

Case Report

Utility of MRI in diagnosis of empty Sella syndrome in a young female with amenorrhoea and bilateral nipple discharge

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ABSTRACT

Empty sella syndrome is a rare disease in which sella turcica appears empty. It can be asymptomatic or may have symptoms due to hormonal disturbances. Here we report a case of 35-years-old female who presented with amenorrhoea and bilateral nipple discharge.

Keywords: CNS, Empty sella syndrome, MRI, Pituitary

INTRODUCTION

Empty sella syndrome is compression or flattening of pituitary gland giving an appearance of empty sella on cross sectional imaging. The sella is not actually empty.¹ It is generally filled with CSF. Empty sella syndrome is comparatively more common in adults when compared to children.

CASE REPORT

A 35-years-old female presented to us with a chief complaint of amenorrhoea and bilateral nipple discharge. She did not have any symptoms like headaches or visual disturbances. She had no significant past medical or surgical history. She had no previous history of trauma or operation. Physical examination including cardiovascular system, respiratory system, gastrointestinal and central nervous system was normal. Visual acuity was 6/6 in both eyes. Fundoscopy was normal in both eyes. Vitals were normal. Hemogram and urine examination were

normal. Prolactin levels were 104ng/ml (normal: <30 ng/ml for non-pregnant woman). But prolactin levels were not significantly high (>150 ng/ml) as seen in prolactinoma. FSH levels were borderline low 6 mIU/ml (normal 5-20 mIU/ml). LH levels were low 4mIU/ml (normal 5-20 mIU/ml). TSH levels were within normal range 1.4 microIU/ml (normal 0.3-3 microIU/ml).

The patient was sent for MRI-brain study. Where sella turcica was replaced by CSF intensity, which appears hypo intense on T1 weighted images and hyperintense on T2 weighted images with posteriorly compressed pituitary gland which appears hyperintense on T1 weighted images and hypo to iso intense on T2 weighted images. No evidence of restricted diffusion or blooming in GRE images. No significant postcontrast enhancement. (Figure 1, 2, 3) Patient was diagnosed as a case of the partially empty sella. The patient was started on Bromocriptine 2.5 mg orally daily. Then the dose was titrated and increased to 10 mg daily.



Figure 1: Sagittal t1 weighted MRI-brain image shows sella turcica is replaced by CSF intensity, which appears hypo intense on t1 weighted images (open white arrow) with posteriorly compressed pituitary gland which appears hyperintense on T1 weighted images (open black arrow).

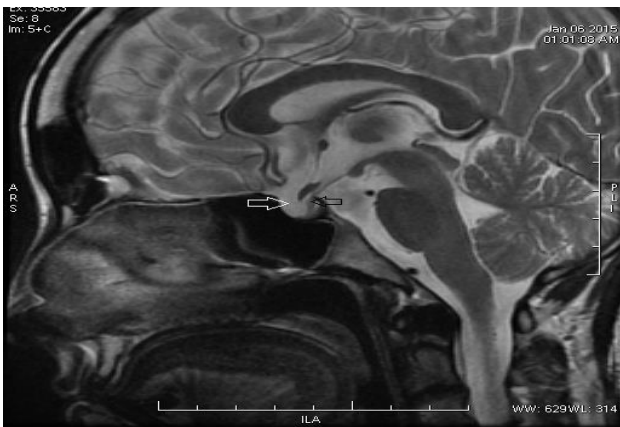


Figure 2: Sagittal t2 weighted MR image shows sella turcica is replaced by CSF intensity, which appears hyperintense on t2 weighted images (open white arrow) with posteriorly compressed pituitary gland which appears iso intense on t2 weighted images (open black arrow).

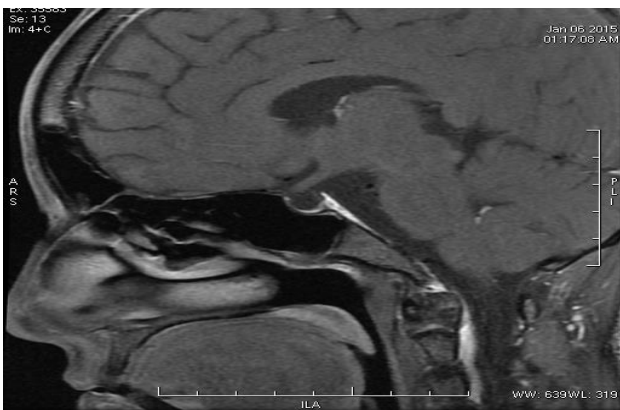


Figure 3: Sagittal post contrast T1 weighted images shows no significant postcontrast enhancement.

DISCUSSION

The incidence of empty sella syndrome is about 8-35% in general population.¹ Sella turcica is a saddle shaped depression located in the sphenoid bone. Pituitary gland is present in this depression. In this disorder, there is herniation of subarachnoid space into sella turcica through sellar diaphragm and it compresses and flattens the pituitary gland. Also, there is accumulation of CSF surrounding sella turcica. So, the sella turcica appears empty.

In majority of the cases, it is asymptomatic but occasionally headaches or pituitary dysfunction may occur. It can primary or secondary due to some underlying pathology in brain. Primary Empty sella syndrome can be associated with hydrocephalus, herniation of optic chiasm. Secondary Empty Sella Syndrome develops due to radiation or surgical treatment.²

Mostly ESS is asymptomatic but in some cases, it can be symptomatic. Symptoms include headache, erectile dysfunction, menstrual disturbances, low libido and nipple discharge.

Diagnosis of ESS is by CT scan or MRI of brain. CT scan will show infundibulum sign that is infundibulum surrounded by hypodense CSF.³ It is very difficult to distinguish ESS from cystic intrasellar tumor and third ventricular recess in an axial CT scan. If there is calcification or haemorrhage in the pituitary gland, then CT scan can be used to diagnose it.

The gold standard test for diagnosis is High-resolution MRI using thin section coronal and sagittal T1-weighted images through the pituitary-hypothalamic axis before and after intravenous administration of gadolinium.

Hypoplastic pituitary gland or ESS is associated with absent posterior pituitary T1 weighted bright spot. This can cause isolated growth hormone deficiency, diabetes insipidus or multiple hormone deficiency.⁴ Arachnoid cyst in the superior portion of sella turcica can be a differential diagnosis. Space occupying lesion generally obliterate or displace pituitary stalk but it is in normal position in ESS.⁵ In our case there was small amount of the remaining pituitary gland was present.

Management depends on the symptoms. An asymptomatic patient needs no treatment. But hormonal supplementation is given as per the hormonal deficiency in symptomatic patient. The indications for surgery are visual disturbances and cerebrospinal rhinorrhea. Intradural or extradural approach is used to pack sella with muscles, cartilage, fat, bone, ceramic substance or titanium plate. Extradural approach is better as it has less complication rates like trauma to sellar or suprasellar structure.⁶

CONCLUSION

Empty sella syndrome is a rare disease and can be asymptomatic or may have symptoms due to hormonal disturbances. Management depends on the symptoms. An asymptomatic patient needs no treatment. MRI plays vital role in the diagnosis of the empty sella syndrome as non-invasiveness, lack of radiation exposure and better soft tissue resolution.

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