Standard protocol for chronic subdural hematoma (cSDH) evacuation

All symptomatic patients, particularly those with large cSDH (maximal axial diameter > 15mm or relevant midline shift (MLS)) or presenting in reduced vigilance (GCS < 15) are usually operated within 24 hours. Coagulation parameters are checked routinely prior to surgery. Surgery for patients under anti-aggregation or anticoagulation is delayed until blood clotting and thrombus functions is restored, whenever possible, under close monitoring. Our departmental protocol aims at maintaining platelets at >100 x 10^9/dl and an international normalized ratio (INR) of <1.4. Coagulation abnormalities are actively reversed preoperatively with prothrombin complex concentrate or fresh frozen plasma, if urgent surgery is required. Antiplatelet medication is stopped 5–7 days prior to surgery; if urgent surgery is required, one jumbo unit of platelet concentrate is administered immediately preoperative.

We usually perform double burr-hole trepanation (20mm) per side under general anesthesia. The patient is placed in supine position with the head rotated about 80° towards the contralateral side and positioned on a ring-shaped gel cushion. If necessary, the hair is shaved for 5 x 2 cm in the region of anticipated incisions. Two skin incisions per side, each 35 mm in length, are required. A 14-mm trepan is used for both burr holes. The frontal burr hole is usually placed at the junction of the superior temporal line and the coronal suture (stephanion), while the posterior burr hole is usually placed in the region of the parietal eminence. In case of significant bilateral hematoma, trepanation is performed on both sides. After trepanation and dural opening, the hematoma is evacuated by repeated irrigation with warmed saline solution until reflux is limpid. There is little doubt that placing a drain after hematoma evacuation can significantly reduce the recurrence rate in cSDH. Whether placing the drain in the superiostal or subdural space is superior has not been proven so far, but we prefer subperiostal drains for the better safety profile. The skin is closed by tight subcutaneous sutures and staples on the surface. For bilateral cSDH the procedure is repeated on the contralateral side.

Postoperatively, patients remain immobilized and flat in supine position for 48 hours until the drain is removed. In absence of residual deficits, patients are discharged from postoperative day three on. We routinely perform outpatient follow-up visits with cranial computed

tomography (CT) scan at 6 and 12 weeks postoperatively. Follow-up is continued on an individual basis afterwards.