

A Brief Note on the Structure of the Inferior Vena Cava

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Description

The inferior vena cava is a major vein that transports deoxygenated blood into the right atrium of the heart from the lower and middle bodies. It is generated by the union of the right and left common iliac veins, which normally occurs at the fifth lumbar vertebra level. The inferior vena cava is the smaller (inferior) of the two big veins that bring deoxygenated blood from the body to the right atrium of the heart: the inferior vena cava carries blood from the lower half of the body, while the superior vena cava carries blood from the upper half. The venae cavae (together with the coronary sinus, which delivers blood from the heart muscle itself) make up the aorta's venous equivalents. It is a big retroperitoneal vein that runs down the right side of the spinal column and lies posterior to the abdominal cavity. It enters the right auricle on the rear side of the heart, lower right. The name comes from the Latin words *vena*, which means "vein," and *cavus*, which means "hollow."

Structure

The IVC connects the left and right common iliac veins and transports blood to the heart's right atrium. It also connects to the azygos vein (on the right side of the vertebral column) and the venous plexuses near the spinal cord. At about the level of L5, the inferior vena cava originates where the left and right common iliac veins join behind the abdomen. At the caval hole between T8 and T9, it enters through the thoracic diaphragm. It crosses the descending aorta to the right.

Development

The valve of the inferior vena cava, commonly known as the Eustachian valve, separates the inferior vena cava and right

auricle in the embryo. This valve has typically regressed or remains as a tiny fold of endocardium in adults.

Function

In the embryo, the inferior vena cava valve, also known as the Eustachian valve, separates the inferior vena cava from the right auricle. In adulthood, this valve usually regresses or remains as a small fold of endocardium.

Clinical significance

Compression of the IVC is the most common cause of health concerns related with it (ruptures are rare because it has a low intraluminal pressure).

An enlarged aorta (abdominal aortic aneurysm), the gravid uterus (aortocaval compression syndrome), and abdominal malignancies such as colorectal cancer, renal cell carcinoma, and ovarian cancer are common sources of external pressure. Because the inferior vena cava is largely a right-sided structure, pregnant women who are unconscious should be shifted to their left side (the recovery position) to relieve pressure on it and allow for venous return. In rare situations, defecation-related straining might cause a reduction in blood flow via the IVC, resulting in syncope (fainting). The blockage of the inferior vena cava is uncommon, yet it is a life-threatening disorder that must be treated immediately. Deep vein thrombosis, IVC filters the liver transplants, and surgical procedures such as catheter insertion in the femoral vein in the groin are all linked together.