Case Report / Olgu Sunumu

A simple technique for removal of orbital tumors: transmaxillary approach

Orbital tümörlerin çıkarılmasında basit bir teknik: Transmaksiller yaklaşım

Güçlü Kaan Beriat, M.D.,[1] Gökçe Kaan Ataç, M.D.,[3] Sinan Kocatürk, M.D.,[1]
Hande Ezerarslan, M.D.,[2] Ersin Erdoğan, M.D.[4]

[1]*Department of Otolaryngology, Medical Faculty of Ufuk University, Ankara, Turkey*
[2]*Department of Otolaryngology, Bulanık State Hospital, Muş, Turkey*
[3]*Department of Radiology, Medical Faculty of Ufuk University, Ankara, Turkey*
[4]*Department of Neurosurgery, Medical Faculty of Ufuk University, Ankara, Turkey*

In this article, we present the case of a 43-year-old female with a tumor of the orbital base. Computed tomography revealed a well-defined contrast enhancing cavernous hemangioma behind the left bulbus oculi. The surgical resection was performed by transmaxillary approach to the orbit. No clinical complications were observed during three-month follow-up following surgery.

Key Words: Cavernous haemangioma; transmaxillary approach; tumor of orbita.

Bu yazıda orbita tabanında tümörü olan 43 yaşında bir kadın olgu sunuldu. Bilgisayarlı tomografide sol bulbus okuli arkasında belirgin düzeyde kontrast tutan kavernöz hemanjiyom izlendi. Orbitaya transmaksiller yaklaşım ile cerrahi rezeksiyon gerçekleştirildi. Ameliyat sonrası üç aylık izleminde komplikasyon gözlenmedi.

Anahtar Sözcükler: Kavernöz hemanjiyom; transmaksiller yaklaşım; orbita tümörü.

Various surgical approaches have been used for removal of lesions within the orbit. For access to the orbital region, different approaches (lateral, medial, transethmoidal, cranial) have been described.[1,2]

Like the other approaches, the transmaxillary approach can be used for excision of orbital tumors and orbital decompression. This is a simple, extradural cranial base approach to the orbit through the maxillary sinus that avoids orbitotomy or craniotomy. It is less destructive and cosmetically more convenient than the other approaches to the orbit.[3]

CASE REPORT

We present the case of a 43-year-old woman with a tumor of the orbital base that was diagnosed incidentally. She was admitted to the neurosurgery clinic for headache behind her left ear.

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Correspondence / İletişim adresi: Hande Ezerarslan, M.D. Bulanık Devlet Hastanesi Kulak Burun Boğaz Hastalıkları Kliniği, 49100 Bulanık, Muş, Turkey.
Tel: +90 436 - 311 45 06 e-mail *(e-posta):* handearslan5@yahoo.com

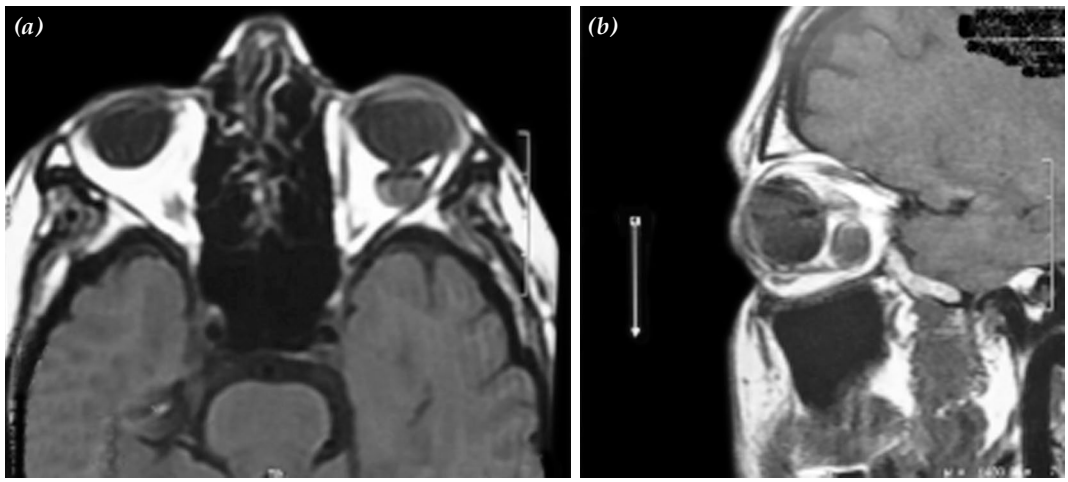

Figure 1. *Preoperative orbital computed tomography* ***(a)*** *with axial and* ***(b)*** *coronal cuts showing a left circumscribed contrasted retro-bulbar soft tissue mass.*

Computed tomography (CT) scan revealed a well-defined contrast-enhancing mass with a smooth surface. The tumor was behind the left bulbus oculi, and measured 15x13x22 mm. The CT scan impression was suggestive of cavernous hemangioma (Figures 1a, b).

The surgical resection was performed by a transmaxillary approach to the orbit. The gingivobuccal sulcus and inferior turbinate were injected with a 1% solution of lidocaine with a 1:100,000 concentration of epinephrine. The nose was then packed with 1:100,000 adrenaline-soaked cottonoid pledgets. After 10 minutes, the gingivobuccal sulcus incision was performed in the mucosa and periosteum 2 to 3 cm lateral to the midline, well above the tooth socket. Sufficient mucosa was preserved inferiorly for closure. Using a periosteal elevator, the periosteum was elevated upward toward the infraorbital fossa. The infraorbital nerve was identified and carefully preserved. The anterior maxillary wall was identified. Using an osteotome, an opening was made through the canine fossa that was approximately 2x3 cm. Using Kerrison forceps, the opening was enlarged to permit adequate exposure of the maxillary sinus.

The infraorbital groove that contains the infraorbital neurovascular complex was identified and the lateral part of the orbital floor and bone covering the neurovascular structures were carefully removed with a high-speed drill and Kerrison rongeur. The lateral route which was previously described was used.[3] First, the inferior rectus muscle was retracted medially, and intraorbital protruded fatty tissue was removed to identify the cavernoma. The cavernoma was removed by using a pituitary rongeur (Figure 2).

Figure 2. *Gross specimen photograph of pseudoencapsulated reddish blue mass.*

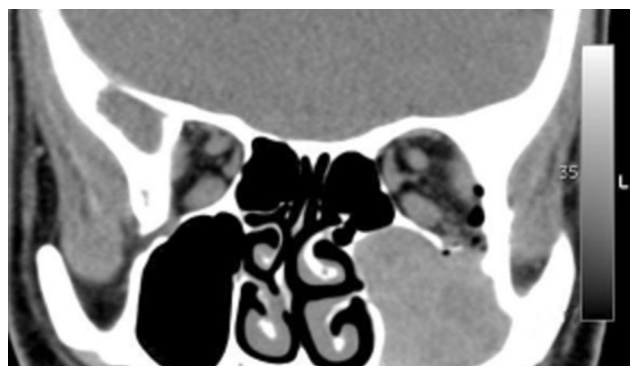

Figure 3. *Postoperative computed tomography coronal cut showing fluid collections in the maxillary sinus and air bubbles in the orbita on the left.*

A dural tissue patch was placed in the base of the orbital floor (Tissuemed Surgical Sealant Films, Tissuemed Ltd. UK.). Surgical cement for cranioplasty (Synimed Synergie Ingeniere Medicale, France) was used for orbital floor reconstruction. The maxillary sinus was irrigated with saline and a drain was placed in the sinus. The mucosal flap incision was closed with one layer of 4-0 chromic interrupted sutures.

A postoperative CT scan did not show surgical complications (Figure 3). There were no clinical complications during postoperative three-month follow-up.

DISCUSSION

Cavernous hemangioma is the most common primary orbital tumor in adults, accounting for 6% of all orbital lesions.[4] Orbital cavernous hemangioma appears radiologically as a well-defined encapsulated intraconal mass with sharply demarcated border from the optic nerve, extraocular masses and surrounding fatty tissue.[5]

Cavernous hemangiomas are firm with a hard and compact capsule and could be totally removed by careful circumferential dissection.

Kennerdell et al.[4] reported that the transmaxillary approach is preferable to remove inferoposterior orbital tumors.

This approach to the orbit offers suitable direct access to the inferior orbital region within a short operative time range and without a craniotomy, orbitotomy and related complications.[6,7]

The surgical technique of the transmaxillary approach is anatomically divided into two steps: Caldwell-Luc operation, opening the inferior wall of the eye, and removal of the tumor. Caldwell-Luc operation is technically simple and safe. The complications of this operation are limited. Rarely, infraorbital nerve and dental injury, recurrent maxillary sinus infections, ecchymosis, and edema of the cheek can be seen.[8]

The transmaxillary route provides excellent exposure of the optic, oculomotor, ciliary nerves, ciliary ganglion, retinal and ciliary posterior arteries, ocular muscles, orbital fat tissue, and other vital structures.[9,10] So, the incidence of complications related to exposure of these structures may be reduced.

Conclusion

We recommend the transmaxillary approach to remove orbital tumors as an alternative to the standard techniques of orbital surgery.

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