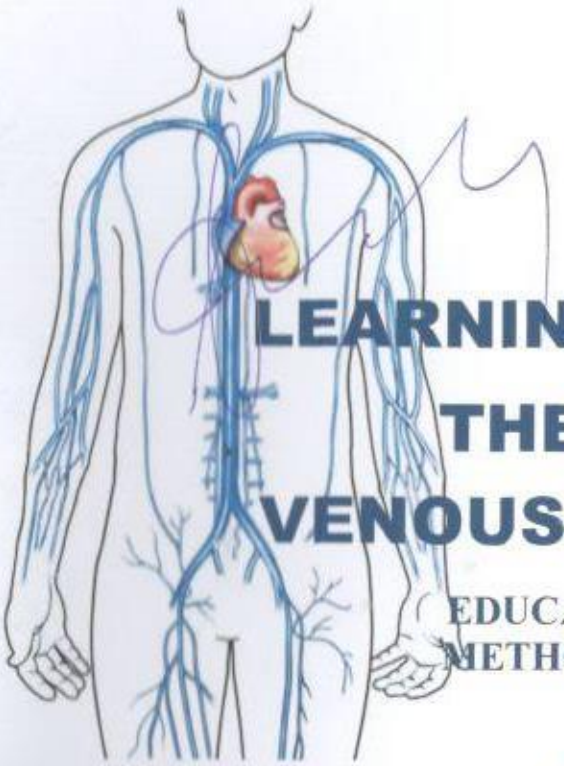
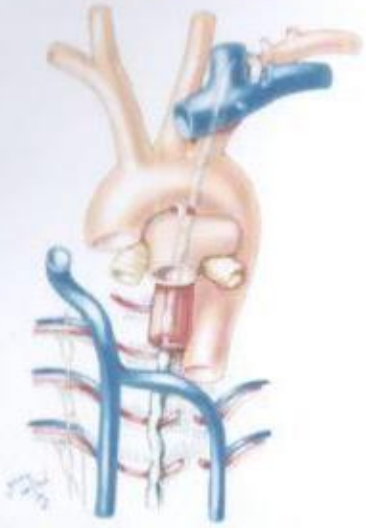
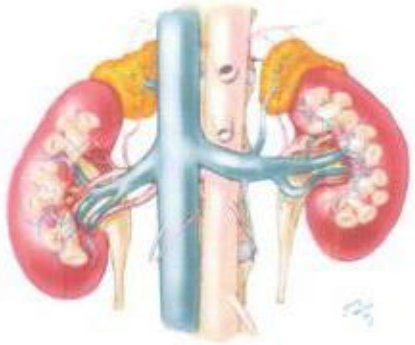


LEARNING GUIDE

THE HUMAN VENOUS SYSTEM

EDUCATIONAL AND METHODOLOGICAL GUIDE





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L33. Руководство по обучению венозной системы человека: для студентов по специальности «Лечебное дело» (GM): учебное-методическое пособие/ С.Дж. Джолдубаев, Б.К. Кенешбаев, К.Ш. Сакибаев, М.К. Нуруев, Саид Али Аббас. Learning Guide the human venoussystem: for students of the specialty "General medicine" (GM) **(training manual)** / S.Dzh. Dzholdubaev, B.K. Keneshbaev, K.Sh. Sakibaev, M.K. Nuruev, Syed Ali Abbas Rahat– Ош-: Изд-во «Билим», ОшГУ, 2021. – 38с.

Настоящее учебное пособие, предназначено для самостоятельной работы студентов при изучении анатомии артериальной системы человека. Пособие содержит краткий обзор венозной системы человека, а также схематические рисунки по анатомии и топографии вен и их ветвей и анастомозов.

Латинские термины приведены в соответствии с Международной анатомической номенклатурой, принятой Федеративным комитетом по анатомической терминологии (FACT, 1998)

Пособие предназначено для аудиторной и внеаудиторной работы студентов, ординаторов по специальности «Лечебное дело» (GM) медицинских ВУЗов.

Ученым советом международного медицинского факультета Ошского государственного университета.

This textbook is intended for independent work of students in the study of the anatomy of the human venoussystem. The manual contains a brief overview of the human venous system, as well as schematic drawings on the anatomy and topography of veins, branches and anastomoses.

Latinterms are given in accordance with the International anatomical nomenclature adopted by the Federal Committee on anatomical terminology (FACT, 1998)

The workbook is made for classroom and extracurricular work for students and residents of speciality "General medicine" of medical universities.

Approved and recommended for publication by the Academic Council of the international medical faculty of Osh state University.

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Clinical anatomy of the venous system

The veins carry blood from the organs to the heart. Their wall is arranged according to the same plan as the wall of the arteries, but it is much thinner, it has less elastic and muscle tissue, and there is no internal elastic membrane. The reverse flow of venous blood is prevented by special devices-valves. The valves are parietal folds formed by the intima of the veins, always open towards the heart, prevent retrograde blood flow, and cause a uniform and smooth change in pressure in the veins. The pressure and, accordingly, the speed of blood flow in the veins are much lower than in the arteries. The capacity (total diameter) of the venous system in a large circle of blood circulation is almost twice the capacity of the arteries, which is expressed in a larger number and larger diameter of venous trunks, and often one artery corresponds to two veins (veins of the extremities). In addition, a large number of venous plexuses allow some organs to accumulate a significant amount of blood-the "depot" of blood (liver, spleen).

To characterize the venous bed, the following concepts are used: the vein collector, the vein basin, the main venous systems, the roots and tributaries of the veins, cava-caval and port-caval anastomoses; for veins, the convergent (converging) principle of vascular distribution is characteristic.

A vein collector is a chamber of the heart (atrium) or a venous trunk that receives blood through a vein of the previous order. For example, for the superior and inferior vena cava, the collector is the right atrium, and for the brachiocephalic veins - the superior vena cava. The vein basin is the area of the body from which blood is drained into the extra-organ vein.

The main venous systems are the superior vena cava system, the inferior vena cava system, and the portal vein system.

The roots of a vein are the vessels from which a larger venous trunk is formed. For example, in relation to the superior vena cava, the roots are the brachiocephalic veins; the roots of the inferior vena cava are the common iliac veins. Tributaries are venous vessels that flow directly into the trunk of the vein. For example, the tributary of the superior vena cava is the unpaired vein.

Anastomoses between the veins (roots or tributaries) of the upper and lower vena cava system are called cava-caval, and between the veins of the vena cava system and the veins of the portal vein system are called port-caval. Port-caval and cava-caval anastomoses are intersystem. Between the roots and tributaries of the veins within the same system, there are numerous intra-system anastomoses. Anastomoses serve as a substrate (basis) for the development of blood flow pathways (collaterals). According to the arteries, the veins can be divided into the veins of the small and large circles of blood circulation; by belonging to large venous highways - to the venous basins (systems) of the upper, lower vena cava and portal veins; by regional sign – to the veins of the trunk, limbs, head and neck.