

Ectopic Neurohypophysis - A Case Report

AL KIRANMAYI, SVV NUNNA, SK CHAMARTHI, AM MUKARRAB

Ind J Radiol Imag 2006 16:2:179-180

Key words : -Adenohypophysis, Neurohypophysis, Short stature

Introduction

Ectopic Neurohypophysis is an anomaly of the Pituitary gland and is found in 43% of patients presenting with short stature due to Growth hormone deficiency(1).MRI is the modality of choice in diagnosing this condition. We present a case of short stature due to growth hormone deficiency with pituitary anomaly.

Case report

A 14 year old boy presented with short stature. No contributory antenatal, familial or past medical history was present. He is the second child of non-consanguineous marriage. Clinical history revealed short stature (height below third percentile), bone age less than the chronological age, abnormal 24 hr Growth hormone secretory pattern and peak Growth hormone levels less than 10ng/ml during provocative stimulation tests. Radiograph of both hands showed bone age corresponding to less than 11 yrs.MR imaging was done on a 0.3T permanent magnet Airis II.Imaging was done in the three orthogonal planes using T1W SE, T2W FSE, PD and FLAIR sequences.3D T1W volume sagittal/coronal recon images were obtained.

The T1W sagittal images showed hyperintense focal area in the Infundibulum.The normal hyperintense signal of neurohypophysis was not seen in posterior sella. Anterior pituitary gland was small in size (3x3mm) with normal signal intensity and pituitary stalk was not seen (Fig 1&2).

Discussion

The appearance of Pituitary gland on MR images is best evaluated in the Sagittal and Coronal images. In adults on T1W images the Adenohypophysis has intermediate signal and shows homogeneous bright signal following contrast enhancement. The Neurohypophysis has characteristically bright signal due to the presence of phospholipids in the neurosecretory granule membrane.

In the neonatal period the Pituitary gland is hyperintense without any difference between the Adenohypophysis and Neurohypophysis (2).



Fig 1&2 .Sagittal T1W images showing small anterior pituitary gland, absent Pituitary stalk and Ectopic Posterior Pituitary signal located in the Infundibulum

From the Department of Radiology, Yashoda Superspeciality hospital, Malakpet, Hyderabad-500036, Andhra Pradesh

Request for Reprints: Dr. Kiranmayi AL, Registrar, Department of Radiology, Yashoda Superspeciality hospital, Malakpet, Hyderabad-500036, Andhra Pradesh

Received 10 August 2005; Accepted 15 April 2006

Posterior Pituitary Ectopia is an anomaly of the Pituitary gland associated with short stature and Growth Hormone deficiency. It is presumed to result from birth trauma causing a dysfunction between the Adenohypophysis and Neurohypophysis and is associated with deficiency of Anterior Pituitary hormones but preservation of Neurosecretory hormones. (3).It is a form of developmental anomaly due to incomplete downward growth and fusion of the Neurohypophysis with the Adenohypophysis in the Sella and may be a part of other midline cranial anomalies (4).

On MR the Sella appears smaller than normal on T1W images, the homogeneous signal of normal Pituitary is absent or small, with the absence of proximal pituitary stalk. A focal bright signal spot is seen in the proximal portion of the Infundibulum or the Tuber Cinereum which represents the ectopic position of the Neurohypophysis. The differential diagnosis of a Suprasellar bright spot include Rathkes Cleft Cyst, Subacute haemorrhage (in thrombosed Aneurysm), Haemorrhagic neoplasm, Post operative status, Lipoma, Dermoid, Traumatic transection of Stalk, Hypophysectomy, Sarcoidosis and Histiocytosis (5). The commonest site for the bright spot of Posterior lobe is Median eminence or Infundibulum (6).

References

1. David D.Stark, William G.Bradley, Magnetic Resonance Imaging,3rd edition, Volume III,Page 1228-1229.
2. Howard Lee S, Krishna Rao C.V.G., Zimmerman Robert a, Cranial MRI and CT, 4th Edition, Page 642-644
3. Fuzisawa I, Kikuchi K et al: Transection of the Pituitary stalk: Development of and Ectopic Posterior lobe assessed with MR imaging Radiology, 165:487-489, 1987.
4. KellyWM, Kucharezykuv et al: posterior Pituitary Ectopia:An MR feature of Dwarfism.AJNR 9:453-460, 1988
5. Anne G.Osborn, Diagnostic Neuroradiology, Page 471.
6. Abrahams TT Trafelner E and Boulware S: Idiopathic Growth Hormone Deficiency: MR findings in 35 Patients, AJR 156:599, 1991.