2009

Mat Nayan et al. studied the efficacy of two surgical methods used for the treatment of intracranial subdural empyema (ISDE). A cross-sectional study (1999-2005) of 90 patients with non-traumatic supratentorial ISDE revealed that the two surgical methods used for empyema removal were burr hole/s and drainage (50 patients, 55.6%) and a cranial bone opening procedure (CBOP) (40 patients, 44.4%). Patients in the CBOP group had a better result in terms of clinical improvement (chi-squared analysis, p=0.006) and clearance of empyema on brain CT scan (chi-squared analysis, p<0.001). Reoperation was more frequent among patients who had undergone burr hole surgery (multiple logistic regression, p<0.001). The outcome and morbidity of ISDE survivors were not related to the surgical method used (p>0.05). The only factor that significantly affected the morbidity of ISDE was level of consciousness at the time of surgery (multiple logistic regression, p<0.001). We conclude that CBOP and evacuation of the empyema is a better surgical method for ISDE than burr hole/s and drainage. Wide cranial opening and empyema evacuation improves neurological status, gives better clearance of the empyema and reduces the need for reoperation. Level of consciousness at the time of presentation is a predictor of the morbidity of ISDE. Thus, aggressive surgical treatment should occur as early as possible, before the patient deteriorates [1)].

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65 pediatric patients (age <or=18 years) with supratentorial SDEs were treated between January 1988 and May 2006.

There was a slight male preponderance (55%), with mean age being 9.54 +/- 6.43 years (range 3 months to 18 years). Otogenic source was the most common identifiable etiology, followed by postmeningitic and rhinogenic sources. The initial surgical intervention, burr holes (44 patients; 67.7%) and craniotomy (21 patients; 32.3%), varied with individual cases and surgeon preference. Initial craniotomy was associated with lesser repeat procedures, and slightly better clinical outcome. The majority (83.3%) of patients with significant residual requiring repeat surgery were found to have undergone burr hole evacuation initially. The mortality rate in the present series was 10.8%. Follow-up was available for 41 patients (70.7%) with an average follow-up of 10.4 months. 88% of patients showed good outcomes (Glasgow Outcome Scores of 4 or 5) at the latest follow-up.

Pediatric supratentorial SDEs, although rapidly fatal if not identified promptly, can be effectively managed with early surgical drainage (preferably craniotomy), eradication of the source, and sensitive broad-spectrum antibiotics (i.v.) with good outcomes [2)].

2007

Between 1997 and 2006, Mikami et al. treated eight patients with recalcitrant postcraniotomy subdural empyema and epidural abscess with combinations of myocutaneous free flap transfer. The free flap transfer was intended for patients who could not be cured with conventional surgical debridement and bone flap removal. Patient ages ranged from 15 to 67 years (mean, 41.5 yr). There were six men and two women. Treatment was required for cranial base tumors (n = 3), the result of trauma (n = 2), malignant tumors (n = 2), and cerebral hematoma (n = 1). In six patients (75%), an expanded polytetrafluoroethylene sheet was used as a dural substitute at the original surgery. They used three rectus abdominis myocutaneous flaps and five latissimus dorsi myocutaneous flaps. In six patients (75%), surgery was performed in the chronic stage of infection, and the other two patients were in the acute stage of infection.

Among all the patients, two failures occurred because of flap ischemia, but these were resolved after an additional procedure. However, one of these two patients, in whom surgery was performed at the acute stage of infection, died 4 weeks after the surgery. The postoperative course of the other six patients was uneventful. Isolated microorganisms were methicillin-resistant Staphylococcus aureus (four patients), Pseudomonas aeruginosa (three patients), and methicillin-sensitive Staphylococcus aureus (one patient).

Myocutaneous free flap transfer allows sufficient blood circulation and dead space control and is resistant to infection. Therefore, free flap transfer is useful for eliminating intractable empyema and abscess; however, it is important that the procedure be considered in the chronic stage of infection [3].

2004

In 45 patients, there were 35 males and 10 females in the series. The majority of the patients were either infants (22.2%) or in their second and third decade of life (37.8%). For supratentorial SDE, craniotomy was done in 5 cases (11.1%). In six cases (13.3%) two burr-holes and in the rest of the cases multiple burrholes were done to evacuate the empyema. Craniectomy was done in three cases (6.7%), of which two had posterior fossa SDE. All patients received appropriate preoperative and postoperative broad-spectrum antibiotics.

There was good recovery in 35 (77.8%) patients, six patients (13.3%) had moderate disability, two patients (4.4%) had severe disability, and two (4.4%) died. Three patients who developed recollection at operation site required evacuation of residual SDE. Median follow-up was 3(1/2) years (range 4 months to 3(1/2) years).

Emergent evacuation of SDE using multiple burr-holes and irrigation of the subdural cavity with saline for 24 hours results in a satisfactory outcome in cases with SDE [4].

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