Cerebrospinal fluid collection, analysis, procedures and its clinical significance role in neurological diseases.

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Abstract

Cerebrospinal Fluid (CSF) is a clear fluid that circulates in the intracranial and spinal compartments. Under normal conditions, the composition of sake remains constant. CSF maintains the electrolyte environment of the Central Nervous System (CNS), influences the acid-base balance of the system, acts as a mediator of nutrition for neuronal and glial cells, serves as the lymphatic system of the CNS and removes waste products. To do of cellular metabolism and hormones, neurotransmitters, releasing factors and other neuropeptides transported through the CNS. The delicate balance between cerebrospinal fluid secretion, composition, quantity and turnover is tightly regulated. Cerebrospinal fluid sampling is a test that examines the fluid surrounding the brain and spinal cord. CSF acts like a cushion, protecting the brain and spine from injury. Liquids are usually clear. It has the same consistency as water. This test is also used to measure spinal fluid pressure. Cerebrospinal fluid is a clear, colorless, watery fluid that flows in and around the brain and spinal cord. The brain and spinal cord make up the central nervous system.

Keywords: Oral cancer, Oral-Maxillofacial Surgery, Surgery planning, Oral surgery imaging.

Introduction

Cerebrospinal fluid is a clear liquid that forms as an ultrafiltrate of blood plasma. CSF is present in both the intracranial and spinal compartments. It is continuously secreted at a constant rate into the ventricles *via* the choroid plexus and circulates through the subarachnoid space of the brain and spinal cord *via* the cerebrospinal fluid pathway [1].

Tests to be performed:

- ✓ Lie on your side, draw your knees into your chest and pull your chin down. Sometimes I do the test sitting down, but I lean forward.
- ✓ After washing your back, your doctor will inject a local anesthetic (anesthetic) into your lower spine.
- ✓ A spinal needle is inserted.
- ✓ Occasionally a starting pressure is taken. Abnormal pressure may indicate an infection or another problem.
- ✓ With the needle in place, CSF pressure is measured and 1-10ml of her CSF sample is collected in her four vials.
- ✓ Remove the needle, clean the area and apply a bandage to the needle site. After the test, you may be asked to lie down for a while [2].

Analysis

Elevated Intracranial Pressure (ICP) after nerve injury has been reported in many disorders, including hydrocephalus, idiopathic Intracranial Hypertension (IIH), edema, Traumatic Brain Injury (TBI) and stroke. Uncontrolled ICP elevation can worsen outcomes, and several manipulations have been suggested to mitigate ICP elevation. The deleterious consequences of uncontrolled ICP emphasize the importance of maintaining ICP homeostasis within the central nervous system "CNS". Cerebrospinal fluid is an important part of maintaining a stable ICP and disturbances in secretion or drainage can cause her ICP to rise. However, a meaningful review of CSF involvement in elevated ICP in CNS pathologies is currently lacking [3].

Result:

CSF analysis may involve various different tests on the sample. Therefore, the test result measure depends on the tests performed. Providers can explain what the results mean. In general, the results of CSF analysis may indicate an infection, an autoimmune disease such as Multiple Sclerosis (MS) or another brain or spinal cord disease or injury. Your doctor may do further tests to confirm your diagnosis [4].

Role:

CSF analysis is a series of tests that use a sample of cerebrospinal fluid to help diagnose diseases of the brain and spinal cord and other disorders that affect the central nervous system. CSF supports the brain by providing protection, nutrition, and waste disposal. CSF provides hydrodynamic protection of

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the neural axis through two mechanisms. Another function of CSF is to maintain interstitial fluid homeostasis in the brain. A stable environment in the brain parenchyma is essential for maintaining normal neuronal function [5].

Conclusion

Cerebrospinal Fluid is the plasma ultrafiltrate contained in the ventricles and the subarachnoid space of the skull and spine. It performs important functions such as providing food, removing waste products and protecting the brain. CSF provides a highly valuable matrix for biomarker research for a variety of purposes, including diagnostics, prognostic monitoring and identifying salient signatures of neuronal injury signaling pathways. This fluid also removes waste products from the brain and helps the central nervous system to function properly. It can determine the diagnosis, severity and prognosis of neurological conditions such as, demyelinating conditions and tumor-like conditions. This review enumerates changes in CSF components and their relevance for emergency physicians to support patient care.

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