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#### **TRAUMATIC RADIAL ARTERY-CEPHALIC VEIN FISTULA: CASE REPORT**

##### **ABSTRACT**

Arteriovenous fistulas are abnormal communications between arteries and veins. They occur generally due to penetrating traumas but fistulas after blunt traumas have also been reported. We are presenting an extremely rare type of posttraumatic fistula which occurred between radial artery and cephalic vein. A 21 year old male patient admitted to our outpatient clinics suffering from the swelling and pain of his left hand and forearm. There was an arteriovenous fistula on his left wrist. He mentioned that his left wrist was injured at the time of a traffic accident 5 years ago. His complaints and the thrill disappeared after fistula ligation. Our case report shows the importance of systemic physical examination in the early diagnosis of arteriovenous fistulas as well as in preventing long term complications particularly in patients who have the history of trauma.

**Keywords:** Case Report, General Surgent, Arteriovenous Fistula, Vascular Injury, Upper Extremity

#### **TRAVMATİK ÖNKOL DAMARI-KAFADAN VEİN FİSTÜL: OLGU SUNUMU**

##### **ÖZET**

Arteriyovenöz fistüller arterler ve venler arasındaki anormal bağlantılardır. Çoğunlukla penetran travmalar sonucu oluşurlar. Ancak künt travmayla oluşmuş fistüller de bildirilmiştir. Biz oldukça nadir bir travma sonrası fistül tipi olan radial arter ve sefalik ven fistülü bulunan bir olguyu sunuyoruz. Polikliniğimize 21 yaşında bir erkek hasta sol el ve önkolda şişlik ve ağrı şikayetleriyle başvurdu. Sol el bileğinde arteriyovenöz fistül saptandı. 5 yıl önce geçirdiği trafik kazasında sol el bileğinin yaralandığını ifade ediyordu. Fistülü bağlanan hastanın şikayetleri geçti ve thrill kayboldu. Bu olgu eski travmalı hastalarda arteriyovenöz fistülün erken tanısı ve uzun dönem komplikasyonların önlenmesi açısından sistemik muayenenin önemini ortaya koymaktadır.

**Anahtar Kelimeler:** Olgü Sunumu, Genel Cerrahi, Arteriyovenöz Fistül, Vasküler Yaralanma, Üst Ekstremité



### 1. INTRODUCTION (GİRİŞ)

Arteriovenous fistulas are the abnormal communications between arteries with high intravascular pressure and vessel wall resistance and veins with low intravascular pressure [1,2]. Due to the pressure difference, the blood prefers to flow into the venous system via the fistula rather than the capillary bed. They occur due to penetrating traumas in major [2 and 6]. Though, fistulas occurring due to blunt traumas have also been reported [6]. Traumatic radial artery and cephalic vein fistula is extremely rare [2 and 6].

### 2. ÇALIŞMANIN ÖNEMİ (RESEARCH SIGNIFICANCE)

In this study, traumatic radial artery-cephalic vein fistula: case report is discussed. Our case report shows the importance of systemic physical examination in the early diagnosis of arteriovenous fistulas as well as in preventing long term complications particularly in patients who have the history of trauma.

### 3. CASE REPORT (OLGU SUNUMU)

A 21 year old male patient admitted to our outpatient clinics suffering from the swelling and pain of his left hand and forearm. The pain was present for the last 2 years and increases while using his hand and he added that he is not able to use his hand properly for the last few months. On physical examination, his left arm was edematous. Dilated varicous veins were present on his left hand and forearm (Picture 1). Color changes of the skin which might have occurred due to microembolisms including the index finger and thumb of his left hand was observed (Picture 2).



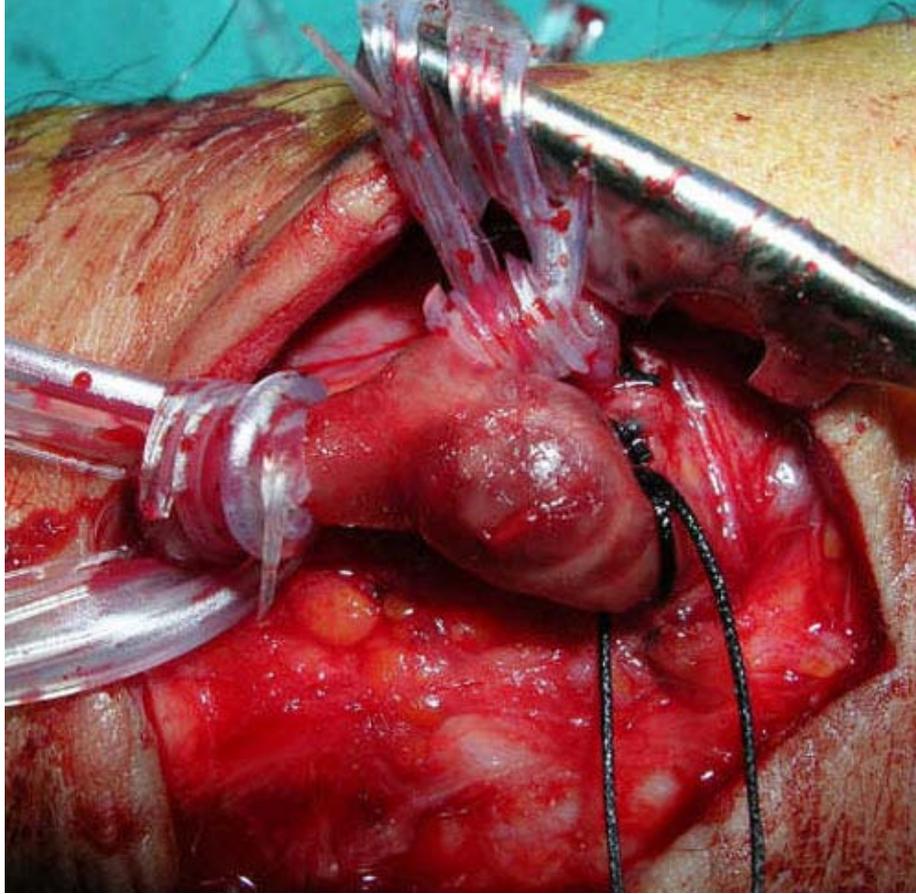
Picture 1. Dilated veins on the wrist occurring due to traumatic radial artery-cephalic vein fistula

(Resim 1. Bilek travmatik radyal arter-kafadan ven fistül nedeniyle meydana üzerinde Dilated damarlar)



Picture 2. Color changes of the skin of the index finger  
(Resim 1. Parmaklarda meydana gelen renk deęişiklikleri)

Venous murmurs and thrill were detected throughout his left arm particularly at the level of the wrist. Thrill was disappearing when pressure was applied to the veins on the wrist. No surgical procedure have been performed previously. He mentioned that his left wrist was injured at the time of a traffic accident 5 years ago. No abnormalities of the bones of the wrist were detected on x-rays. Cardio-thoracic index was normal on chest x-ray. A fistula was detected between radial artery and cephalic vein on exploration performed under local anesthesia (Picture 3). The thrill was disappearing when the vein was ligated at the junction of the artery. A fistulotomy was performed, venous side ligated and the defect on the radial artery was sutured. On postoperative follow-up the murmur and thrill were both disappeared.



Picture 3. Arterio-venous fistula between radial artery and cephalic vein  
(Resim 3. Cephalic veai ve radial artery arasındaki arterio-venus)

#### 4. CONCLUSIONS (SONUÇLAR)

Although arteriovenous fistulas might be asymptomatic, they might also present with skin changes, edema, unilateral varicous veins or with cardiac failure [1, 2 and 5]. Physical examination is very important on diagnosis. Angiography and ultrasonography could be helpful in selected cases [1 and 4]. Endovascular interventions, mechanical compression and surgery can be performed for treatment [1, 2 and 6]. Radial artery-cephalic vein fistulas have been reported in the literature occurring due to penetrating traumas such as needle puncturing in order to get donor blood sample or due to recurrent blunt traumas [3 and 6]. Our case report shows the importance of systemic physical examination in the early diagnosis of arteriovenous fistulas as well as in preventing long term complications particularly in patients who have the history of trauma.

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