Case Report

Temporobasal Large Craniopharyngioma; A Case Report and Review of The Literature
Lutfi S POSTALCİ, Omur GUNALDI, Osman TANRİVERDİ, Bekir TUGCU, Serhat BAYDİN, Hidayet AKDEMİR

Bakırköy Research and Training Hospital For Neurology, Neurosurgery and Psychiatriy, 2nd Neurosurgery Clinic, Istanbul/Turkey

Abstract

Introduction: Craniopharyngiomas (CP) account for 1.2% to 3% of all intracranial tumors and although are considered typical in childhood period, almost one-half of the cases are found in adults. Craniopharyngiomas are generally believed to arise from the rests of squamous epithelial cells located on the pituitary stalk. They arise from squamous epithelial remnants of the obliterated craniopharyngeal canal, which represents the path taken by Rathke's pouch from the oropharynx to the floor of the third ventricle, we report a unique case of large craniopharyngioma in unusual location, extending in whole temporal lobe and basal cisterns.

Case Report: A 75-year-old woman was hospitalized because of progressive right hand and leg weakness and with diminished verbal functions for 3 months. Neurologic examination revealed a right hemiparesia and a mixed type aphasia. MR imaging demonstrated a large tumor arising from the left temporal basal region with a cystic component. Tumor was removed totally, with left transsilvian approach. There were no new postoperative neurological deficits. Histological examination revealed a typical adamantinous craniopharyngioma.

Discussion: Craniopharyngiomas are developed from squamous epithelial rests along remnants are present frequently in the pars tuberalis, posterior wall of the pharynx and sphenoid bone. They located in unusual sites have been reported previously posterior fossa, third ventricle and temporal lobe.

Keywords: Large, Craniopharyngioma, Ectopic

Özet


Tartışma: Kraniofaringioma, sıkılıkla, pars tuberalis, orofarinks ve sfenoid kemiğin arka duvarından gelişir. Daha önce literatürde posterior fossa, 3. ventrikül ve temporal lob gibi aşılsılmış lokalizasyonlar rapor edilmiştir.

Anahtar Kelimeler: Büyük, Kraniofaringiom, Aşılsılmış yerleşimli

INTRODUCTION
Craniopharyngiomas constitute 1.2% to 3% of all intracranial tumors and although are considered typical of childhood, almost one-half of the cases are found in adults(1). Craniopharyngiomas are generally believed to arise from the rests of squamous epithelial cells located on the pituitary stalk and superior aspect of the pituitary gland. They arise from squamous epithelial remnants of the obliterated craniopharyngeal canal, which represents the path taken by Rathke's pouch from the oropharynx to the floor of the third ventricle(15). In present study, we report a case of large cranipharyngioma in unusual location, extending in whole temporal lobe and basal cisterns presentation with hemiparesia and aphasis.

CASE PRESENTATION
A 75- year old- woman was hospitalized who suffered progressive right hand and leg weakness and with diminished verbal functions for 3 months. Physical examination revealed right hemiparesia and mixt type aphasis. There was no visual deficit and no endocrinologic and metabolic abnormalities in laboratory findings. Preoperative CT and MR imaging demonstrated a large tumor arising from the left temporal basal region with a cystic component (Figure-1A,B,C,D). Left pterional transsylvian approach was used and the mass was removed totally.

A voluminous cystic mass has aspirated as greenish fluid ('machinery oil like' fluid). And the solid mass was dissected dense, invasive finger like splayed tumor and gliotic tissue with diffuse adhesion render it difficult but a clear plane of cleavage between tumor and neural tissue had been able to find. After operation, the patient made a good postoperative recovery with resolution of her symptoms. Postoperative CT ve MR imaging showed no residual lesion (Figure-2A,B,C,D). There were no new postoperative neurological deficits. Histological examination revealed a typical adamantinous craniopharyngioma.

Figure 1A,B,C,D: Preoperative cranial computed tomography (Figure 1A) showed, 7x5x4cm spontan hyperdense, multilobulated mass lesion in the left temporoparietal region. After gadolinium injection, axial, coronal and sagittal T1 weighted magnetic resonance image (Figure 1B,C,D) demonstrated, multilobulated hypointense mass lesion with heterogeneous contrast enhancement, in the left temporoparietal region.
DISCUSSION

Cranipharyngiomas are originated from squamous epithelial rests along remnants are present frequently in the pars tuberalis, posterior wall of the pharynx and sphenoid bone\(^2,6,10\). Generally, CPs have a biphasic incidence between the first to second and sixth to seventh decades and constitute 6 to 9% of all childhood intracranial tumors\(^17\). These epithelial neoplasm is benign and arise along the so-called craniopharyngeal duct, as described Byerdheim\(^3\), which extends from the oropharynx to the third ventricle, containing Rathke's pouch on its ascent into the sella. Most CPs are suprasellar and tend to extend superior aspect. However, approximately 5% of CPs extend to the infrasellar space, with sparse reports of tumors in ectopic locations\(^7\). Unusual localisations have been reported previously as posterior fossa\(^5\), Third ventricle\(^9\) and temporal lobe\(^16\). They usually occur in suprasellar location but rarely can extend in all directions and their clinical presentations are usually due to increased intracranial pressure, visual symptoms and endocrin abnormalities\(^15\). There is no embryological explanation for craniopharyngiomas to originate from the temporal lobe. The only possible explanation is migration of squamous epithelial cell remnants of the obliterated craniopharyngeal canal in embriological period\(^16\). In the present case, the tumor growed laterally to the subtemporal space and basal ganglia, producing compression of the temporal lobe, posteriorly to interpedincular and prepontine cisterns. Chraniopharingiomas are generally lobulated, well-demarcated cystic masses with a mural nodule. The cyst contents are variable that, range from serous to cholesterol-rich oily material. The mural nodule often has calcific foci\(^13\). The CT appearance of cranioopharyngioma is tipically cystic, lobulated suprasellar mass with a solid mural nodule and nodular or rim calcification. On MRI, the appears can be variable. High signal on T1-weighted images has been shown to correlate with high cholesterol content or

\(\text{Figure 2A,B,C,D: Postoperative cranial CT (Figure 2A) and magnetic resonance imaging (Figure 2B,C,D), showed only postoperative changes. We did not observe any residual lision.}\)
the presence of methaemoglobin. The main differential diagnoses for this type of craniopharyngioma are Rathke's cleft cyst and thrombosed aneurysm. Midline anterior infundibular displacement is a specific feature of Rathke's cleft cysts, which also do not contain calcification\(^{14}\). Craniopharyngiomas can be classified into two histopathologically and clinically distinct subtypes\(^{8}\). The adamantimatous type consists of a predominantly cystic lobulated tumor, which is often observed at intrasellar/suprasellar region in children. These cysts contain various amounts of cholesterol, triglycerides, methemoglobin, protein, desquamated epithelium, and watery fluid content. On the other hand, consists of a predominantly solid or mixed solid-cystic spherical tumor at suprasellar region in adults. The solid tumor parts have heterogenous intense contrast enhancement with small necrotic areas. The combination of papillary and adamantinomatous tumor parts within the same neoplasm has been described in 15\% of these tumors\(^{16}\).

Owing to their influence on most of the pituitary hormones, craniopharyngiomas may cause a myriad of symptoms. 80\% of patients present with signs of increased intracranial pressure and 60\% of patients with visual field deficits due to impingement of the tumor on the optic chiasm. Craniopharyngiomas can reach large sizes before they cause major symptoms\(^{4}\). In our case neither visual nor endocrinologic deficit was detected, but right hemiparesia and a mixt type aphasia were found because of tumor growing to the temporal basal ganglia and perisylvian cortex. Treatment of craniopharyngioma is a multidisciplinary task. Although the initial intervention focuses on the neurosurgeon, the endocrinologist and pharmacologist play vital roles in the management. Patients and families should be educated about potential long-term complications and prepared emotionally for necessary treatment. Along with the multiple endocrinologic problems discussed above, patients struggle with weight gain and body image concerns. This is an especially difficult area for adolescents. Visual field deficits, memory impairment, and academic difficulties are also potential complications. Close monitoring with neuropsychiatric testing is critical to identify deficits early and plan management accordingly\(^{12}\). There was no significant difference in survival between patients who underwent complete surgical excision and those who underwent partial excision plus postoperative external beam radiation. Nevertheless the authors advocated complete excision and avoidance of radiation when possible to prevent the delayed neurocognitive effects of radiation, as well as the increased risk of secondary neoplasm within the irradiated field. Another retrospective study identified substantial postoperative morbidity that negatively impacted quality of life and endorsed conservative excision in light of these possible complications\(^{11}\).

We obtained total resection without any additional neurological deficit.

**Correspondence to:**
Ömür Günaldi
E-mail: gunaldi@mynet.com

**Received by:** 23 October 2008
**Revised by:** 07 November 2008
**Accepted:** 07 November 2008

**The Online Journal of Neurological Sciences (Turkish) 1984-2010**
This e-journal is run by Ege University Faculty of Medicine, Dept. of Neurological Surgery, Bornova, Izmir-35100TR as part of the Ege Neurological Surgery World Wide Web service.

Comments and feedback:
E-mail: editor@jns.dergisi.org
URL: http://www.jns.dergisi.org
Journal of Neurological Sciences (Turkish) Abbr: J. Neurol. Sci.[Turk] ISSN e 1302-1664
REFERENCES


