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Partial Empty Sella Syndrome: An Incidental MRI Finding in a Patient with Chronic Headache

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Abstract **Case Report**

Partial empty sella syndrome (ESS) is a radiological finding characterized by herniation of the subarachnoid space into the sella turcica, leading to flattening of the pituitary gland. It is usually discovered incidentally on brain imaging performed for unrelated reasons. Although often benign, empty sella may occasionally be associated with endocrine or cerebrospinal fluid (CSF) pressure abnormalities. This case highlights the incidental finding of partial empty sella in a middle-aged woman investigated for chronic headache and reviews the clinical relevance for primary care physicians.

Keywords: Empty sella syndrome, Incidental finding, Primary care, Headache, Pituitary gland, Idiopathic intracranial hypertension.

INTRODUCTION

Empty sella syndrome (ESS) refers to the radiological appearance of a partially or completely CSF-filled sella turcica with a flattened pituitary gland. The condition can be primary, due to a congenital diaphragmatic defect allowing CSF herniation, or secondary, following pituitary surgery, radiation, or infarction. Most cases are asymptomatic and discovered incidentally during neuroimaging for unrelated complaints such as headache or visual disturbances. For primary care physicians, recognizing the benign nature of this finding while knowing when to refer for further evaluation is essential.

CASE DESCRIPTION

A 42-year-old female presented with a history of recurrent, chronic headaches for several months. There was no history of visual changes, vomiting, hormonal symptoms, or focal neurological deficits. She had been previously managed with simple analgesics and nasal sprays with partial relief. A CT scan of the head revealed a CSF-filled sella with a thin pituitary gland, prompting further evaluation with MRI of the brain. The MRI showed sellar enlargement with partial empty sella appearance and flattening of the pituitary gland. The pituitary stalk was centrally located, and there was no evidence of a pituitary mass, arachnoid cyst, or optic nerve sheath distension. The rest of the brain structures appeared normal. The patient's visual fields were intact, and endocrine evaluation (TSH, prolactin, cortisol, and gonadotropins) was within normal limits. She was reassured, educated about the benign nature of the finding, and managed symptomatically for her headaches. She remains under routine follow-up with her primary physician.

DISCUSSION

Empty sella is a common incidental finding, reported in up to 5–20% of neuroimaging studies, especially in middle-aged women. The majority of cases are clinically silent. When symptomatic, ESS may be associated with idiopathic intracranial hypertension (IIH), pituitary hormonal abnormalities, or CSF rhinorrhea. In this patient, the absence of visual symptoms, normal pituitary function, and lack of imaging signs of IIH indicated a benign incidental variant. Primary care physicians should be aware that most ESS cases do not require intervention. However, referral to endocrinology or neurology is warranted if there are endocrine abnormalities (amenorrhea, galactorrhea, fatigue), visual symptoms, or features suggestive of raised intracranial pressure (papilledema, pulsatile tinnitus). Management consists mainly of reassurance and follow-up. For idiopathic intracranial hypertension, treatment focuses on weight management, acetazolamide, and monitoring for visual complications.

Learning Points

- Empty sella is often an incidental, benign MRI finding and does not always indicate pathology.
- Clinical correlation is crucial — hormonal and visual assessment helps rule out secondary causes.
- Primary care physicians play a key role in reassuring patients and identifying those needing specialist referral.
- Awareness of this entity prevents unnecessary anxiety and investigations.

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