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After a blunt trauma, xillary artery transection is repaired endovascularly with a stent graft.

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Abstract

Axillary artery transection injuries are uncommon and often require surgery to repair. The patient in this case was assessed to be at high risk for open surgery, and an urgent endovascular therapy option employing a stent graft is described.

Keywords
Axillary artery transection, Endovascular, Retrograde access, Stent graft,Trauma.

Introduction

It is uncommon for the axillary artery to sustain trauma after a blunt injury. The traditional method of repair is surgery, however this can be challenging for anatomical reasons and has the potential to result in life- and limb-threatening complications. [1] Thus, endovascular therapy offers a therapeutic alternative for the high-risk patient. There are case reports for the endovascular therapy of pseudoaneurysms with stent grafts, but there is little to no information.the boundaries. In this report, a left axillary artery transsection is treated with a stent graft employing both antegrade and retrograde access.

CASE REPORT

In the course of performing his duties, a volunteer firefighter, age 41, got pinned beneath a sizable tree branch. Presentation to the emergency department was delayed by 8 hours as a result of protracted extrication at the scene. He was discovered to be in hemorrhagic shock upon arrival. Physical examination revealed a chilly and puffy left arm. Additionally, there was ecchymosis on the left chest wall. A left scapular fracture and accompanying hematoma in the left axilla/anterior chest wall were found on a computer tomography (CT) scan. There were no further extravasation sites found in the pelvis, abdomen, or chest. Despite showing vigorous extravasation in the axilla, a CT angiography could only provide limited more information becauseThe patient's body habitus (body mass index of 55) and poor bolus timing. Despite extensive IV fluid and blood product resuscitation, the patient's hypotension and coagulopathy persisted. Urgent consultations with interventional radiology and vascular surgery were made.

Initial examination revealed a weak radial pulse in the left hand. There were now serious concerns about compartment syndrome because the edoema in the left arm had gotten much worse.INR was 1.9 at the moment, and the patient's haemoglobin level was 9.of discussion. The choice was made to pursue angiography in an effort to more precisely describe the injury and, if possible, treat it endovascularly. The next step was to take the patient to the operating room for an urgent fasciotomy with potential surgical exploration or bypass (if needed). Unfortunately, approximately 10 hours had gone by this point, and the outlook was not good.
The interventional radiology suite received the patient right away. For the procedure, anaesthesia was present to help with hemodynamic support. In an effort to treat his coagulopathies, the patient continued to receive blood products such packed red blood cells and fresh frozen plasma. There was already a centre line in theIn order to do the angiography, the patient's left groyne was accessed. Using ultrasound-guided access, a 6F 10 cm Pinnacle sheath (Terumo) was inserted into the left common femoral artery. Selective angiography using a 4F Glidecath (Terumo) revealed active extravasation and full transection of the left axillary arter. After gently inflating a 5F Fogarty balloon (Edwards), a brief ultrasound-guided retrograde access procedure was carried out into the tiny yet pulsating left radial artery (3 mm in diameter).

Following ultrasound-guided access, a 6F Slender sheath (Terumo) was inserted into the radial artery. Along with the transection injury, angiography showed considerable retraction of the axillary artery stumps.It was decided to try to achieve "through and through" across the hematoma if possible after a brief discussion of the alternatives with vascular surgery. Through the radial approach, a 6F Atrieve snare catheter (Argon Medical) was inserted into the axillary hematoma. A wire was used to deflate and remove the Fogarty balloon. Quickly, the left groyne access was used to antegradely implant a 4F Navicross (Terumo) catheter.

A few minutes later, a 0.018 wire (Glidewire Advantage, Terumo) was successfully snared in the soft tissue/ hematoma. A 0.018 wire was then used to do "body flossing" from the left groyne to the left wrist. Next, the currentA 6F Cook Shuttle sheath was substituted for the groyne sheath (Cook). Following angioplasty with a 6 mm balloon, an 8 mm 15 cm stent graft (Viabahn, Gore Medical) was implanted with 3–4 cm of overlap into the native arteries on each side. There was now in-line flow with no extravasation. The radial artery showed signs of thrombosis or spasm, but there was still blood flow to the hand via the ulnar artery. a tool for compressing the radial arteryThe left groyne sheath was left in place to serve as an arterial line, and a (TR Band, Terumo) was positioned at the radial location.The patient then had a fasciotomy in the operating room.

DISCUSSION

The axillary artery, which starts at the lateral edge of the first rib and ends in the brachial artery at the inferior border of the teres major muscle, arises from the subclavian artery. Subscapular and circumflex humeral arteries are among the numerous collateral vessels that supply the shoulder and upper extremities.

5% of all significant arterial injuries are axillary artery injuries, and most of these are penetrating in character.[2] 5-8% of cases of axillary artery damage include blunt trauma. [3,4] The "typical" signs of damage can include those of acute limb ischemia, but due to the abundant collateral supply surrounding the shoulder, these symptoms may not always be present.Complications in the exposure and repair of the axillary artery during complex surgery are linked to high rates of morbidity and mortality. [5] Surgical methods include thoracotomy, median sternotomy, supraclavicular, and infraclavicular approaches. [6] The requirement for considerable dissection makes it challenging to obtain proximal and distal control, though. Endovascular techniques are a compelling option when possible in our particular case report because the patient's weight and coagulopathy would have brought further complexity in an unstable patient. Endovascular therapy has already been mentioned as a potential substitute in that situation for treating pseudoaneurysms with stent grafts. The potential use of stent grafts in the periphery is expanded by our instance.Although there is evidence to support their usage, the long-term viability of covered stents in the axillary artery is uncertain. Endovascular therapy of peripheral vascular injuries has been shown to have follow-up patency rates as high as 84.4%.[9] The method described in this case report is not without risk, but it may be used as a stopgap measure in patients who are at high surgical risk or in whom long-term patency is not the main issue.

CONCLUSION

In patients who are at high risk for surgical intervention, endovascular therapy of axillary artery transection brought on by blunt damage should be taken into consideration. However, there is little information available on the usage of grafts in these situations and their rates of long-term effectiveness. In this instance, a potential substitute for surgical examination of peripheral vascular damage is discussed.

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