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Differentiated Surgical Treatment of Patients With Nontraumatic Intracerebral Hematomas

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Abstract : Objectives. Treatment of hypertensive intracerebral hematoma (ICH) is controversial. Advantage of one surgical method on other has not been established. Recent reports suggest a favorable effect of minimally invasive surgery. We conducted a small comparative study of different surgical methods. Methods. We analyzed the result of surgical treatment of 176 patients with intracerebral hematomas at the age from 41 to 78 years. Men were been113 (64.2%), women - 63 (35.8%). Level of consciousness: conscious -18, lethargy -63, stupor –55, moderate coma - 40. All patients on admission and in the dynamics underwent computer tomography (CT) of the brain. ICH was located in the putamen in 87 cases, thalamus in 19, in the mix area in 50, in the lobar area in 20. Ninety seven patients of them had an intraventricular hemorrhage component. The baseline volume of the ICH was measured according to a bedside method of measuring CT intracerebral hematomas volume. Depending on the intervention of the patients were divided into three groups. Group 1 patients, 90 patients, operated open craniotomy. Level of consciousness: conscious-11, lethargy-33, stupor–18, moderate coma -18. The hemorrhage was located in the putamen in 51, thalamus in 3, in the mix area in 25, in the lobar area in 11. Group 2 patients, 22 patients, underwent smaller craniotomy with endoscopic-assisted evacuation. Level of consciousness: conscious-4, lethargy-9, stupor–5, moderate coma -4. The hemorrhage was located in the putamen in 5, thalamus in 15, in the mix area in 2. Group 3 patients, 64 patients, was conducted minimally invasive removal of intracerebral hematomas using the original device (patent of Russian Federation № 65382). The device - funnel cannula - which after the special markings introduced into the hematoma cavity. Level of consciousness: conscious-3, lethargy-21, stupor–22, moderate coma -18. The hemorrhage was located in the putamen in 31, in the mix area in 23, thalamus in 1, in the lobar area in 9. Results of treatment were evaluated by Glasgow outcome scale. Results. The study showed that the results of surgical treatment in three groups depending on the degree of consciousness, the volume and localization of hematoma. In group 1, good recovery observed in 8 cases (8.9%), moderate disability in 22 (24.4%), severe disability - 17 (18.9%), death-43 (47.8%). In group 2, good recovery observed in 7 cases (31.8%), moderate disability in 7 (31.8%), severe disability - 5 (29.7%), death-7 (31.8%). In group 3, good recovery was observed in 9 cases (14.1%), moderate disability-17 (26.5%), severe disability-19 (29.7%), death-19 (29.7%). Conclusions. The method of using cannulae allowed to abandon from open craniotomy of the majority of patients with putaminal hematomas. Minimally invasive technique reduced the postoperative mortality and improves treatment outcomes of these patients.

Keywords : nontraumatic intracerebral hematoma, minimal invasive surgical technique, funnel canula, differentiated surcical treatment
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