

## **TRANSPLANTATION OF SPLEEN (INDICATIONS, SURGICAL ASPECTS, COMPLICATIONS, PROPHYLAXIS)**

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The transplantation of haematogenic organs is a very perspective branch of the modern surgery. The study and application of transplantation of spleen (TS) in clinical conditions perform new possibilities for the treatment of certain disorders in the haemopoiesis, immunogenesis, acute radiation damages, leucosis, malignant formations and many other immunodeficient states.

A. Carrel was the first to transplant spleen experimentally in 1908 when he considered that there were no technical problems for such operation. However, later, a number of investigators (A. G. Kulligin, 1969;) added new ideas for the location of the graft in the recipient's organism, including some methods of orthotopical and heterotopical spleen transplantations.

When sectioning the vessels it must be considered that the average diameter of spleen artery of dogs is 3—4 mm, whereas the veins are 5—6 mm. In the places of crossing of vessels the lumen of arteries is twice thinner due to spasm. We are able to overcome this event with certain reliability by application of 5000 U heparin in the arterial lumen, as well as paraarterial novocain blockade (2 ml — 2 %) and 2 % dimedrol solution on the vessel walls superior to the place of crossing of arteries. Special attention require vein walls: they are thin, easily torn, their intima can hardly be connected with surgical stitches of the vessel walls.

Complications: 12—24 hours after operation we lost 8 dogs due to cardiac insufficiency. The sectional investigation with autopsy of the animals shew vessel anastomosis and considerably enlarged transplants (spleens). The livers were also increased in dimentions, whereas myocardium was relatively soft. Two dogs delivered 80—100 ml exudation with blood from their abdominal cavities. There were no disorders from the rest organs.

The lower percent of cardio-vascular complications in the posttransplantation periods in our experiments was due to the shorter duration of the transplant ischaemia and thorough washing of the latter by recipient's blood, as well as by application of cardiac preparations for prophylaxis.

Thrombosis of the vessel anastomosis was the reason for death of 10 animals (20 %) from our experiment. In the course of autopsy of the vessels was found that the thrombs were dispersed approximately 2—3 cm distally from the vein anastomosis. Stenosis and constriction of the anastomosis up to 1.5—2 mm was registered with 7 from 10 cases. Similar opinion have some other authors who also presume that together with the well-known Virchoff triade (vascular trauma, haemostasis, biochemical blood disorders) for the transplantation of organs, specially immunohaemopoietic, certain significance show the washed from the transplants thrombogenic factors, the formation of the complex antigen-antibody,

intravascular haemolysis, acidosis and microcirculation disorders, which undoubtedly are developed in various degrees and states in the transplants (R. P. Askherchanov, 1982; L. F. Koblov, 1983).

In our experiments rarer and less dangerous formation of thrombosis in the region of vascular anastomosis was a result of shorter ischaemic period of transplants, better technique of vessel sewing and stitches, heparin application during operation and anticoagulative correction of coagulopathies in postoperative periods.

The considerable percent (12 %) of infectious complications with the operated dogs after TS can be explained by transplant destruction and total intoxication of the organism. A. G. Kulligin (1969) had considerable successes in decreasing the infectious complications by perfusions of the transplant in advance by a heparin solution. Our experience prove that a selective antibiotic prophylaxis was more effective than their application against the background of the already developed infectious complications.

Haemorrhages were registered with 5 dogs. The reason for a massive haemorrhage (300—400 ml) in the abdominal cavity of 3 of the dogs was a rupture of the haemostatic spleen at several (2—3 or 4) places. The fourth dog had haemorrhages from the anastomosis. As for the fifth, one hour after operation began haemorrhage from the capillaries of the operative wound. Two hours later the dog died with still continuing haemorrhage. With autopsy investigation was found about 300 ml uncoagulated blood in the abdominal cavity of the animal. This was undoubtedly a case of an acute fibrinolysis.

Therefore, from all 50 animals with allogeneic spleen transplantation and without any immunodepressive preparations 29 (58 %) dogs shew complications in connection with the operative intervention. Most often they were due to coagulopathic disorders, i. g. thrombosis, haemorrhages, etc. (15 animals).

A fine and perfect operative technique, shorter ischaemic period of the transplants and thorough washing by donor's blood, as well as an adequate application of anticoagulators in postoperative periods tend to decrease the number of such complications and thus recipients' death.

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## ТРАНСПЛАНТАЦИЯ СЕЛЕЗЕНКИ (ИНДИКАЦИИ, ХИРУРГИЧЕСКИЕ АСПЕКТЫ, ОСЛОЖНЕНИЯ, ПРОФИЛАКТИКА)

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## РЕЗЮМЕ

На 50 собаках проведена серия экспериментов с пересадкой селезенки. В работе обсуждаются все аспекты, связанные с экспериментальной работой: выживаемость животных, хирургические проблемы пересадки, некоторые осложнения со стороны сердечнососудистой системы и всего организма подопытных животных. На основании выводов предлагаются важные мероприятия в целях улучшения результатов пересадки.