1. Importance of vasculature to in relation to the immune system and outbreak of pandemic Covid-19

Vasculature refers to the vascular system of a part of the body and it's arrangement.

When the virus enters your body it binds to two cells in the lungs - goblet cells that produce mucus and cilia cells which have hairs on them and normally prevent your lungs filling up with debris and fluid such as virus and bacteria and particles of dust and pollen. The virus attacks these cells and starts to kill them - so your lungs begin to fill with fluid making it hard for you to breathe. This phase of the disease is thought to last about a week.

At this point your immune system will start to kick in and fight off the invaders. You will develop a fever and your high body temperature will create a hostile environment for the virus. You will start to get rid of the mucus in the form of coughing and a runny nose.

But in some people - particularly the elderly and those with other health conditions - the immune system can go into overdrive. As well as killing the virus it also starts to kill healthy cells.

This heightened immune response can trigger a “cytokine storm” - white blood cells activate a variety of chemicals that can leak into the lungs, which along with the attack on the cells damages them even further. Scans of the lungs show “ground-glass” opacity and then “crazy paving” patterns, as they fill with mucus making it harder and harder to breathe.

Bacterial infections can also take hold at this point and your weakened immune system will struggle to fight them off.

2. The Subartorial canal is an important area in the lower limb. Discuss

The Subartorial canal also known as the adductor canal is a narrow conical tunnel located in the thigh extending from the apex of the femoral triangle to the adductor hiatus of the adductor magnus. The canal serves as a passageway from structures moving between the anterior thigh and posterior leg.

Borders

The adductor canal is bordered by muscular structures:

Anteromedial: Sartorius.

Lateral: Vastus medialis.

Posterior: Adductor longus and adductor magnus.

Contents

The adductor canal serves as a passageway for structures moving between the anterior thigh and posterior leg.

It transmits the femoral artery, femoral vein (posterior to the artery), nerve to the vastus medialis and the saphenous nerve – the largest cutaneous branch of the femoral nerve.

Clinical Relevance - Adductor Canal Block

In the adductor canal block, local anaesthetic is administered in the adductor canal to block the saphenous nerve in isolation, or together with the nerve to the vastus medialis.

The sartorius and femoral artery are used as anatomical landmarks to locate the saphenous nerve.

3. Describe the Extraocular and Intraocular muscles with their nerve supply

The extraocular muscles are the six muscles that control movement of the eye and one muscle that controls eyelid elevation (levator palpebrae). The actions of the six muscles responsible for eye movement depend on the position of the eye at the time of muscle contraction. It originates from Annulus of Zinn, maxillary and sphenoid bone. Inserts into the Tarsal plate of upper eyelid, eye. It is innervated by the Oculomotor, trochlear and Abducens nerve. The major blood supply to the orbit is supplied by the Ophthalmic artery which branches off to the internal carotid artery

The intraocular muscles include the ciliary muscle, the sphincter pupillae, and the dilator pupillae. The ciliary muscle is a smooth muscle ring that controls accommodation by altering the shape of the lens, as well as controlling the flow of aqueous humor into Schlemm's canal. The ciliary muscle is attached to the zonular fibers which suspend the lens. It is innervated by the short ciliary nerve and long ciliary nerve, temporal and zygomatic branches of the facial nerve.