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OLGU SUNUMU - CASE REPORT

PSEUDOANEURYSM OF THE BRACHIAL ARTERY AND MEDIAN NERVE COMPRESSION AFTER A STAB WOUND

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A 35-year-old male patient was seen with pulsatile swelling in the left antecubital fossa and a flexion defect in the thumb and adjacent finger 50 days after suffering a stab wound. A cardiovascular examination revealed weak pulsation in the brachial, radial and ulnar arteries. The neurological findings included an extension defect of the forearm in addition to the flexion defect in the fingers. During surgery, a false aneurysm of the brachial artery was confirmed and a short segment of the brachial artery was excised with the aneurysm and replaced with a saphenous vein graft. In this setting, the median nerve examination was performed by neurosurgery experts. One month later, the patient had fully recovered and had returned to his normal occupation.

Key Words: Stab Wound, Pseudoaneurysm, Brachial Artery, Median Nerve Compression.

KESICI ALET YARALANMASI SONRASI BRAKIAL ARTER PSÖDOANEVRIZMASI VE MEDIYAN SINIR KOMPRESYONU

35 yaşında erkek hasta kesici alet yaralanmasından 50 gün sonra sol antekübital fossada pulsatil kitle, baş ve işaret parmaklarında fleksiyon kısıtlılığı ile başvurdu. Kardiyovasküler muayenede brakiyal, ulnar ve radiyal arterlerde nabız zayıflığı saptandı. Nörolojik muayene parmaklarda fleksiyon kısıtlılığına ek olarak ön kolda ekstansiyon kısıtlılığı içeriyordu. Operasyonda brakiyal arter psodoanevrizması tanısı doğrulandı ve kısa bir brakiyal arter segmenti psödoanevrizma ile birlikte çıkartıldı ve safen ven grefti ile onarıldı. Bu şartlar altında mediyan sinir değerlendirmesi beyin cerrahisi uzmanlarınca yapıldı. Bir ay sonra hasta tam olarak düzeldi ve normal iş yaşantısına döndü.

Anahtar Kelimeler: Kesici Alet Yaralanması, Psödoanevrizma, Brakiyal Arter, Mediyan Sinir Kompresyonu.

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Direct traumatic vascular injury to the brachial vessel associated with compression to the median nerve is rare. Accordingly, trauma to the brachial artery was reported in 30% of all vascular injuries1. False aneurysm of the brachial artery is caused by either low velocity missile injuries or stab wounds or is iatrogenic. To our knowledge, a false aneurysm of the brachial artery associated with median nerve compression has not been reported previously. We report such a case, and discuss the early treatment of arterial trauma and our management.

CASE REPORT

A 35-year-old man was admitted initially with a stab wound through the upper abdomen and left external elbow to a tertiary hospital. He underwent initial emergency surgery to control his abdominal bleeding and the bleeding in the arm was controlled initially by a compression dressing. Fifty days later, he was referred to our clinic with a pulsatile swelling in the left antecubital fossa and a flexion defect of the thumb and adjacent finger (Fig. 1).

Figure 1: Swelling in the left cubital fossa.

Upon admission to our clinic, the cardiac examination was normal. Head, neck, and abdominal thoracic examinations were unremarkable. He had a 6x5 cm pulsatile mass in the left antecubal fossa. Pulses were weak in the brachial, radial and ulnar arteries of the left arm. The left hand was much colder than the right. Duplex ultrasonography of the left arm revealed a 7x5 cm pseudoaneurysm originating from the brachial artery. Distal flow was present but not normal. These findings supported our clinical suspicion of a large brachial false aneurysm. Brachial angiography demonstrated a well-defined false aneurysm, 5 cm in diameter, originating from the brachial artery (Fig. 2).

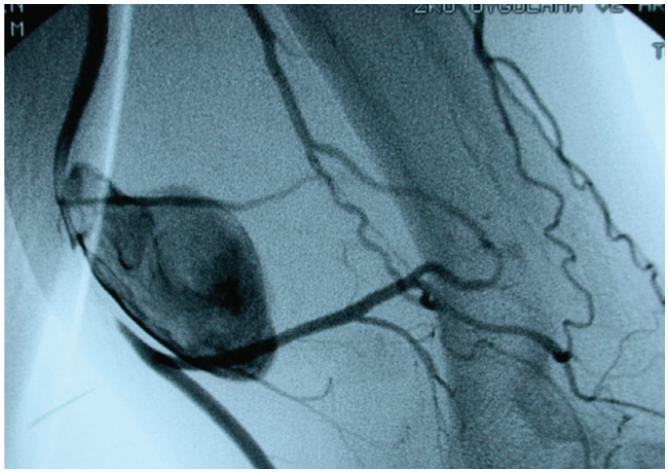

Figure 2: Brachial angiography demonstrated a well-defined false aneurysm, 5 cm in diameter, originating from the brachial artery.

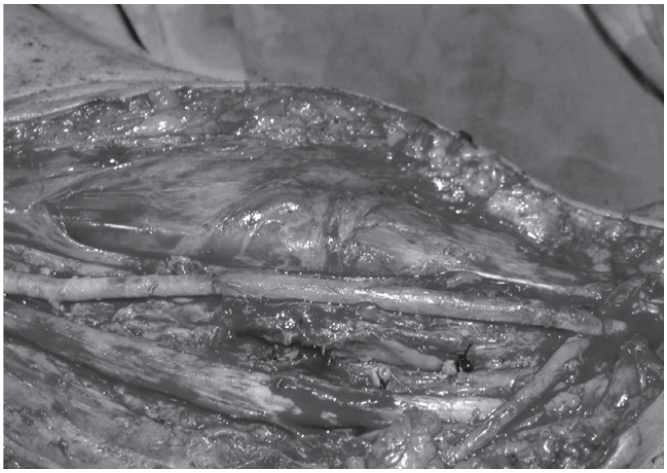

Figure 3: Saphenous vein interposition graft.

A neurological examination revealed weakness of all the median nerve innervated muscles of the left arm. There was also sensory loss in the median nerve dermatome. Median motor and sensory nerves were inexcitable in electroneurography. Electromyography revealed acute denervation in all median nerve innervated muscles of the left arm. There was no voluntary activity. The patient was taken to the operating room for repair of his pseudoaneurysm and median nerve. Through a continual incision approximately 4 cm below the antecubital region proximally to the 4 cm superior to the pseudoaneurysm, the median nerve was noted to be splayed across the pseudoaneurysm. The brachial artery was excised from the fibrous capsula of the pseudoaneurysm. With the median nerve protected, the brachial artery was clamped proximally and distally, and the pseudoaneurysm was opened. Approximately 150 ml of arterial blood and thrombus was evacuated. Because the brachial artery lost its continuity, it was replaced with a saphenous vein interposition graft (Fig. 3). Distal pulses were confirmed by palpation. Neurosurgeons continued the operation for median nerve compression due to aneurysm. The median nerve was examined by the neurosurgeons and was found to be intact. They found that the median nerve was compressed due to aneurysm and external neurolysis was performed. The wound was irrigated, and the pseudoaneurysm sac and the skin were closed. The patient had an uneventful postoperative course and was discharged on the 14th postoperative day. Postoperative duplex sonography revealed no evidence of pseudoaneurysm in the left brachial artery. Two months after the operation, the neurological examination was completely normal. Three months later, he had fully recovered and had returned to his normal occupation.

DISCUSSION

Arterial vessels have been reported to compress peripheral nerves both spontaneously and as a result of the formation of true or posttraumatic false aneurysms2-5. As well as brachial artery stab wounds representing a nonsignificant proportion of civilian vascular injuries, brachial pseudoaneurysm and median nerve compression are also rare. To our knowledge, this is the only report in the literature of brachial false aneurysm caused by median nerve compression. In the reported cases, brachial pseudoaneurysms were mostly derived from phlebotomy6, invasive studies7, or penetrating trauma8.

Peripheral entrapment neuropathies occur in high frequency and present clinically with a wide range of variations. They need to be recognized early enough in order to initiate correct therapy and so to obviate serious nerve lesions and possible neurological sequelae. In our case, in spite of pathological electromyographic findings, the median nerve was found intact upon surgery.

Both military and civilian experiences have shown that the initial wound may be unimpressive, although it is located near a major vessel. Pseudoaneurysm may develop within days or months. In these circumstances, the physician should suspect vascular injury and identify it as early as possible.

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