

Aneurysmal cyst of frontal bone : A Case Report

Süleyman Kutluhan*, Memduh Kerman**, Nefi Kara**,
Ahmet Yesildag***, Galip Akhan*, Aliye Sarı****

*Suleyman Demirel University Medical School, Department of Neurology, Isparta

**Suleyman Demirel University Medical School, Department of Neurosurgery, Isparta

***Suleyman Demirel University Medical School, Department of Radiology, Isparta

****Suleyman Demirel University Medical School, Department of Pathology, Isparta

Özet

Anevrizmal kemik kisti

Anevrizmal kemik kisti, en sık olarak gençlerde görülen benign, non-neoplastik bir lezyondur. Kafa kemiklerini nadiren tutar. Henüz, etyoloji tam olarak aydınlatılmamıştır. Biz; muhtemelen travmaya bağlı gelişen bir santimetre çapında anevrizmal frontal kemik kisti olan bir hastayı sunuyoruz.

Anahtar sözcükler: Anevrizmal kemik kisti, frontal kemik, travma, görüntüleme.

Abstract

Aneurysmal bone cyst is a benign, non-neoplastic lesion that presents most frequently in young age groups. It rarely affects the skull. The etiology has not been elucidated, yet. We present a patient with aneurysmal cyst of the frontal bone, one centimeter in diameter, that is probably due to traumatic etiology.

Keywords: Aneurysmal bone cyst, frontal bone, trauma, imaging.

Introduction

Aneurysmal bone cyst (ABC) is a benign osseous lesions that can be seen in any part of the skeletal system. While characteristically, it is found in long bones, approximately 2.5-6% occurred in the skull. Patient with ABC classically present during the second and third decades of life (1-3). Calvarial ABCs can occur in any part of skull. It is estimated that approximately 14.7% of the cranial cases occur in frontal region alone. However the etiology has not been elucidated, yet (1,4), trauma has been put forward as an important etiologic factor (5-7). We presented a case with aneurysmal cyst of the frontal bone was confirmed by histologically but had no characteristically radiological findings.

Case report

A 30-year-old female patient presented with a painful lump in the right supraorbital region. For six months, she had complained of headaches at the right frontal area. She had a history of head trauma, which did not cause any disturbance in consciousness, about 10 years ago. Clinical examination revealed a small lump, one cm in diameter, which was smooth and tender to touch, and a one cm scar tissue overlying the lesion due to the trauma on inspection. Skull X-ray showed a lytic area that was one cm in diameter in burr-hole shape over the right frontal bone (Fig. 1). Bone window of computed tomograph (CT) showed a bone lesion expanding diploe without penetration into the cerebrum (Fig. 2). Magnetic resonance imaging (MRI) showed a soft tissue mass (1.2x 1.5 cm in

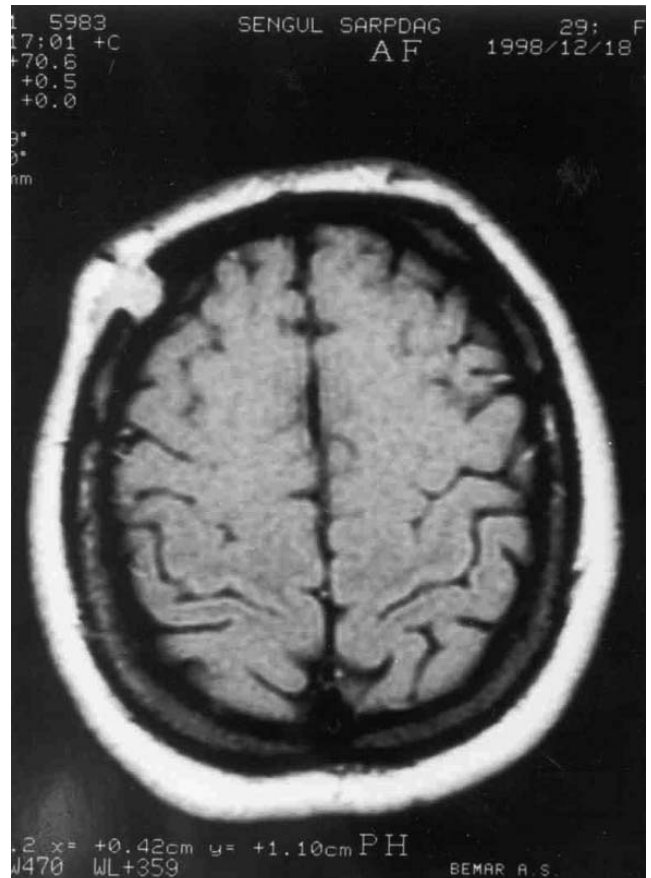


Figure 3 : T1 weighted magnetic resonance imaging shows a moderate hyperintense bone lesion

diameter) within an expanding diploic space without penetration into the cerebrum (Fig. 3).

The mass was completely excised with craniotomy for diagnostic biopsy. It was brownish in color and firm in consistency. The minimal effect of mass was

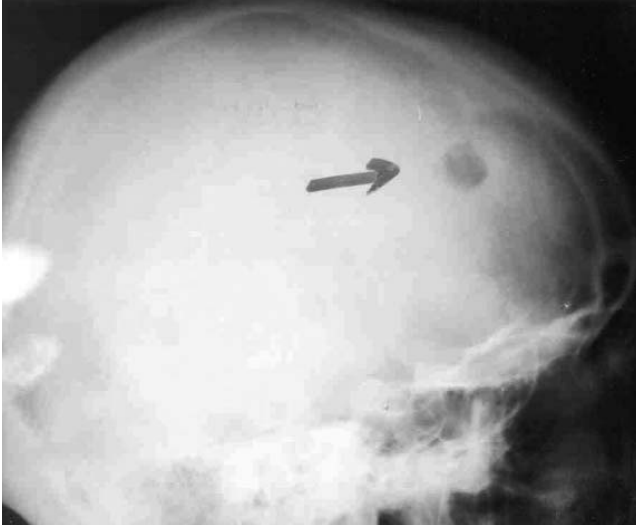


Figure 1 : Skull X-ray depicting a lytic lesion of the frontal bone observed on the dura mater. But, no abnormality was seen in and under the dura. The defect of craniotomy was closed using a unicortical autogenic graft in the same size taken from the same side of the frontal bone.

Macroscopically, the surgical specimen was 1.5 cm in diameter, circumscribed and brownish colored. The

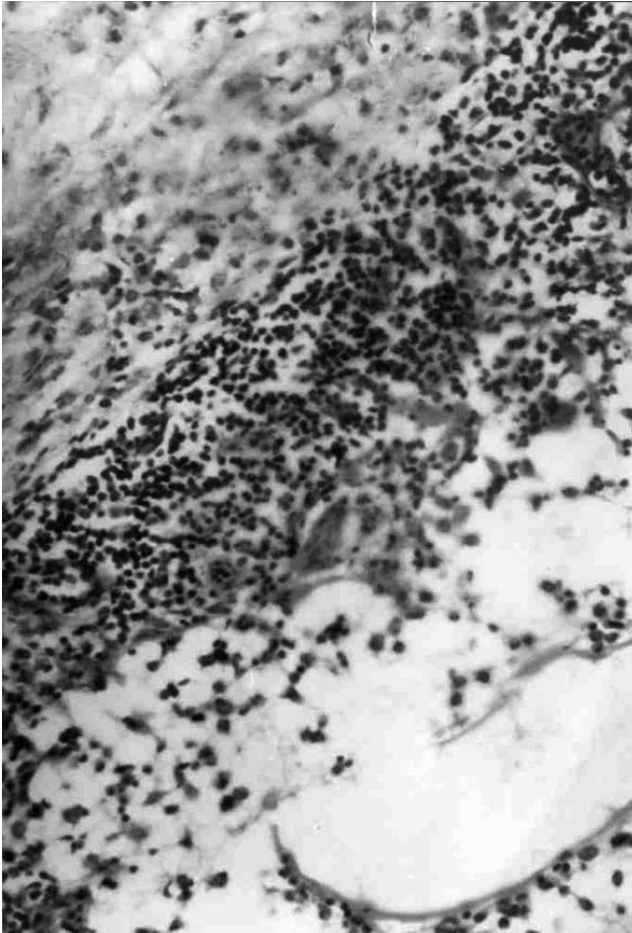


Figure 4 : Multinucleated giant cells, haemosiderin laden histiocytes, haemorrhage, lymphocytes, polymorph leukocytes and myofibroblasts were seen beneath the surface of the cystic cavity (HE100X)

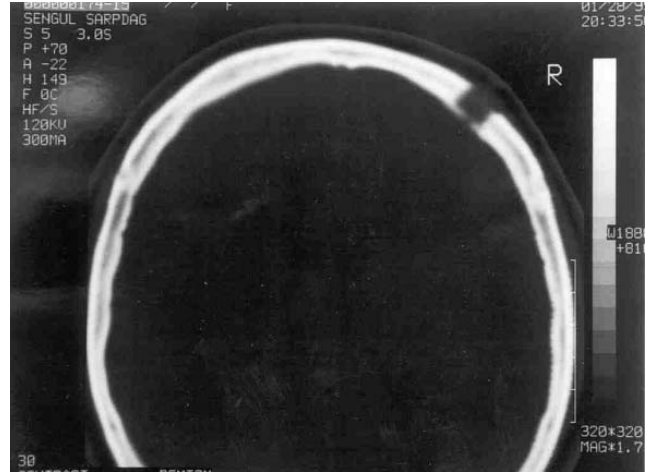


Figure 2 : Bone window of CT shows bone lesion expanding diploe without penetration into the cerebrum

cross section of the mass is characterized by the presence of multiple dilated blood filled spaces, separated by fibrous and bony septa, giving a honeycomb appearance. In histological examination, the cavity of the cyst was filled with the blood. The solid part of the cyst as well as the septa was containing proliferated spindle shaped fibroblasts with scattered multinucleated, giant cells, lymphocyte, haemosiderin-laden macrophages, polymorph nucleated leukocyte and red blood cells. There were large blood filled spaces, partly lined by endothelial like layer and rim of osteoid and trabeculae of normal bone at the periphery of the septa (Fig. 4).

The patient had a complete and uncomplicated recovery. Postoperatively, no problem has been observed for 2.5 years.

Discussion

ABCs involves rarely cranial bones and can occur any part of them. It is reported that aneurysmal cyst of the frontal bone was approximately 14.7% of the cranial cases (1,8). While the sizes of frontal ABCs were reported within 4-6 cm in diameter (2,3), the diameter of mass of our case was only one cm.

Trauma was thought to be a responsible etiologic factor (1,4). There was a scar tissue belonging to trauma of 10 years ago overlying the lesion in our case. This association advocates the hypothesis that etiopathogenesis of ABC is related with trauma.

Radiologic features of an ABC are characteristic although not diagnostic. It has a typical blown out or soap bubble appearance on the X-rays (1,4,5), we saw only a homogenic lytic area as a burr-hole. Multiloculations and fluid-fluid levels within the cysts may be shown on CT. Furthermore CT shows overlying cortex thinning and expanding (1). But, It was showed only a little expanding on the frontal bone in our case on bone window of CT. MRI shows multiloculation within cysts. It is more sensitive than

CT for fluid-fluid levels because the longer acquisition time allows the blood sediment (9). Only a moderate hyperintense bone lesion within an expanding diploe was seen in our case on MRI.

Histologically in ABC, there is a variable amount of extracellular collagen formation. There are many channels and some of them are filled by blood and lined by single layer of flat endothelium. Giant cells, haemosiderin-laden histiocytes, and new bone formation are also found within the stromal matrix (1,5). Histologic findings of our case also had these features.

However our case had not a typical radiological image, but histological examination confirmed diagnosis of ABC. It is also the smallest size of aneurysmal cyst of the frontal bone that was reported in the literature.

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Yazışma Adresi:

Dr. Süleyman KUTLUHAN
SDU Tıp Fakültesi Nöroloji AD 32040 Isparta, TURKEY

Telephone: 90-246-2371727

Fax : 90-246-2371758

e-mail: skutluhan@hotmail.com