Pseudoaneurysm of the Superficial Temporal Artery After a Blunt Trauma: Case Report

Künt Travma Sonrası Süperfisyal Temporal Arterin Psödoanevrizması

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ABSTRACT Pseudoaneurysm of the superficial temporal artery is a rare condition. It's the 1% of all the aneurysms. More than 95% of superficial temporal artery pseudoaneurysm are due to blunt trauma and observed in male subjects. Generally, a pulsatile mass, approximately 1-1.5 cm in size, develops over a 1 to 6 week period. If left untreated, it may lead to spontaneous rupture. The most common method of treatment is surgical excision. In recent years, the incidence of pseudoaneurysm of the superficial temporal artery is increasing, probably due to the increase in the number of individuals actively involved in sports. In this case report, we described a 29-year-old male patient, presented with a widespread edema and swelling in the left temporal region, who experienced a blunt hit in the head during a football match a day ago.

Key Words: Aneursym, false; craniocerebral trauma; temporal arteries

ÖZET Süperfisyal temporal arterin psödoanevrizması nadir bir durumdur. Anevrizmaların %1'ini oluşturur. Temporal arterin psödoanevrizmasının %95'ten fazlası künt travma sonrası ve erkeklerde gelişir. Genellikle travma sonrası bu bölgede, 1-6 hafta içinde ortaya çıkan, ortalama 1-1.5 cm büyüklüğünde pulsatil kitle görülür. Tedavi edilmediği takdirde spontan rüptüre neden olabilmektedir. En sık kullanılan tedavi metodu cerrahi eksizyondur. Son zamanlarda, muhtemelen sporda aktif olarak rol alan kişilerin sayısındaki artışa bağlı olarak süperfisyal temporal arterin psödoanevrizmasındaki insidans artmaktadır. Bu çalışmada, bir gün önce oynanan bir futbol maçı sırasında kafasına aldığı künt darbe sonrası yüzde yaygın ödem ve sol temporal bölgede şişlik şikayetiyle başvuran 29 yaşındaki bir erkek olgu sunulmuştur.

Anahtar Kelimeler: Psödoanevrizma; temporal arter; travma

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Pseudoaneurysm of the superficial temporal artery (STA) is a rare condition followed by blunt traumas occurring in the head and neck region.[1,2] Also, it can be iatrogenic or may occur spontaneously. Due to the risk of rupture and bleeding, early treatment is recommended after a diagnosis is made. In our literature search, there are few case reports of STA pseudoaneurysm developing after blunt trauma.

CASE REPORT

29 years old male football player presented with widespread edema in the face and left temporal area (Figure 1). He described a hit in the head regi-

on during a match that was played a day ago. Scull X-ray and neurological examination were normal. Computerized tomography showed a fracture in the zygomatic bone. Reduction was performed with an incision through scalp under local anesthesia. The patient was discharged on the same day with oral medications. Ten days after the operation, edema subsided, but another swelling developed in the left temporal area which increased in size gradually. Pulsation could be felt on the swelling and it was approximately 1.5 x 1 cm in size. MR angiography was performed for differential diagnosis. No intracranial pathology was detected, and the MR images suggested pseudoaneurysm in STA. Doppler ultrasonography which showed local dilatation resulting in increased blood flow and thrombus formation. A decision for surgical excision was made, and under local anesthesia, after distal and proximal ends of the aneurysm were tied, excision was performed. The patient was discharged on the same day uneventfully. Histopathological examination also suggested pseudoaneurysm in STA (Figure 2a, b). No recurrence was observed during 5 months of follow up (informed consent was obtained from the patient).

DISCUSSION

In the temporal region, protection provided by the surrounding tissues is limited due to its anatomical characteristics. Therefore, blunt trauma or physical objects striking at this region may cause compression or rupture in the arterial wall due to the pressure effect.[3]

Arterial pseudoaneurysms, which comprise 1% of all aneurysms, partial necrosis or transection is observed. Hematoma formation occurs with a false capsule composed of fibrous tissue around it.[4] Under the effect of local blood flow the lesion gradually increases in size. In line with this, several days after the operation we also observed a mass gradually increasing in size after the resolution of edema.

In the past, the main cause of pseudoaneurysms was the war injuries.[5] Today this has been replaced by sports activities (hockey puck, baseball, rugby, paintball and squash ball), non-sports activities (traffic accidents, fistfight, or missile injuries), iatrogenic causes (punch hair grafting, dental surgery, internal artery ligation, temporomandibular arthroplasty, cyst excision, craniotomy etc.), or spontaneous formation (arteriosclerotic diseases or congenital defects may be associated with this condition).[5-8]

More than 95% of pseudoaneurysms are due to trauma and observed in male subjects. Pseudoaneurysms in the head and neck region occurring after trauma usually develop in the superficial temporal arter.[1,2] A pulsatile mass, approximately 1-1.5 cm in size, develops over a 1 to 6 week period.[4] Typically, pressure on the proximal part of the mass results in disappearance of the pulsation. Some authors claim that the mass may develop even after years.[9] Usually the patient has no other complaints. However, in some cases headache, dizziness, visual disturbance, ear discomfort, bleeding, or neurological deficits have been reported.[9] In our patient, pulsation disappeared and the size of the mass decreased upon pressure against the proximal part. He had no other complaints apart from cosmetic concerns.

Differential diagnoses should include other mass lesions such as lipomas, hematomas, abscesses, cysts, vascular or soft tissue tumors, lymphadenopathy, arteriovenous fistulae with pulsation, and supraorbital nerve neuromas.[7,3] Careful history taking and palpation are the most important diagnostic tools to detect pseudoaneurysms of STA and to differentiate it from other lesions. A history of trauma in the temporal region and thrill heard over the mass during systole should raise the suspicion of pseudoaneurysms. In arteriovenous fistulae the thrill is continuous. Many authors consider this approach sufficient for the diagnosis although several confirmative investigations exist such as doppler ultrasonography, CT angiography, MR angiography and digital subtraction angiography.[8]

Treatment indications for STA pseudoaneurysms include cosmetic reasons, headache and the risk of spontaneous rupture.[10] Untreated cases carry the risk of rupture and bleeding due to erosion of the vessel by the bone tissue or trauma.[11] Currently, surgical excision under local anesthesia is the treat-

FIGURE 1: General aspect of pseudoaneurysm.

ment of choice in many cases, and it is a simple and safe procedure with low recurrence rates. Other treatment alternatives are selective catheter embolization and US-guided percutaneous thrombin injections.[4,12]

CONCLUSION

Pseudoaneurysm of STA is an important condition that may require surgical treatment due to the risk of rupture or bleeding after secondary trauma, and it should be considered in differential diagnosis of mass lesions in the temporal region by the sports medicine specialists and surgeons.

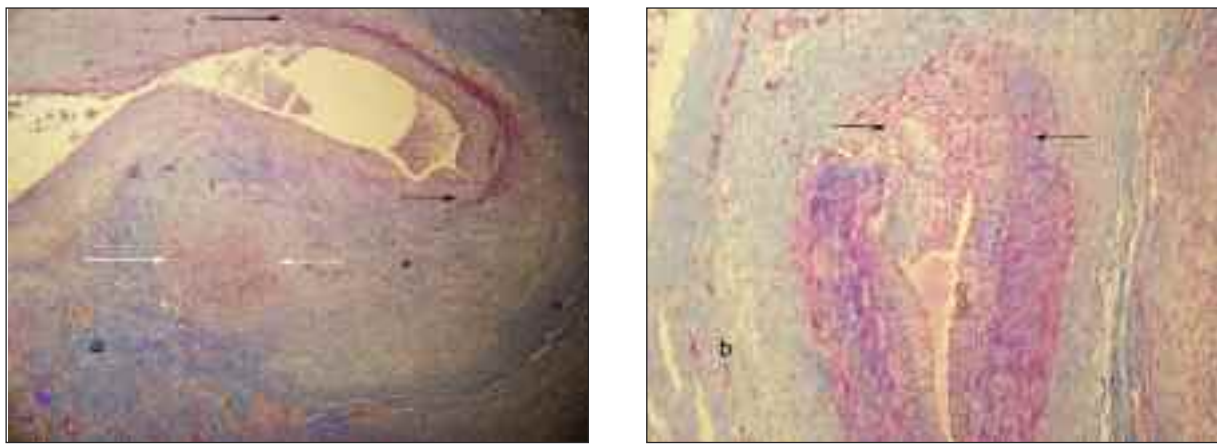

FIGURE 2: a. Modified Crossman preparation of the specimen. Elastic fibers are present only in a small part of the tunica media (between black arrows). Tunica media infiltrated with inflammatory cells within the re-vascularised fibrous tissue (between white arrows) (Magnification: x4). b. Another medium sized artery adjacent to previous artery. Internal elastic lamina and the tunica media discontinued (between arrows). Tunica intima protruding through the disrupted arterial wall (Magnification: x10).

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