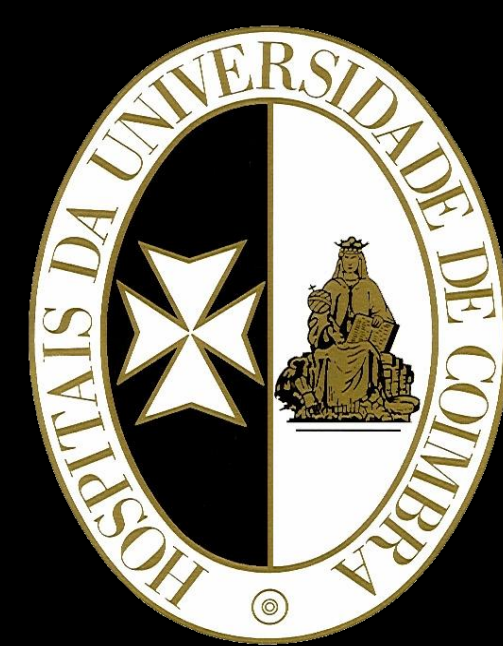


GADOLINIUM-ENHANCED MAGNETIC RESONANCE CISTERNOGRAPHY IN DETECTION OF CEREBROSPINAL FLUID RHINORRHEA



Carlos Casimiro, Pedro Freitas, Joana Martins, Tiago Parreira, Miguel Cordeiro
Neuroradiology, Hospitais da Universidade de Coimbra, Portugal

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.

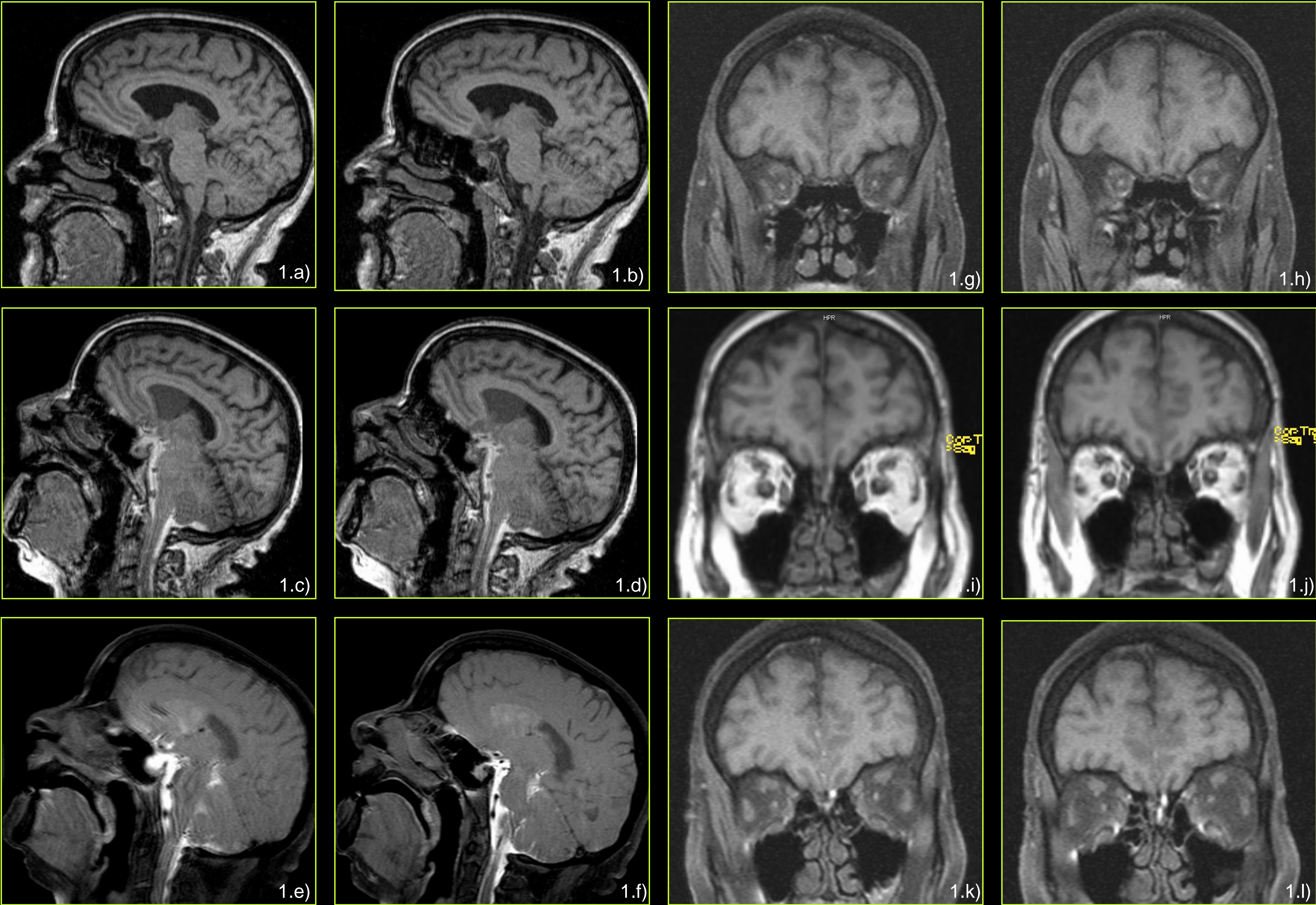


Fig. 1. – A 60-year-old woman with rhinorrhoea. a) and b) Sagittal T1WI. c) and d) GdMRC: Sagittal T1-WI without FS reveal leakage of contrast medium into the nasal cavity on the left. e) and f) GdMRC: Sagittal T1-WI with FS. g) and h) Coronal T1-WI with FS. i) and j) GdMRC: Coronal T1-WI without FS reveal leakage of contrast medium into the nasal cavity on the left. k) and l) GdMRC: Coronal T1-WI with FS.

Conclusions

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

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