Introduction

Leakage of cerebrospinal fluid (CSF) rhinorrhea is a result of meningeal laceration with fistula formation. High risk of recurrent infectious meningitis is a dangerous problem, and if the fistula does not close spontaneously, the operative repair of the meningeal defect must be performed. Accurate preoperative localization of the site of leakage is mandatory.

Purpose

The study aims to describe the gadolinium-enhanced Magnetic Resonance Cisternography (GdMRC) findings, and the technical procedure in CSF rhinorrhea.

Methods

MRI was performed at 1.5 tesla, and coronal and sagittal 3 mm T1-WI sections with and without fat saturation (FS) were obtained before lumbar puncture. After collecting 10 ml of CSF we injected 1 ml of diluted gadolinium into the subarachnoid space followed by re-injection of 9 ml of CSF. The patient was positioned in Trendelenburg position for 30 minutes to attempt provoking the passage of contrast into any CSF fistula. T1-WI sections with and without fat suppression, with the patient in prone position, were obtained with the aid of the Valsalva maneuver.

Results

We undertook a preoperative GdMRC on a 61-year-old woman with posttraumatic persistent nasal drainage and headache, in order to demonstrate the location of the fistula. T1-WI with and without FS revealed leakage of contrast into the left nasal cavity. Surgical treatment was performed excluding CSF leakage.

Conclusions

The GdMRC improved CSF fistula detection and can be considered the diagnostic method of choice for its confirmation and location.

References: