CLINICO-ANATOMICAL RELATIONSHIP OF THE NEUROVASCULAR AND LIGAMENTOUS STRUCTURES OF THE SPINE

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Background. Anatomical protection of epidural venous system during transforaminal approaches is an important advantage. Minimally invasive approaches, such as the lateral transpsoas approach, were developed in an attempt to minimize the morbidity and complications associated with the traditional approaches. In order to evaluate for anomalous anatomy good intraoperative fluoroscopy is necessary and preoperative imaging studies are important. Additionally, there are many clinical cases describing the symptomatic epidural venous engorgements and anatomic variations in the literature. The paravertebral and epidural venous engorgements associated with inferior vena cava stenosis may also lead to neurogenic symptoms similar to lumbar disc herniation or foraminal stenosis. High venous pressure in ascending lumbar-lateral sacral veins raises the pressure of the valveless epidural venous plexus, intercommunicates the internal and external venous network, providing the continuity of the venous blood flow between spinal cord and inferior vena cava. Collateral pathways developed to compensate for increasing venous blood flow in inferior vena cava stenosis may give rise to symptomatic epidural venous engorgements. The internal vertebral venous plexus was connected to segmental veins outside the vertebral column via intervertebral veins that run through the intervertebral foramen. The veins from the erector spina drained into intervertebral veins. Cutaneous veins entered the vertebral canal by piercing the ligamentum flavum which implies that were drained to the veins into the intervertebral foramina. Veins were connected with the posterior internal vertebral venous plexus to the veins of the skin at the upper lumbar levels. In order to minimize the risk of important complications during lateral transpsoas approach patient selection and careful preoperative planning is necessary. Additionally, injury to nerve roots and perforation into the anterior annulus fibrosis and anterior longitudinal ligament with major vascular injury is rare during surgical approaches. However, serious complications may occur due to the proximity of the intervertebral disc to adjacent neurovascular structures. These major vessels include the abdominal aorta, the inferior vena cava, and the common iliac arteries and veins, situated directly anterior to the lumbar spine. Injury to the great vessels and sympathetic and superior hypogastric plexus anterior to the intervertebral disc should be always kept in mind during disc surgery and instruments should not be inserted much into the disc space.

PATHOMORPHOLOGICAL CHANGES OF SPLEEN IN DYNAMICS OF EXPERIMENTAL SEPSIS OF DIFFERENT ETIOLOGIES

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Aim. The comparative morphological studies of spleen in dynamic of experimental sepsis of different etiologies were conducted.

Material and Methods. Experiments were carried out on 15 mature chinchila rabbits of both sexes. Sepsis was caused by staphylococcus aureus (I series of experiments) and by simultaneous infection of animals by staphylococcus aureus and staphylococcus epidermidis (II series of experiments); intravenous injection of staphylococcal toxin (0.06 ml) has been performed, which after 48 h was followed by intraperitoneal injection of bacterial culture.

Results and Discussion. Spleen tissue was taken after having sacrificed the animals, on 13th and 14th days after bacterial contamination and investigated by histological and morphometric methods. In both series of experiments, on 13th and 14th days after bacterial contamination, the similar increasing changes like microcirculatory disturbances and dystrophic-necrotic changes were observed. Red pulp of the spleen is overflowing with red blood cells; in the sinusoids is observed aggregation of erythrocytes. In spleen tissue are found hemorrhages as well. Were revealed oedema of lymphoid nodules and red pulp, swelling and thickening of the walls of blood vessels, they are infiltrated with blood cells. In some cases boundaries of splenic lymphoid nodules are unclear, poorly distinguished from the red pulp. On 14th day after bacterial contamination, in both series of experiments, mean volume and number of splenic lymphoid nodules are statistically significantly decreased in comparison with the control. By comparison of results of morphometric study of I and II series of experiments no statistically significant differences were detected. The comparison of measured values of rabbit spleen on 13th and 14th days after bacterial contamination did not show any statistically significant differences.