

# PERIPHERAL VASCULAR ANATOMY

The main **indications for central venous cannulation** are;

## Measurement

- Central venous pressure
- Pulmonary artery catheterization and monitoring
- Frequent blood testing

## Non Drug Interventions

- Transvenous cardiac pacing
- Temporary hemodialysis
- Aspiration of air emboli

## Drug Administration

- Concentrated vasoactive drugs,
- Hyperalimentation,
- Drugs irritating to peripheral veins,
- Prolonged IVABs (endocarditis)

## Rapid infusion of fluids (through large cannulas)

## Inadequate peripheral access

The main **complications** are

## Mechanical

- Vascular injury (arterial or venous)
- Cardiac tamponade
- Respiratory compromise
- Airway compression from hematoma
- Pneumothorax
- Nerve injury
- Arrhythmias

## Thromboembolic

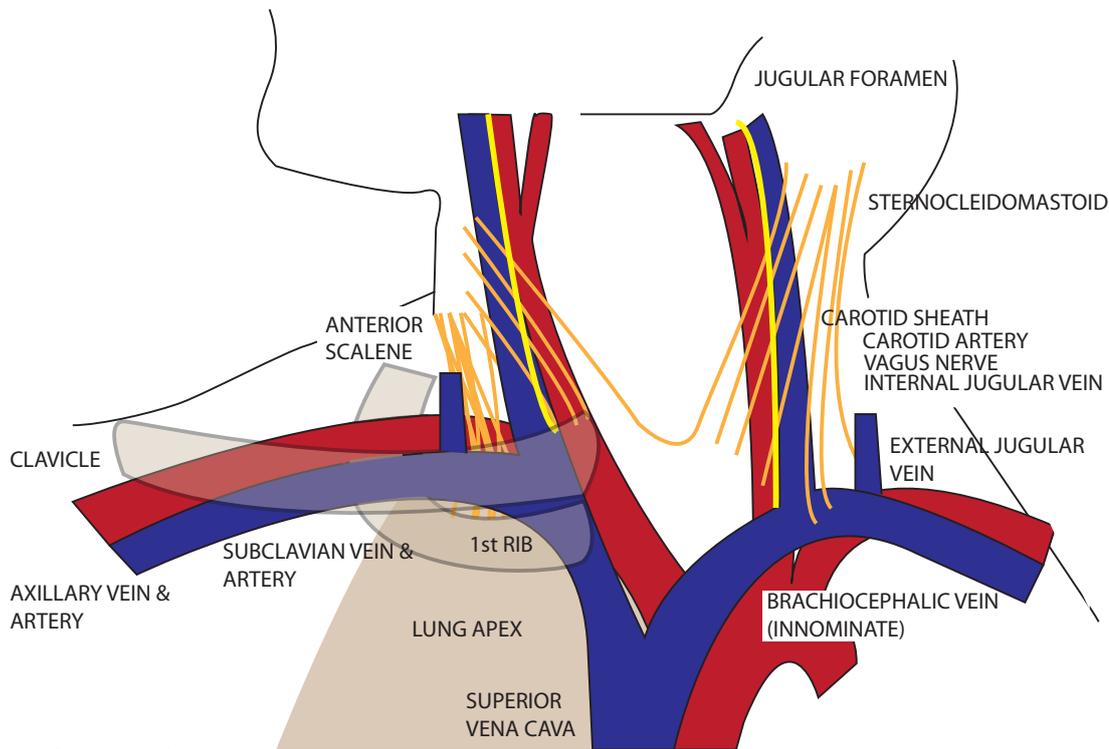
- Venous thrombosis
- Pulmonary embolism
- Catheter or guidewire embolism

## Infectious

- Insertion site infection
- Catheter infection
- Bloodstream infection
- Endocarditis

## Misinterpretation of data

## Misuse of equipment



## The internal jugular vein

Origin	From the <b>jugular foramen</b>
Terminates	Behind the sternoclavicular joint in the <b>Subclavian Vein</b>
Course	Relatively straight course in the neck, it lies with the carotid artery and the vagus nerve <b>within the carotid sheath</b> . superficial in the upper part of the neck before it <b>descends deep to the sterno-cleidomastoid muscle</b>
Anterior	<b>Superficial fascia</b> superiorly and <b>SCM inferiorly</b>
Posterior	Vertebral muscles, sympathetic chain and thoracic duct (L only)
Medial	The carotid arteries, and CNX as well as CN IX, XI and XII.
Lateral	<b>SCM</b> and CN XI inferiorly

## The external jugular vein

The external jugular vein **begins near the angle of the mandible** (just inferior to the auricle of the external ear) by the union of the posterior division of the **retromandibular vein** with the **posterior auricular vein**. The EJV **crosses the SCM** obliquely, deep to the platysma, and then pierces the investing layer of deep cervical fascia, which forms the roof of this region, at the posterior border of the SCM. The EJV descends to the inferior part of the lateral cervical region and **terminates in the subclavian vein**.

## The subclavian vein

Origin	From the <b>axillary vein</b>
Terminates	Behind the sternoclavicular joint in the <b>internal jugular vein</b> to become the <b>brachiocephalic vein (innominate)</b>
Course	Commencing from the axillary vein medially it receives flow from the external jugular vein, progressing anterior to the anterior scalene muscle which separates the SCV and artery. It crosses travels over the <b>superior surface of the first rib forming a slight groove</b> . It then <b>arches up</b> medially then down to join the IJV and form the brachiocephalic.
Anterior	Posterior surface of the <b>Clavicle</b>
Posterior	<b>Anterior scalene muscles</b> , subclavian artery
Medial	Thoracic duct, brachiocephalic trunk
Laterally	Lower trunk brachial plexus
Inferior	<b>First Rib, first intercostal space and apex of the lung</b>