Summary

The lymphocele is a surgical transplant complication resulting from lymphatic vessels injury. This injury is background of the lymphocele pathogenesis, no lymphocele cannot become into existence without this step. On the other hand, the all organ procurement and transplantation procedures are associated with any rate of this injury at all time.

Our results present proteins as a very important factor influencing interstitial fluids transport. The colloid osmotic pressure of the proteins controls interstitial fluids flow even across the vessel walls. Lymph fluid flow is also under the osmotic pressure control. The proteins play serious role in the second phase post-transplant lymphocele pathogenesis. At first, proteins control return of the leaked lymph back into the lymphatic vessels. Finally, inflammatory proteins participate on development of the fibrous lymphocele capsule.

Postoperative care for protein metabolism seems to be very important in the protection against the post-transplant lymphocele formation. Carefully metabolic care for patient after renal transplantation should help to decline risk of lymphocele.

The knowledge of the pre-transplant protein level and its fractions is very useful for relevant estimation of the risk of the post-transplant lymphocele formation. Calculation of the Lymphocele Formation Risk Index seems to be useful instrument for evaluation of patients in high risk of the lymphocele development.

$$\textbf{LFRI = albumin / (} \alpha_1 \textbf{-globulin + } \gamma \textbf{ -globulin)} \qquad \textbf{(cut-off = 2,5)}$$

LFRI calculates with albumins, α_1 -globulins and γ –globulins. Albumins act as the protective factors. The α_1 -globulins and γ –globulins are metabolic factors supporting fibrous capsule formation. Surgery in high risk cohort of patients has to be done very carefully, with meticulous preparation of all structures. This is possible way how to decline lymphatic leakage as the first step of the lymphocele pathogenesis.

Enzymatic analysis is simple tool for estimation of the lymphocele origin. Till now no method how to find a lymphocele origin was described. Enzymatic analysis is a possible instrument, how to approximately detect primary source of lymphatic leakage. It could help us to improve surgical technique and finally improve results of transplantations.

The performed animal laboratory experiment has shown the possible way, how to experimentally induce the escape of the lymph into the retroperitoneal space. How to make a suitable model for study of different factors playing role in the lymphocele pathogenesis. On the other hand, our results show that laboratory rat is not an animal suitable for experiment on the lymphatic system because of very intensive tissue regeneration ability. We have to find the other animal for this kind of experiment to reach an optimal results.

This work brings a new, not yet published point of view on the old problem - lymphocele. Detail understanding of more steps of its pathogenesis can help us successfully cope with this complication. Detail background understanding even can help us to prevent its coming into existence. It should be our objective number one in general.

This paper offers to answer questions declared as the aims of this work and these informations are clinically usable.