

Cerebrospinal Fluid

Cerebrospinal Fluid (CSF) is also known as **liquor**. It is produced by modified ependymal cells of the choroid plexus and occupies the space between the arachnoid mater and the pia mater. In the spinal cord is found in the central canal. It contains 0.3% plasma proteins and also other soluble salts found in plasma. It is reabsorbed into the venous system in order to prevent pressure build up in the subarachnoid spaces and brain ventricles, by the arachnoidal granulations. It's an isotonic solution, which acts as a cushion providing mechanical protection to the cortex of the brain and also plays an immunological role. For the latter reason, lumbar punctures are performed in order to obtain CSF and carry out diagnosis of various infections.

Circulation of CSF

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Clinical CSF Findings

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Lumbar Puncture

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Also known as "spinal tap" or "LP". This procedure is done when it is necessary to collect cerebrospinal fluid from the patient.

Indications

- Suspicion of meningitis
- To rule out subarachnoid hemorrhage.
- To detect antibodies in CNS diseases for instance multiple sclerosis.
- To detect malignant infiltrates in blood malignancies.

Contraindications

- When the skin where the needle enters is infected.
- When the pressures between the infratentorial and supratentorial compartments are not balanced.
- Midline shift

Procedure

The doctor will place the patient in a lateral position (left or right) with the neck bent in full flexion and knees bent in full flexion up to his/her chest, similarly to the fetal position as much as possible. A spinal needle is inserted above or below the L4 vertebra. At that level spinal cord comprises of floating filaments, the cauda equina, thus avoiding any actual puncture on the spinal cord. The needle will pass the ligamentum flavum, and penetrate the dural sac in order to reach and puncture the arachnoid, to enter the subarachnoid space, where the CSF is located.

Links

Related articles

- Meninges
- Blood Brain Barrier

Bibliography

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