanning or craniotomy was found favors the preferential use of burr-hole surgery as a procedure of choice due to its fast and less complex execution [1)].

2017

Kim et al. analyzed data from 248 patients with chronic subdural hematoma who were treated by burr-hole craniostomy with a closed drainage system for hematoma evacuation in this five-year retrospective study.

Thirty-one (12.6%) patients underwent re-operation for recurrence of chronic subdural hematoma. Univariate analysis revealed that anticoagulation (p=0.0279), headache (p=0.0323), and preoperative midline shifting (p=0.0321) showed significant differences with respect to recurrent chronic subdural hematoma. We performed a multivariate logistic regression analysis and found that diabetes mellitus (odds ratio [OR], 2.618; 95% confidence interval [CI], 1.0899-6.2898; p=0.0314), anticoagulation (OR, 6.739; 95% CI, 1.1287-40.2369; p=0.0364), headache (OR, 2.951; 95% CI, 1.1464-7.5964; p=0.0249), and preoperative midline shifting (OR, 1.0838; 95% CI, 1.0040-1.1699; p=0.0391) were independent predictive factors for recurrence of chronic subdural hematoma.

They showed that diabetes mellitus, anticoagulation, headache, and preoperative midline shifting were independent predictors of recurrence of chronic subdural hematoma [2)].

A retrospective analysis of 756 consecutive patients with CSDH who underwent bur hole surgery at the Hanyang University Medical Center (Seoul and Guri) between January 1, 2004, and December 31, 2014. During the 6-month follow-up, 104 patients (13.8%) with recurrence after surgery for CSDH were identified. Independent risk factors for recurrence were as follows: age > 75 years (HR 1.72, 95% CI 1.03-2.88; p = 0.039), obesity (body mass index ≥ 25.0 kg/m2), and a bilateral operation.

This study determined the risk factors for recurrence of CSDH and their effects on outcomes. Further studies are needed to account for these observations and to determine their underlying mechanisms

[3].

2016

Chronic subdural hematomas (cSDHs) have shown an increasing incidence in an ageing population over the last 20 years, while unacceptable recurrence rates of up to 30 % persist. The chronic subdural hematoma recurrence rate seems to be related to the excessive neoangiogenesis in the parietal membrane, which is mediated via vascular endothelial growth factor (VEGF). This is found to be elevated in the haematoma fluid and is dependent on eicosanoid/prostaglandin and thromboxane synthesis via cyclooxygenase-2 (COX 2). With this investigator-initiated trial (IIT) it was thought to diminish the recurrence rate of operated-on cSDHs by administering a selective COX-2 inhibitor (Celecoxib) over 4 weeks' time postoperatively in comparison to a control group.

The thesis of risk reduction of cSDH recurrence in COX-2-inhibited patients was to be determined in a prospective, randomised, two-armed, open phase-II/III study with inclusion of 180 patients over a 2-year time period in four German university hospitals. The treated- and untreated-patient data were to be analysed by Fisher's exact test (significance level of alpha, 0.05 [two-sided]).

After screening of 246 patients from January 2009 to April 2010, the study had to be terminated prematurely as only 23 patients (9.3 %) could be enrolled because of on-going non-steroid anti-rheumatic (NSAR) drug treatment or contraindication to Celecoxib medication. In the study population, 13 patients were treated in the control group (six women, seven men; average age 66.8 years; one adverse event (AE)/serious adverse event (SAE) needing one re-operation because of progressive cSDH (7.7 %); ten patients were treated in the treatment group (one woman, nine men; average age 64.7 years; five AEs/SAEs needing two re-operations because of one progressive cSDH and one wound infection [20 %]). Significance levels are obsolete because of insufficient patient numbers.

The theoretical advantage of COX-2 inhibition in the recurrent cSDH could not be transferred into the treatment of German cSDH patients as 66.6 % of the patients showed strict contraindications for Celecoxib. Furthermore, 55 % of the patients were already treated with some kind of COX-2 inhibition and, nevertheless, developed cSDH. Thus, although conceptually appealing, an anti-angiogenic therapy with COX-2 inhibitors for cSDH could not be realised in this patient population due to the high prevalence of comorbidities excluding the administration of COX2 inhibitors [4].

2010

Recurrence rates after chronic subdural hematoma (CSDH) evacuation with any of actual techniques twist drill craniostomy (TDC), burr hole craniostomy, craniotomy range from 5% to 30%. Use of drain has improved recurrence rates when used with burr-hole craniostomy. Now, we analyze predictors of recurrence of TDC with drain.

Three hundred twelve consecutive patients with CSDH have been studied in a retrospective study. Operative technique in all patients consisted in TDC with drain. Data recorded included any associated comorbidity. Radiologic measures of the CSDH before and after the procedure were studied. Clinical evaluation included Modified Rankin Scale, Glasgow Coma Scale (GCS), and neurological deficits. Two groups were compared: recurrence group and nonrecurrence group. Follow-

up was for at least 1 year.

Twelve percent experienced recurrence. Preoperative CSDH width, preoperative midline shift, postoperative midline width, postoperative CSDH width, and residual CSDH 1 month later were significantly associated with CSDH recurrence. The logistic regression model for the multivariate analysis revealed that postoperative midline shift and postoperative neurological deficit were significantly associated with CSDH recurrence. The duration of treatment with dexamethasone was found not to be related with recurrence. Mortality before hospital discharge was 1%. Hospital stay was 2.5 days.

TDC with drain has similar results in recurrence rates, morbidity, mortality, and outcome as other techniques as burr-hole craniostomy with drain. Preoperative and postoperative hematoma width and midline shift are independent predictors of recurrence. Brain re-expansion and time of drain maintenance are important factors related with recurrence of CSDH. Future CSDH reservoirs must avoid negative pressure and sudden pressure changes inside the whole closed drain system [5)].

1)
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