

Basal ganglia hemorrhage surgery

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Techniques

The main surgical [techniques](#) for [spontaneous basal ganglia hemorrhage](#) include [stereotactic aspiration](#), [endoscopic aspiration](#), and [craniotomy](#). However, credible evidence is still needed to validate the effect of these techniques.

Craniotomy

[Craniotomy for basal ganglia hemorrhage evacuation.](#)

Decompressive craniectomy

Outcome analysis was stratified using hematoma volume, ICH score, preoperative GCS score, and decompressive craniectomy (DC).

Results: The mean hematoma volume was 70.8 mL, and 68 patients (26.9%) underwent DC. The mean postoperative ICP was 28.8 ± 6.7 mmHg for patients without DC, and only 17.5 ± 8.6 mmHg for patients with DC. Twenty-five patients (9.9%) died within 30 days of the operation, and 88 patients (34.8%, GOS ≥ 4) had good outcome 3 months after surgery. ICH volume > 50 mL, preoperative GCS score ≤ 8 , and ICH score ≥ 3 are risk factors for unfavorable outcomes.

Conclusions: DC can be used for patients with low preoperative GCS score, and it effectively reduces

ICP and 30-day mortality. Hematoma volume, preoperative GCS score, and ICH score are of predictive value for surgical outcome of large basal ganglia hemorrhage ¹⁾.

Robot-assisted surgery on minor basal ganglia hemorrhage

Robot-assisted surgery on minor basal ganglia hemorrhage

Stereotactic aspiration

[Stereotactic aspiration for basal ganglia hemorrhage evacuation.](#)

Endoscopic aspiration

[Endoscopic aspiration for basal ganglia hemorrhage evacuation.](#)

Laser navigation combined with XperCT technology-assisted puncture

A total of 61 patients with hypertensive [basal ganglia hemorrhage](#) were recruited at the [Binzhou Medical University Hospital](#), between October 2019 and January 2021, and their clinical information was retrospectively analyzed. Based on the surgical approach used, patients were assigned into either laser navigation or small bone window groups depending on the surgical approach. Then, they compared the operation times, intraoperative blood loss, clinic stay, [Glasgow Outcome Scale](#) (GOS) rating at 30 days, [Barthel index](#) (BI) rating at 6 months, postoperative [pneumonia](#) incidences, and intracranial contamination complications between groups. Intraoperative [blood loss](#), [operation time](#), and sanatorium were significantly low in the laser navigation group, relative to the small bone window group. At the same time, there were no significant differences between the groups with regard to postoperative [hematoma volume](#), lung contamination, cerebrospinal fluid (CSF) leak, and intracranial contamination, as well as the 6-month BI and 30-day GOS rating. There were no deaths in either group. Compared with traditional small bone window surgery, laser-guided puncture, and drainage is a low-cost, accurate, and safe method for the treatment of basal ganglia hemorrhage, which is suitable for promotion in developing countries and economically underdeveloped areas ²⁾

Complications

Postoperative hemorrhage is a severe complication, and it's relative to [neurosurgical techniques](#).

The favorable outcome group was slightly younger (p-value 0.050*). Also, the volume and extension of hematoma into the ventricular system, hydrocephalic dilatation, and midline shift greater than 5 mm had a significantly worse outcome with a statistically significant difference.

The early surgical management with the removal of the hematoma led to a dramatic reduction of ICP and improved the prognosis. Patients with signs of brain herniation, a midline shift > 5 mm, hydrocephalic dilatation, ventricular hemorrhage, and a depressed level of consciousness have a poor

prognosis ³⁾

References

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