ROLE OF MAGNETIC RESONANCE IMAGING IN DIAGNOSIS OF IDIOPATHIC INTRACRANIAL HYPERTENSION Mahmoud Lotfy El-Sheikh, Mohamed Mahmoud Elshafei, LamyaAbd-Al GalilEissa, Tarek Ahmed Rayan,* Soha Hussein Mohamed Hasan

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Introduction

Idiopathic intracranial hypertension (IIH) is a disorder of unknown cause that results in increased intracranial pressure without localizing neurologic findings .Brain imaging using MRI is important to exclude any mass occupying lesion or dural sinus thrombosis.MRI features of IIH include elevation of the optic nerve head, empty sellaturcica, distention of the peri-optic subarachnoid space, tortuosity of the optic nerves, flattening of the posterior sclera of the globe, and dural venous sinus stenosis.

Aim of the work

This study was conducted to study the role of MRI in diagnosis of benign intracranial hypertension.

Patients and Methods

PATIENTS: This study was carried out on 20 patients with symptoms of intracranial hypertension referred to the Radio-diagnosis Department, Main University Hospital, Alexandria University from November 2019 to November 2020.

METHODS: The studied patients were subjected to the following:

- Detailed history taking and thorough clinical examination.
- Imaging evaluation of the brain including :
 - * Routine magnetic resonance imaging sequences including 3D T1, axial, sagittal and coronal T2, axial FLAIR.
 - * T1 Weighted post contrast axial images if needed.
 - * MRV if needed to visualize dural venous stenosis or thrombosis

Results

The study was conducted on 27 patients ; 6 males and 21 females (ranging in age from 12 to 61 years with mean age 42.04 years).

The included patients with IIH were distributed according to many radiological signs based on the predominant MRI pattern. Regarding empty sellaturcica, 96.3% of patients had empty sella, 14.8 % of them had grade II empty sella, 25% had grade III ,44.4% had grade IV. and 14.8% had grade V empty sellaturcica.

The current study showed that 81.5% of patients had flat posterior sclera, 88.9% of patients had optic nerve hydrops, 77.8% of patients had tortuous optic nerves, 18.5% of patients had slit like ventricles, 14.8% of patients had venous sinus stenosis, 7.4% of patients had ectatic Meckel's caves, and 3.7% of patients had meningiocele. In our study in our hands, mean \pm SD of neck fat thickness (mm)of the studied cases was 7.84 \pm 2.32 and their range from 4.30 to 14.0. Regarding the relation between neck fat thickness and empty Sella turcica, the mean of neck fat thickness in patients with no empty Sella turcica was 6.80mm, and was 7.88 ± 2.36 mm in 26 patients who had empty Sella turcica.

The present study showed that the highest sensitivity (81.5%) and specificity (100%), with best accuracy of 89.13% was achieved at finding of four signs.





Figure 1: Axial T1WI shows exaggerated subarachnoid fluid surrounding both optic nerves with bilateral tortuous course of optic nerves.

Figure 2: Axial T2WI show bilateral flattening of posterior eye globe with bilateral tortuous optic nerve and optic nerve hydrops



Figure 3: Sagittal T1WI shows grade III empty sellaturcica.

Figure 4: MR Venography shows segmental attenuated caliber of both sigmoid sinuses, more on the left side and left transverse sinus without evidence of venous sinus thrombosis

Conclusion

Neuroradiologists should be aware of IIH) and its complications. The diagnostic approach to IIH requires integration of neuroimaging results with clinical information and non radiological investigations.



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