

Skull and brain gunshot wound during the armed conflict in eastern Ukraine.

Optimization of medical care

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A prospective study of the results of treatment of 132 patients with gunshot traumatic brain injury (GTBI), who were admitted to the Municipal Institution "Dnipropetrovsk Regional Clinical Hospital named after I.I. Mechnykov" during the period from May 25, 2014 to December 31, 2015, has been conducted. Injuries were received during a local armed conflict in the east of Ukraine. Surgical tactics issues, complications frequency and nature, reasons for reoperation, mortality among the injured, ways to improve the medical care delivery have been studied.

Results of the study: 93 (70.5%) patients had penetrating traumatic brain injuries (TBI) with the dura injury, and 39 (29.5 %) – nonpenetrating TBI. Injuries with mine and explosive devices debris were diagnosed in 115 (87.1%) patients, and injuries with small arms bullets – only in 17 (12.9%). Rebounding injuries were diagnosed in 52 (39.4%) patients, blunt injuries – in 66 (50%) patients, penetrating injuries – in 9 (6.8%) patients, gutter injuries – in 5 (3.8%) patients. 84 (63.6 %) patients were in a state of impaired consciousness during hospitalization. Combined GTBI were diagnosed in 73 (55.3 %) patients.

Three main tasks during surgical treatment of patients with penetrating TBI have been established: hemorrhage stop; infections prevention; intracranial hypertension prevention and correction. On the basis of own experience and analysis of the literature data about GTBI treatment, 12 main operation stages have been distinguished.

During penetrating injuries surgical debridement all devitalized tissues - detritus, blood clots, aggressive lesions, foreign matters – shall be radically removed; primary reconstruction of the skin, dura, skull base and skull cap shall be used widely.

In the conducted study, 13 different purulent and septic complications were registered. Purulent meningoenkephalitis was diagnosed in 7 cases, ventriculitis – in 3 cases, subdural empyema- in 2 cases, encephalopyosis – in 1 case.

8 complications were referred to the group of dynamic cerebrospinal fluid complications and cerebrospinal system continuity damage. Internal hydrocephalus was diagnosed in 2 patients, injury liquorrhea – in 3 patients, nasal liquorrhea – in 2 patients, cerebrospinal fluid otorrhea – in 1 patient.

Among 132 patients 16 (12.1%) persons died. All 39 patients with nonpenetrating TBI survived as a result of the conducted treatment. Among patients with penetrating TBI mortality rate made 17.2%. Among 16 persons that died during hospitalization to the regional hospital 14

(87.5%) patients were in a comatose state. 2 patients were in coma of level I, 5 patients – in coma of level II, 7 patients – in coma of level III.

The main task of the surgery for penetrating traumatic brain injuries is its execution by the neurosurgeon to the full extent during a single surgery. A perspective direction to improve the results of treatment of patients with head wounds is the realization of conception of the early specialized neurosurgical service with the usage of the early reconstructive neurosurgery tactics.