

# A Rare Case of Pituitary Adenoma with Calcification: A Case Report

## Kalsifikasyon Gösteren Hipofiz Adenomu Olgusu: Vaka Sunumu

### ABSTRACT

Though craniopharyngioma remains the most common sellar suprasellar tumor with calcification, it can be seen very rarely in pituitary adenomas and Rathke's cleft cysts. Appreciation of the pattern of calcification in a sellar suprasellar lesion can give a clue to the nature of the lesion. The authors describe a 53-year-old male with a cystic sellar suprasellar lesion and curvilinear calcification that was managed by successful transsphenoidal surgery. The present case highlights the occurrence of calcification in a pituitary adenoma and the importance of recognizing the calcification pattern for pre-operative diagnosis of sellar suprasellar lesions that can help plan the surgical strategy and management.

**KEY WORDS :** Pituitary adenoma, Calcification, Sellar, Suprasellar

### ÖZ

Kraniofarengiomalar suprasellar bölgede en sık kalsifikasyon gösteren lezyondur, Rathke kleft kistlerinde ve hipofiz adenomlarında ise kalsifikasyon çok daha nadir görülür. Suprasellar yerleşimli lezyonların değerlendirilmesi, lezyonun tipi hakkında ipucu verebilir. Yazarlar, 53 yaşında kadın hastada sella ve suprasellar bölgeye yerleşmiş kistik kalsifiye olmuş bir lezyonu tanımlamaktalar, lezyon transsphenoidal yol ile başarılı bir şekilde tedavi edilmiştir. Sunulan vakada, hipofiz adenomu vakalarında preoperative dönemde eğer hipofiz adenoma kalsifikasyonu varsa; kalsifikasyonun ve kalsifikasyon şeklinin belirlenmesi cerrahi planın yapılmasında yardımcı bir unsur olduğu vurgulanmıştır.

**ANAHTAR SÖZCÜKLER:** Hipofiz adenomu, Kalsifikasyon, Sellar, Suprasellar

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## INTRODUCTION

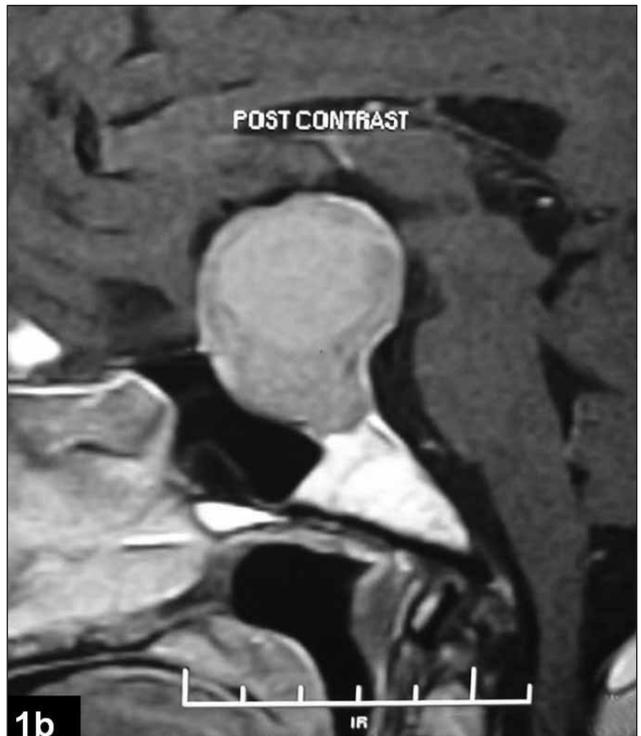
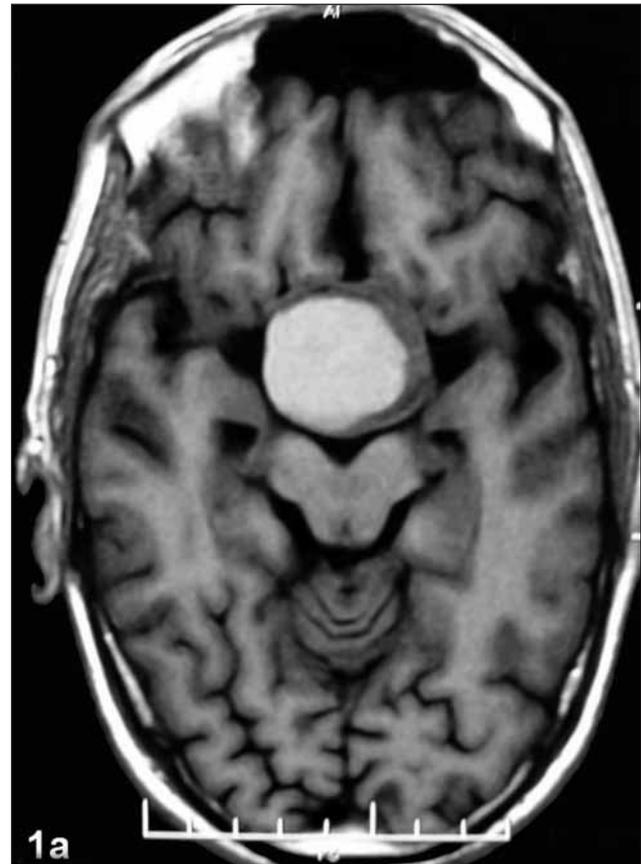
Craniopharyngioma is the most common sellar suprasellar lesion with calcification [2]. However, calcification can occur rarely in cases of pituitary adenomas and Rathke's cleft cysts [1,4]. Preoperative differential diagnosis is important and presence or absence and type of calcification pattern can be helpful for distinction between these pathologies [4]. The authors describe a case of cystic sellar suprasellar lesion with curvilinear calcification which was finally diagnosed as a pituitary adenoma. The present case highlights this imaging feature as distinction is important both from the therapeutic and prognostic point of view, considering the varied and more aggressive behavior of craniopharyngiomas as compared to pituitary adenomas and Rathke's cleft cysts.

## CASE REPORT

A 53-year-old male presented to us with gradually progressive decrease in vision in both eyes for six months. Examination revealed a visual acuity of 0.15 on Snellen's chart with presence of temporal field defects on perimetry. Fundus examination showed bilateral pallor of the optic disc. Magnetic resonance imaging revealed a sellar suprasellar lesion hypo- to isointense on T1W MRI with a hyperintense component and relatively homogenous enhancement on contrast administration with enlarged sella (Figure 1). Noncontrast computed tomography obtained in the same patient showed a hypodense sellar suprasellar lesion with curvilinear calcification (Figure 2). A hormone profile was within normal limits. A diagnosis of craniopharyngioma/pituitary adenoma was considered in view of the location of the lesion and presence of calcification. Sublabial transsphenoidal decompression of the solid cystic lesion was performed. The final biopsy however revealed the presence of a pituitary adenoma (Figure 3).

## DISCUSSION

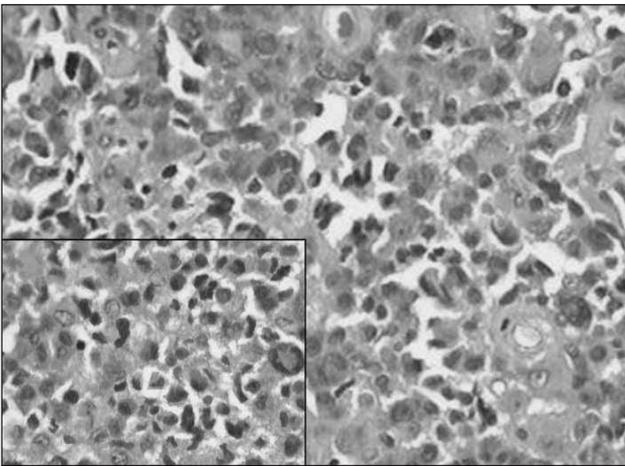
The differential diagnosis of sellar suprasellar lesions most commonly includes pituitary adenoma and craniopharyngioma [4]. Presence of calcification in a cystic sellar suprasellar mass is however almost diagnostic of a craniopharyngioma [2]. Calcification on the other hand is very rare in pituitary adenomas and is reported in only 0.2% to 8% of cases.(3). Rarely, a Rathke's cyst can also be calcified and can



**Figure 1:** Axial T1W (1A) and sagittal postcontrast (1B) MRI showing a sellar suprasellar hypo- to isointense lesion with a hyperintense component and relatively homogenous enhancement on contrast administration with enlarged sella.



**Figure 2:** Axial noncontrast CT showing a hypodense suprasellar lesion with curvilinear calcification.



**Figure 3:** Photomicrograph showing sheets of cells with indistinct cellular outline and moderate amount of cytoplasm, H&E X 100 (Inset H & E x 200) s/o pituitary adenoma.

create a diagnostic dilemma. Nodular, curvilinear and mixed are the various forms of calcification seen in a sellar suprasellar location, the pattern of which can give a clue to the nature of the lesion [1]. As compared to the nodular type of calcification seen in the majority of patients with craniopharyngiomas,

the presence of a curvilinear calcification should give a hint to the presence of pituitary adenoma or very rarely a Rathke's cleft cyst[1,5]. Though presence of calcification led us to consider craniopharyngioma strongly as the probable diagnosis preoperatively, an enlarged sella with minimal calcification, especially of the curvilinear pattern, favored a transsphenoidal approach; this approach was also chosen considering the sellar location and pituitary adenoma with curvilinear calcification described in the literature [1,3,4]. The differentiation of lesions based on imaging and clinical features is surgically important as more than 95% of pituitary adenoma cases can be safely and completely removed transsphenoidally while transcranial approaches form the mainstay of surgery for craniopharyngiomas [2,4]. A subset of cystic craniopharyngioma with enlarged sella can however be operated transsphenoidally with optimum results. Similarly, the presence of heavy calcification in a sellar suprasellar tumor as commonly occurs in craniopharyngioma can make surgical excision difficult due to poor descent of the suprasellar component of the tumor by a transsphenoidal approach [2]. The intraoperative surgical strategy and dissection also differs as the diagnosis shifts from Rathke's cyst and pituitary adenomas to craniopharyngioma [4].

The present case highlights the fact that pituitary adenomas can rarely have radiological evidence of calcification and should be distinguished from other tumors as the prognosis and management with selection of the surgical approach differs significantly depending on the nature of the lesion. Craniopharyngiomas, the most common sellar suprasellar tumor with calcification, mandate an entirely different treatment strategy, including surgical approach, postoperative hormone replacement therapy and adjuvant radiotherapy in quite a significant number of patients as compared to the benign history of pituitary adenomas with total surgical removal by a minimally invasive endoscopic approach being curative in a significant number of patients.

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