

# Endoscopic intervention to the rare intrasellar processes

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## SUMMARY

**Objective:** Intrasellar localization of the lesions other than pituitary adenoma is rare. Although they have same clinical picture they have some differences in radiological characteristics as well as therapeutic characteristics.. Endoscopic intervention to the intrasellar lesions is not a new technique but the use of it in rare intrasellar abnormalities has not been reported.

**Methods:** Here we present two case of atypical pituitary lesion treated by endonasal endoscopic route.

**Results:** One of them is an intrasellar active chronic granulomatous abscess developed secondary to neurobrucellosis, the other one is Rathke's cleft cyst.

**Conclusion:** Endoscopic drainage of intrasellar infectious material has some benefit over transcranial or transsphenoidal surgical intervention. Endoscopic drainage of atypical sellar lesions were discussed in this article.

**Key words:** Endoscopy, atypical sellar lesion.

## ÖZET

*Nadir rastlanan sella içi patolojilerde endoskopik cerrahi*

**Amaç:** Sella içinde hipofiz adenomundan başka yer işgal eden lezyonlar oldukça nadir görülmektedir. Klinikolarak hipofiz adenomları ile benzerlik gösterebilir de bu lezyonlar radyolojik olarak ya da tedavi de farklı özellikler taşımaktadırlar. Sella içi patolojilere endoskopik yaklaşım yeni olmayan bir teknik olmasına rağmen sella içi nadir rastlanan patolojilerde kullanımı sık değildir.

**Yöntem:** Bu yazıda endoskopik olarak yaklaşım uygulanan sella içi yerleşimli iki atipik vaka tartışıldı.

**Bulgular:** Vakalardan ilki neurobrucelloz sonrası gelişen pituitary yerleşimli aktif kronik granulomatöz enfeksiyon absesi, ikincisi ise Rathke kleft kisti olarak rapor edildi.

**Sonuç:** Endoskopik transsphenoidal cerrahi sella içi nadir rastlanan patolojilerde de güvenli ve etkin bir tedavi yöntemidir.

**Anahtar kelimeler:** Endoskopi, atipik sella lezyonları

## INTRODUCTION

Eventhough microsurgical transsphenoidal resection of pituitary adenomas has been established as the standard surgical treatment for decades, continuous efforts to improve surgical techniques and their outcomes are still being made(1). As an alternative to sublabial or septal incisions an endonasal endoscopic technique has been reported recently. Endoscopic intervention to the pituitary adenomas has gained great interest. There are some series reported in

the literature about the endoscopic pituitary adenoma resection (2,3,4). However, in sellar region, not only seen pituitary adenomas but thereoccurs some atypical lesions also. Some of which include Rathke's cleft cyst, empty sella syndrome, pituitary apoplexy, pituitary abscess, metastatic lesions, and craniopharyngioma (5,6,7).Clinical and radiological differentiation may not be possible in every case (8,9). Endoscopy may be useful in the treatment of these atypical sellar lesions (2,10).

## PATIENTS

Two patients with intrasellar lesion were operated on by endoscopy assisted transsphenoidal

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surgically, on supine position and head rest on the three pin head holder. Through the right nasal passage under the endoscopy guidance orifice of the sphenoidal sinus was widened and through this opening base of the sella was approached. After the sella base opened by the help of chisel, duramater was punctured via a 18 no. needle. After the removal of the lesion intrasellar compartment was explored with the help of angled endoscopic probes. Microscope was not used all along the surgical procedure. At the end of the operation patient did not need nasal tampon.

**Case 1:** 30 years old female admitted with the complaint of headache to the Department of Neurosurgery, Yüzüncü Yıl University School of Medicine at Van. Neurological examination revealed nothing abnormal. In her past history it was learned that she had been treated with the diagnosis of neurobrucellosis 3 months before the admission. She underwent cranial magnetic resonance (MR) imaging. On T1 weighted images an intrasellar, heterogeneously enhanced, centrally hypointense lesion was detected (figure 1A). Hormonal screening and ophthalmologic examination were within normal limits. She underwent endonasal endoscopic surgery and a dirty yellow coloured pus drained from the intrasellar lesion (figure 1B). Microbiological examinations could not disclose a causative microorganism, but histopathological examination revealed an active chronic granulomatous infection. She was prescribed rifampicin and Trimethoprim-Sulphamethoxazole as adjuvant

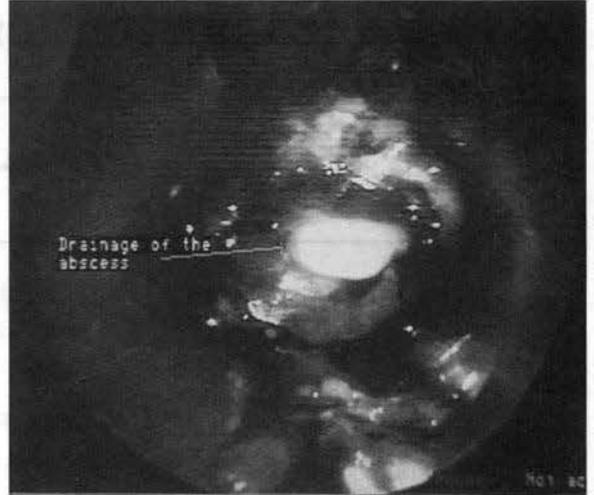


Figure 1: B) Endoscopic panoramic view of the pituitary abscess drainage (case1)

therapy for 6 weeks. Postoperative period was uneventful, she was discharged in a well state.

**Case 2:** A 20 years old female patient admitted with the complaint of headache and amenorrhea. Her neurologic and ophthalmologic examinations were normal. On hormonal screening other than a slight decrease in Luteinizing hormone and a slight increase in prolactin level, all hormonal levels were within normal limits. She underwent a cranial tomography (CT). An intrasellar nonenhancing lesion extending to the suprasellar region was detected (Figure 2). She was operated on through endonasal route endoscopically. A cystic lesion, containing shining crystalloid fluid, was drained. Histopathologic evaluation of the lesion was reported as Rathke's cleft cyst. Postoperative course of the patient



Figure 1: T1W A) sagittal MR section demonstrating heterogeneously enhancing sellar abscess.

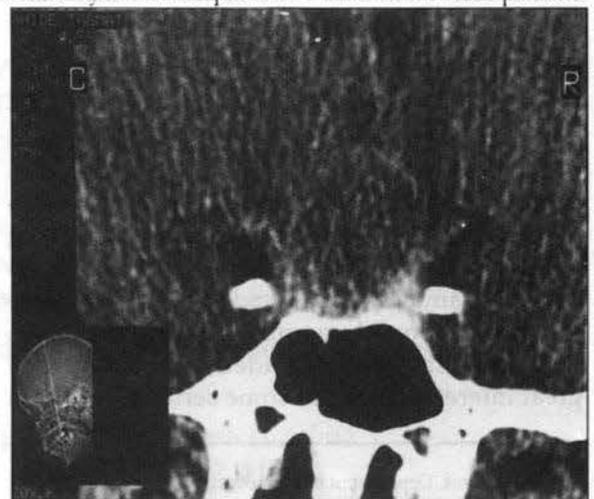


Figure 2: Axial preoperative CT view demonstrating the sellar lesion (case 2).

went on well and she was discharged. On control examination two months postoperatively hormonal screening was normal and she had had her first menarch.

## DISCUSSION

Transsfenoidal hypophysectomy was introduced by Cushing i 1910. Later it was replaced by the intracranial approach, which offered better visualization. However, after the development of intraoperative fluoroscopy in the 1960s, Hardy (11) used the microsurgical techniques to reestablish the sublabial, transseptal, transsfenoidal route as the standart approach. Sublabial dissection may e complicated by numbness of the maxillary dentition, leading to postoperative dentature problems and loss of nasal tip projection. There may also be nasal perforation, causing recurrent nasal bleeding, breathing problem and crust formation (4,12,13). Because of these problems surgeons have been seeking an improved approach. Recently, endoscopic nasal and sinus surgery has become widespread (14). The endoscope has been found to be a highly efficient tool for use in narrow surgical fields. Inmicrosurgery of the pituitary gland, it provides excellent fields of vision ofthe natural ostium of the sphenoid bone and enables opening of the sphenoid sinusin a very simple and accurate manner. In most cases, the operation can be done through one nostril. The use of thin slice axial and coronal CT images is essential to avoid from anatomical variations in the sphenoid sinus since MR alone will not provide the necessary detail of bone anatomy (2,4).

Endoscopic pituitary surgery has been reported mostly to be used in adenomas. But in sellar space some pathologies other than adenoma have been reported to occur. Craniopharyngioma, rathke's cleft cyst, metastatic lesions, infectious lesions and some other neoplasms are examples of these pathologies. Endoscopic intervention enables surgeon to see the anatomic relationships of te lesion, also it shortens the hospitalization period. It also prevents surgeon to damage diaphragma sella which limits the infection in intrasellar space in abscess cases. Rhinorrhea is also encountered less in endoscopy assisted case. We have used endoscopic approach to two atypical

intrasellar lesion one of them is an abscess occurred secondary to brucella meningitis, and the other one is tathke's cleft cyst.

The disadvantage of an endoscopic technique compared to the conventional microscopic surgery is that a surgeon has to operate in a two-dimensional view. Endoscopic images are sitll less clear and less sharp than the three dimensional microscopic view. The endoscope and surgical instruments have to enter parallel to each other in one nostril. A surgeon inexperienced with this technique may become frustrated if the two instrument consistently strike each other in a small operating field. The endoscope holding devices may be helpful to cope this problem. In the future endoscope may be helpful with the combination of computer guided stereotactic systems to approach any kind of pituitary lesion.

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