Case Report

Identification of Sphenoid Ostium Bilaterally to Remove the Pituitary Macro-adenoma through Endo-nasal Trans-sphenoidal Surgery

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Abstract

Endonasal transsphenoidal removal of pituitary macroadenoma is not new. The anatomical details are also well established. Here in this case report we identified sphenoid ostium bilaterally to enter into the sphenoid sinus. The rostrum, pituitary fossa and carotid impressions, clivus were identified and successful removal was hence ensured.

Case report: *45 years female presented with deteriorated visual field over 3 months. Ophthalmological examination revealed decreased visual acuity, field of vision and primary optic atrophy. Endocrinological evaluation confirmed hyperprolactinemia. She underwent endonasal transsphenoidal surgery in which we identified bilaterally sphenoid ostium and hence the sphenoid face was approached successfully to remove the tumor.*

Introduction

Over the decades the endoscopic endonasal approach for pituitary macroadenoma has been well adapted. Wider angle, visualisation of hidden corners, free hand technique is superior to microscopic surgery[1]. The posterior choana can be identified by seeing opening of Eustachian tube and nasopharynx. Sphenoid ostium usually lies 1-1.5 cm above the apex of posterior choana[2]. Surgical strategy to identify the relevant structures like superior turbinate, rostrum of the sphenoid and finally the ostium bilaterally are key to success for this procedure. Pneumatization of sphenoid sinus and it's variations in images carries significant importance in surgical procedure[3].

Case Report

A 45 years female presented with visual impairment for 3 months. She had an occasional headache and deteriorating field of vision. She was examined by an ophthalmologist and found deterioration of visual acuity and field of vision (bitemporal hemianopia), primary optic atrophy on ophthalmoscopic examination. On investigations her prolactin level was 1100 ng/ml. MRI protocol for pituitary gland revealed pituitary macroadenoma and was referred to the neurosurgery outpatient department. We investigate the patient further and prepare her for endonasal transsphenoidal surgery. A successful removal of the pituitary tumor was achieved by identifying bilateral sphenoidostium.

Discussion

This study was to assess whether bilateral sphenoid ostium identification for pituitary endonasal transsphenoidal procedure is helpful or not.

Because the sphenoidal sinus is conveniently positioned in the center of the midline skull base, it is included in the majority of endoscopic endonasal techniques. As a result, the degree of pneumatization is a critical element in these procedures, because the more the pneumatization, the easier it is to identify the bony protuberances and depressions within this sinus, as well as access neighboring structures and regions. Furthermore, through the anterior and posterior ethmoidal cells, additional anterior portions of the skull base can be accessible[4,5.6,7].

The successful completion of skull base approaches requires knowledge of the surface anatomy of the sphenoidal sinus and ethmoidal cells. The sella, optic nerve, and carotid prominences are important points to be remembered[8].

Conclusion

Identification of sphenoid ostium bilaterally in endonasal transsphenoidal surgery is an effective procedure to enter into the sphenoid sinus for successful removal of pituitary surgery.

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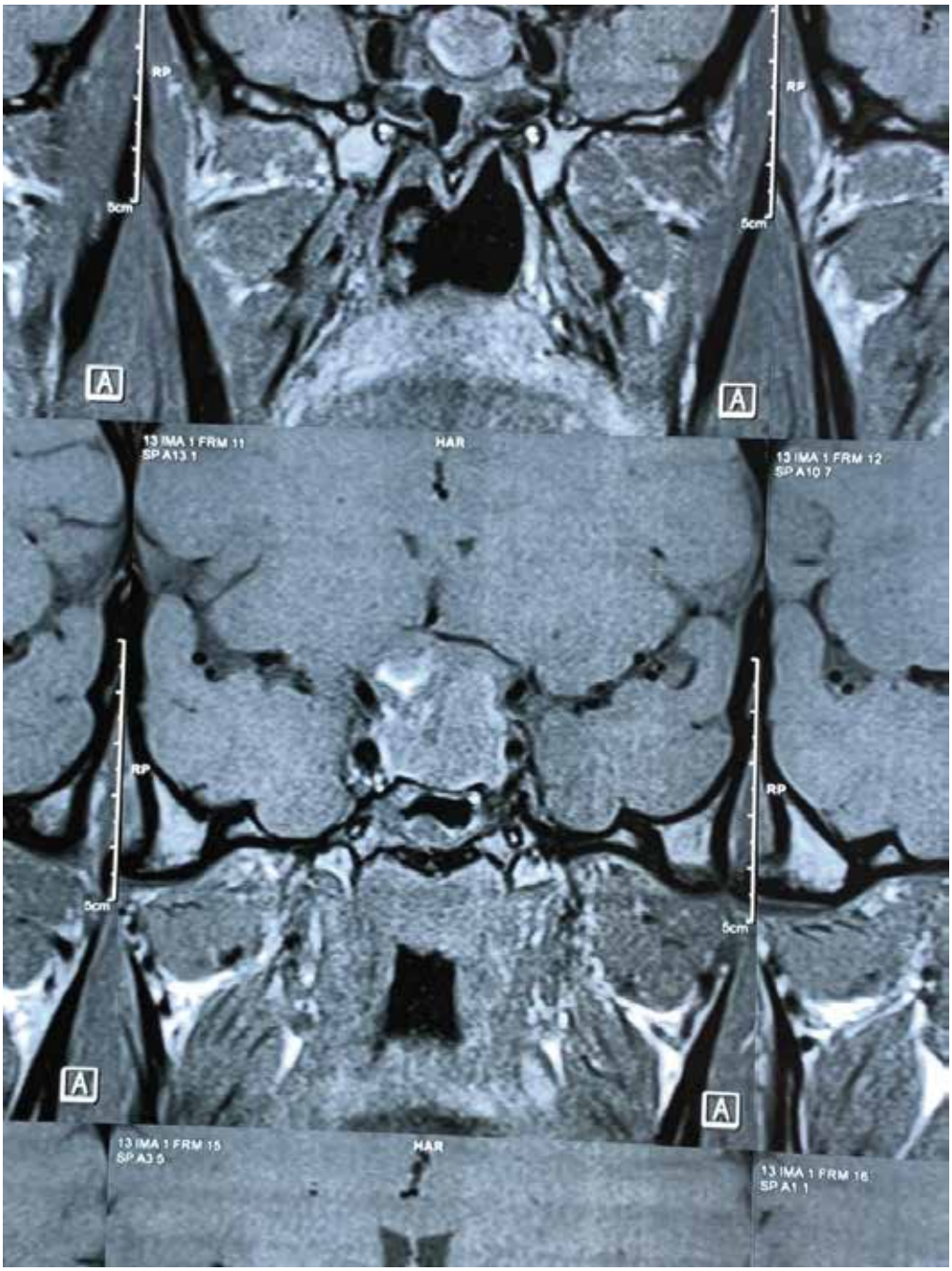

Figure 1: Coronal MRI of Pituitary region showing macro-adenoma with relevant anatomy

Figure 2: Sagittal MRI of Pituitary region revealing macro-adenoma