

Indications for operative repair of the traumatic skull base CSF fistula

Introduction

Fractures of the skull base which would traverse the middle ear or paranasal sinuses, can be associated with dural tear and may be accompanied by a fistula of the CSF. CSF fistula can be seen in about 10 to 20 percent of the patients with skull base fractures. Because of the late maturation and development of the paranasal sinuses in young children, CSF fistula formation is not usual in this patients group. Anterior fossa is a place which CSF leaks are more common to be happened at that, in comparison with middle and posterior cranial fossa.¹⁻³

There are some indications for operative repair of the CSF fistula in the skull base trauma setting. Meningitis development while treating the CSF leakage with a conservative treatment method, failure of the conservative treatment, pneumocephalus and persistent leakage of the CSF, delayed CSF leakage, CSF leakage in penetrating trauma, recurrent CSF leakage and severe defect in the anterior skull base with brain herniation through the defect of the skull, are some indications for operation. In case there would be CSF leakage in spite of lumbar drainage in more than seven to ten days after the time of the injury, conservative therapy would not be effective anymore and there should be operative repair to be done for the CSF leakage.⁴ Having a high risk for developing meningitis, delayed CSF leakage, pneumocephalus and large dural tear, external brain herniation and penetrating injuries are the indications for early surgery which conservative therapy should not be considered in such cases. The best time for surgical repair depends on various factors like ongoing risk for meningitis development and risk of frontal lobe retraction during skull base exposure when there would be a swelling in the brain tissue due to the trauma. Frontal lobe swellings would be decreased in about 10 days after the occurrence of trauma, which allow enough retraction to expose anterior skull base.⁵ For traumatic otorrhea, surgical repair is usually not necessary since it would be resolved in about 14 days after the injury.^{6,7} Because of this fact, conservative management of CSF otorrhea should be considered for longer periods after the injury and in few cases which such conservative treatment strategy would be failed, operative repair can be considered.⁸

Having knowledge about the indications for operative repair of CSF fistula in skull base traumatic settings, can be of importance to manage such cases by choosing conservative or surgical treatment strategies, properly.

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Conflicts of interest

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