

**TRAUMATIC BRAIN INJURY: STRUCTURE,
TACTICS OF OPERATIVE OPERATION
(CLINICALLY-EXPERIMENTAL RESEARCH)**

Pavlova T.V., Pavlova L.A., Bokova E.N.,
Pavlov I.A., Nemykin O.N., Nesterov A.V.

*Belgorod State University
Belgorod, Russia*

Traumatic brain injury (TBI) occurs in 30-35% of cases in the structure of traumatism. On its lot there are 75-80% of lethal terminations, and TBI is one of the most important reasons of disability of population. Last 2 centuries in Russia there is also observed the increase of number of cases of traumatism, particularly TBI. The prevalence of this phenomenon reaches 4 - 7,2 cases up to 1 000 of population in different regions [1]. Every year about the 70 thousands of adults and 17,6 thousands of children were considered to be invalids because of traumas of any localizations. While this in the general structure of traumatism to the part of abnormalities of CNS's functions it's a share of 30—40%, and in the structure of disability's reasons — 25—30% [2].

There were examined sick patients, who entered the neurosurgical department of municipal Belgorod clinical hospital №1 over 2004-2007 years inclusive. For the analysis of data were chosen medical carts of stationary sick patients with the serious form of TBI to whom there were giving an operative benefit. In the research there were taken laboratorial animals: rats of "Vistar" line (20 units), were separated on several groups: to the 15 of them there was carried out the resectional trepanation of skull in the right temporal region with the implantation of nanostructural titanic implant with the nanocrystalline hydroxylapatite coverage, and 5 of them were the control group (false operated). Histological preparation were tintured with hematoxylin and eosin and were researched in the light microscope «TOPIS-T» CETI. Bone lamella were pulled out with the implant and without supplementary treatment were examined and photographed in the raster electronic microscope Quanta 200 3D. The examination of bone tissue were carried out through 7, 14, 21 days.

Through the examined period were chosen 189 medical reports, from which to the part of men it's a share of 158 (83,6%) humans, women - 31 (16,4%). Patience were carried out 3 types of operative intervention: resectional trepanation of skull – 146 cases (77,3%), bone-plastic trepanation of skull with the moving of bone flap - 8 (4,2%). The prevalence of resectional trepanation of skull is conditioned by indications to the decompression of brain, and also by the presence of traumatic defects of bones of calvarium (linear and pressed fractures that make the fulfillment of bone-plastic trepanation of skull impossible). The presence of postoperational defect leads not only to the cosmetic inferiority but also to the development of posttrepanational syndrome: cephalgia, meteorolabil-

ity, hydrocephaly. The regress of all above-listed is observed after the restoration of skull's integrity. Therefore in the late postoperative period it's reasonable to carry out the plastic of bone defect. Thereby TBI holds its leadership between the injuries of other anatomico-physiological regions of body of humans. While this it has the huge socially-economic mean, because the majority of victims are reckoned among the capable of working population.

More currency is gain by the use of different materials for the implementation of plastic of posttrepanational defect [3,4]. Among the examined clinic cases in the capacity of materials for the cranioplasty were used osteobond - 10 (45,5%), titanium - 2 cases (9,0%) и autobone - 10 (45,5%).

It was revealed that operative treatment with the use of titanic implants with the calcium-phosphate covering from the nanocrystalline hydroxylapatite promotes better regeneration of bone tissue. While this there isn't observed the phenomenons of intoxication and development of nanopathology [5]. The use of innovative methods of allo transplantation makes possible the fast and aurtomatic the healing of bone structures. Adequate leading of postoperational period is necessary condition of favourable outcome of consequences of TBI. It is supposed in the sequel the use of implants from the recreated nanomaterials.

References

1. Public health in Russia, 2007: editorial board: Surinov A. E. and others. – Moscow, 2007. – p. 56.
2. The morbidity of Russia's population in the 2003 year: static materials. In 2 parts, part II - Moscow: GEOTAR-MED, 2004. – p. 125.
3. Pavlova T.V., Mesentsev U.A., Pavlova L.A., Nesterov A.V., Kolesnicov D.A. // Fundamental researches №8 2009.- P 25-28.
4. Pavlova T.V., Pavlova L.A., Pavlov I.A., and others// System analysis and direction in the biomedical systems.-2007.-V.6, №2.- P.364-366.
5. Pavlova T.V., Kriveckii V.V., Pavlova L.A., Mesentsev U.A.// System analysis and direction in the biomedical systems.-2009.-V.8, №2.- P.314-316.

The work was represented to the international science conference "Modern problems of experimental and clinical medicine", Thailand, February 20-28, 2010. Came to the editorial office on 30.01.2010.

**EMBRYONIC DEVELOPMENT OF INFERIOR
VENA CAVA**

Petrenko V.M.

*St.-Petersburg State Medical Academy
named after I.I. Mechnikov
St.-Petersburg, Russia*

Initiation of inferior vena cava (IVC) appears with embryo 5 mm length (4 weeks) as excrescence of vitelline- umbilical trunk. It unites sinusoids of caudate lobe of liver. 6 week embryos' IVC includes right