

SEREBRAL ABSE İLE KOMPLİKE OLAN NADİR YERLEŞİMLİ EPİDERMOİD KİST

RARE LOCALIZING EPIDERMOID CYST COMPLICATED WITH BRAIN ABSCESS

Arif ÖNDER, Hakan Hadi KADIOĞLU

Ondokuz Mayıs University, Neurosurgical Department of Medical School, Samsun (AÖ); Atatürk University, Head of Neurosurgical Department of Medical School, Erzurum (HHK)

Özet

Sol temporoparietal bölgede yerleşik olan ve çıkarıldıktan sonra beyin absesi oluşumunun gözleendiği bir intraparakimal epidermoid kist olgusu sunuldu. Bu yerleşimde epidermoid kistin nadir oluşu, erken postoperatif dönemde aseptik menenjit ve mikroorganizma izole edilemeyen karakteristik beyin absesi gelişiminin görüldüğü bu olgu literatür bilgisi ile tartışıldı.

Anahtar kelimeler: *Aseptik menenjit, Beyin absesi, Supratentoriyal intraparakimal epidermoid kist*

Summary

A case presented in which a intraparenchymal epidermoid cyst localized in the left temporo-parietal lobe and complicated with brain abscess after removing the epidermoid cyst . Because the localization of epidermoid cyts is very rare, and it caused aseptic meningitis in early postoperative period and characteristic brain abscess that it could not isolated any microorganism this case is discussed within literature knowlegde.

Key words: *Aseptic meningitis, Brain abscess, Supratentorial intraparenchymal epidermoid cyst*

Figure 1. Contrast Enhanced Axial Tomography of the Patient; Cystic Mass Located in the Left Temporoparietal Region with Marked Shift Effect.

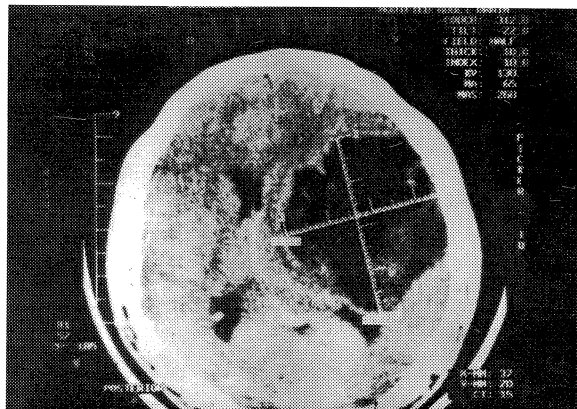
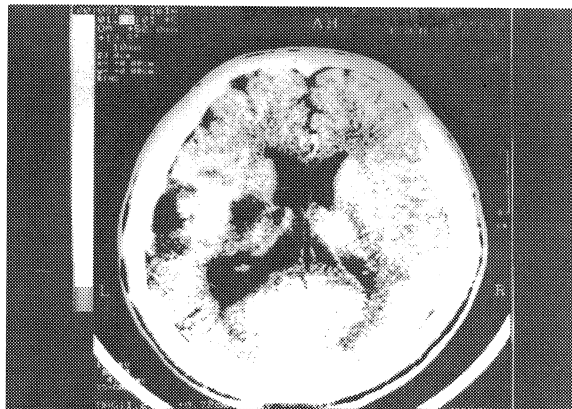


Figure 2. Postoperative Abscess in the Left Temporal Region and Marked Shift Effect.



Introduction

Intracranial epidermoid tumors constitute 0,3-1,8 % of all brain neoplasms (2). They are believed to originate from germinative epithelium and are slowly growing benign congenital neoplasm rarely complicated by malignant transformation (7,10). They are found characteristically along the basal surface of the brain and are located most commonly at the pontocerebellar angle and petrous apex as well as supra- or parasellar regions (10). Approximately 26 % are located supratentorially (8,10) and only 7,5 % are intra-parenchymal (8). Development aseptic meningitis is not an uncommon complication of the epidermoid tumor treatment and has been reported to occur in as many as 23 % of the cases (10). On the other hand, to the best of our knowledge brain abscess development has so far been reported in only one case (3). We report an intra-parenchymal epidermoid cyst which, following, total removal recurred with abscess development.

Case Report

28 years old male patient was admitted with headache of two years duration and progressive weakness on right side for the last one month.

On neurologic examination he was conscious, well oriented and cooperated. Early bilateral optic atrophy and left central facial paralysis as well as right hemiparesis, increased deep tendon reflexes on the right side and bilateral Babinsky positivity were determined. Computerized tomography (CT) revealed a left temporoparietal 10x10 cm cystic poorly contrast enhanced tumoral mass which obliterated the left lateral ventricle and caused a 1,5 cm shift (Fig. 1).

A left frontotemporoparietal osteoplastic craniotomy was performed and when the dura was

opened, a shining white tumoral mass of 3 cm diameter bulging from the cortical surface was found. The mass was well demarcated and could easily cleaved off, it was totally removed in pieces. Tumors extend involved the frontal, temporal and parietal lobes and surrounded middle cerebral artery and its branches; here and there adhesions were also present. The mass could be removed with no vascular injury, no anatomic relation with temporal bone was noted.

At the first postoperative day a right hemiplegia developed; at the third day it regressed to preoperative level and improved to normal by the eighth postoperative day. CT at the eleventh day showed bilateral mild pneumocephalus and small hemorrhages on the tumor bed; the left ventricle size was normal, the shift disappeared and no residual tumor was seen.. On the 12th day meningismus and a fever of 38°C were determined. Direct microscopy of the xanthochromic cerebrospinal fluid revealed 5 lymphocytes/cubic millimeters, bacterial cultures were negative. Repeated CT on the 22th day showed an abscess-like lesion causing 2 cm shift and which retained ring-like contrast medium and with severe edema around (Fig. 2). 23 days after the initial operation the patient was re-operated and an abscess with dirty green colored odorless fluid at the tumor's former location was found. The fluid was drained with aspiration. No microorganism could be isolated. The patient's clinic rapidly improved after the second operation with no other complications was discharged at the 14th postoperative day.

The patient has been under regular control for the last three years and no recurrences developed.

Discussion

Epidermoid cysts are composed of squamous epithelium similar to the keratinized epidermis and surrounded by connective tissue (2,7,8,10). They are generally accepted to be congenital and when intracranially localized they are usually not along the midline (3,4,10).

According to their localization, intracranial epidermoid cysts are usually classified as intradural or extradural with intradural localization being three times more common (3). Intradural lesions are found most commonly at the pontocerebellar angle, followed by petrous apex, suprasellar region and parapituitary area. They are uncommon in the supratentorial and hemispheric localisations. Rare hemispheric cysts are most often found in the temporal lobe, sometimes in the lateral ventricles (2-4,8). Only three out of 28 epidermoid cysts in the series of Guidetti and Gagliardi (1) were intraparenchymal and only 3 cases out of 40 cases published by Rubin et al (8) were supratentorial and intraparenchymal. In a series of 35 cases published by Yaşargil et al (10). 29 % of their cases were supratentorial and of these 70 % were localized along the medial base of the middle cranial fossa.

Epidermoid cysts slowly enlarge due to the accumulation of the cholesterol rich keratinized material derived from desquamating epithelial cells (6,7). Due to their slow rate of enlargement they usually reach large sizes before a diagnosis is established (9,10). They have almost always a benign clinic progression, symptoms are usually due to compression of the surrounding structures (6). Histologically, epidermoid cysts are also benign, but although infiltration and invasion are very uncommon it should be kept in mind that malignant transformation can occur in exceptional cases (3,5).

With CT epidermoid cysts are seen as irregular homogenous lesion with a density similar to the cerebrospinal fluid or non-homogenous hypodense area; they are usually not contrast enhanced. With magnetic resonance imaging although the appearance may vary according to the cyst ingredient's density they are similar to an arachnoid cyst, irregularities of the epidermoid cyst border is helpful in the differential diagnosis (6).

Total removal of the cysts is curative, although this cannot be achieved when the cysts is basally located and surrounds large vessels and nerve trunks (3,10).

Aseptic meningitis encountered following surgical removal is sometimes caused by spontaneous rupture of the epidermoid cyst (1,3,8). Abscess formation associated with intracranial epidermoid cyst is extremely uncommon and to our knowledge only one

such case has been previously reported. This case published by Kohno et al (3). was extradurally located, and the authors reported that following initial removal, residual tumoral tissue destroyed the paranasal sinus walls creating a route for infectious spread. In the present case, early postoperative aseptic meningitis may be due to the fragmentation of the cyst during removal. Successive development of the abscess is probably related to an infected temporal bone involvement which could not be detected by radiography in the pre- and post-operative period.

The clinical picture presented with this case emphasizes the possibility that the basally located epidermoid cyst may be associated with paranasal sinus or temporal bone involvement, and that the removal of the cyst may lead to the spread of an infection. Therefore especially in basally located epidermoid cysts, pre-operative radiologic evaluation should be performed with thin sections of the cranial base and that the case should be assessed together with an otorhinolaryngologist.

References

1. Guidetti B, Gagliardi FM. Epidermoid and dermoid cysts. Clinical evaluation and late surgical results. *J Neurosurg* 1977; 47: 12-18
2. Guridi J, Ollier J, Aguilera F. Giant intradiploic epidermoid tumor of the occipital bone: case report. *Neurosurgery* 1990; 27: 978-981
3. Kohno K, Sakaki S, Nakano K, Yano M, Matsuoka K. Brain abscess secondary to intracranial extradural epidermoid cyst. *Surg Neurol* 1984; 22: 541-546
4. Lewis AJ, Cooper PW, Kassel EE, Schwartz ML. Squamous cell carcinoma arising in a suprasellar epidermoid cyst. *J Neurosurg* 1983; 59: 538-541
5. Michenet P, Vital C, Rivel J, Lebaill B, Riemens V. Transformation maligne d'un kyste épidermoïde intracranien. *Ann Pathol* 1989; 9: 360-362
6. Olson JJ, Beck DW, Crawford SC, Menezes AH. Comparative evaluation of intracranial epidermoid tumors with computed tomography and magnetic resonance imaging. *Neurosurgery* 1987; 21: 357-369
7. Önder A, Kadioğlu HH, Takçı E, Kayaoğlu ÇR, Tüzün Y, Gündoğdu C, Aydın İH. İntramedüller epidermoid kist. Olgu bildirisi. *Türk Nöroşirürji Dergisi* 1993; 3: 41-44
8. Rubin G, Scienza R, Pasqualin A, Rosta L, Pian RD. Craniocerebral epidermoids and dermoids. *Acta Neurochir (Wien)* 1989; 97: 1-16
9. Sabin HI, Bordi LT, Symon L. Epidermoid cysts and cholesterol granulomas centered on the posterior fossa: twenty years of diagnosis and management. *Neurosurgery* 1987; 21: 798-805
10. Yaşargil MG, Abernatey CD, Sarioğlu AÇ. Microneurosurgical treatment of intracranial dermoid and epidermoid tumors. *Neurosurgery* 1989; 24: 561-567

Correspondence:

Hakan Hadi KADIOĞLU M.D., PhD

Atatürk Uni. Medical School
Head of Neurosurgical Department
25240- Erzurum Turkey
Tel : 0 442 316 63 33 / 2083, 2084
Fax : 0 442 316 63 40 (fax)
e-mail : hakanhadi@superonline.com.tr