Brainstem hemorrhage treatment

It remains controversial whether primary brainstem hemorrhage (PBH) should be managed conservatively or treated promptly by surgical evacuation of the hematoma.

A study included seven patients (three men and four women aged 40-56 y) who underwent 3D print-assisted brainstem hemorrhage puncture drainage between June 2016 and March 2018 at Binzhou Medical University Hospital. The amount of brainstem hemorrhage was 15-47 mL. Wang et al. analyzed the basic surgical conditions, deviation distance, and postoperative clinical improvement.

In all cases, the operation was completed successfully; no patient died or contracted an infection intraoperatively. The end of the puncture tube was located in the hematoma cavity in all cases. The deviation distance ranged from 2.5 to 7.2, and this distance gradually reduced with improvements in the technique. The hematoma drainage achieved satisfactory postoperative outcomes, with improvements in symptoms such as respiratory failure and hyperthermia.

Use of a 3D-printed navigation mold for puncture drainage of brainstem hemorrhage realized the purpose of individualized and precision medicine, which is important in maintaining the vital signs of patients with severe brainstem hemorrhage [1].

In a study Ichimura et al. discussed 5 cases of PBH that were treated surgically and the ability of surgical management to improve postoperative functional outcomes.

The 4 patients with pontine and medullary hemorrhage underwent surgery via the lateral or midline suboccipital and trans-rhomboid fossa approach in the half-sitting position. The patient with a midbrain hemorrhage underwent surgery via the subtemporal approach in the supine lateral position. We analyzed the postoperative functional outcomes 1 week after surgery and the modified Rankin scale scores 6 months after discharge.

Three patients with disturbance of consciousness experienced improvement in their level of consciousness. Four patients with hemiparesis improved in motor function. Oculomotor nerve function improved in 2 of 3 cases. Facial nerve function improved in 2 of 2 cases. Spontaneous respiration improved in 1 patient. The postoperative modified Rankin scale scores improved in all 5 cases.

Because of the good results with these 5 patients with PBH, this surgical strategy could be encouraged with exclusion criteria for early initiation of rehabilitation strategies. They hope to increase our number of patients to accumulate further evidence [2].

References

1)
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