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Brachial Artery Reconstruction After Chainsaw Injury

Motorlu Testere Yaralanması Sonrası Brakiyal Arter Rekonstrüksiyonu

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Penetrating brachial vascular injuries constitute a particular workload of the rural trauma clinics. The majority of the penetrating injuries are caused by the stab (57%), gunshots (29%), and various sharp objects (7%). The remaining 6% represents other injuries like dog bites, or car accidents.[1] In this report, we present a rare case of a logging accident in which the forearm was cut by a chainsaw. The brachial artery was disrupted, and it was repaired by the interposition of an autologous vein graft.

A 54-year-old male referred to the emergency clinic with a chainsaw injury to his right arm. There was a massive bleeding from the antecubital region together with an extensive tissue loss and hematoma inside the lodge. Palpation of the peripheral pulses revealed total pulse deficit on radial and ulnar arteries. Color Doppler ultrasound showed triphasic patterns in the axillary artery and humeral part of the brachial artery in the injured region. He was conscious with a blood pressure of 140/65 mmHg and a heart rate of 83 bpm. The patient was diagnosed with total disruption of the brachial artery and was decided to be operated promptly.

The patient was taken to the operating room. Under general anesthesia, the right antecubital region was explored through a longitudinal skin incision. The brachial sheath was reached with spasmodic vessels and no bleeding. The total cut and segmental loss of the brachial artery was identified (Figure 1). Proximal and distal bulldog clamps were positioned to expose the precise edges for anastomosis and to secure the artery from bleeding. 5000 IU unfractionated heparin was given intravenously. The brachial artery was repaired with a great saphenous vein (GSV) graft (Figure 2) interposition. A 12 cm long GSV segment was interposed between the free edges of the brachial artery. The arterial tissue loss was extensive, so the autologous graft interposition gave a good result (Figure 3). Polypropylene No:6/0 with a 13 mm needle was used as the suture material. The proximal bulldog clamp was removed, and arterial de-airing was performed. There has been no need for intraoperative blood product transfusion. Gentamycin (160 mg/day), Cefazolin (1500 mg/day), Acetylsalicylic acid (150 mg/day) were prescribed du-

ring the postoperative follow-up. The patient was discharged on ninth postoperative day with intact distal pulses and no neurologic complication.

Antecubital injuries due to the chainsaw are uncommon but potentially dangerous. A kickback movement occurs when the chainsaw tip suddenly engages to a solid object, resulting it to make sudden jerk to opposite direction.[2] This type of action may cause severe injuries to the vascular structures of the arm, neck or even the face. The graft interposition is the most preferred type of reconstruction if there is a gross vascular segmental loss. GSV is the mostly used autologous vein graft for this kind of arterial injuries.[1]

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

İdea/Concept: *Hamit Serdar Başbuğ;* ***Design:*** *Hamit Serdar Başbuğ;* ***Control/Supervision:*** *Kanat Özışık;* ***Data Collection and/or Processing:*** *Hamit Serdar Başbuğ;* ***Analysis and/or Interpretation:*** *Hamit Serdar Başbuğ;* ***Literature Review:*** *Hamit Serdar Başbuğ;* ***Writing the Article:*** *Hamit Serdar Başbuğ;* ***Critical Review:*** *Kanat Özışık.*

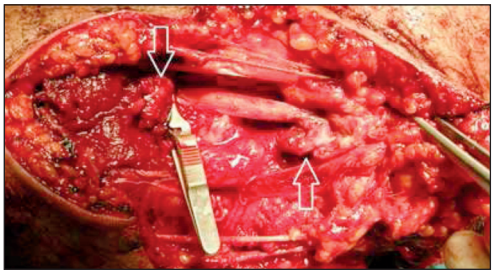

FIGURE 1: The arrow on the left is showing the distal end of the brachial artery (BA), the arrow on the right is showing the proximal end of the BA.

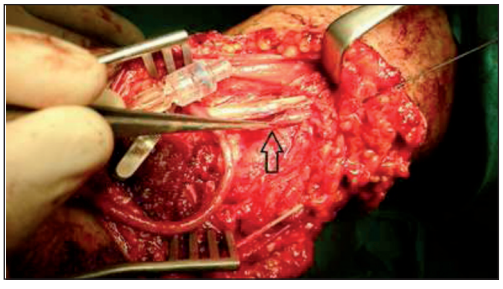

FIGURE 2: Arrow is indicating the brachial artery proximal edge (The distal anastomosis had already been performed).

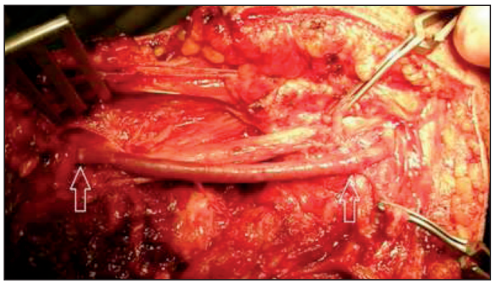

FIGURE 3: The arrow on the left is showing the distal anastomosis and the arrow on the right is showing the proximal anastomosis lines.

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