“Managing Axillary Artery Injuries—the Present Perspective”

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Dear Editor,

Injury to the subclavian and axillary arteries is uncommon. Exposure of these vessels is associated with significant morbidity, and mortality ranges from 5 to 30 %. It is a very intriguing area of interest as traumatic lesions of the axillary artery are relatively rare and are only 15–20 % of all axillary arterial injuries of the upper limbs. Majority, i.e., 90 % of the traumatic cases follow penetrating trauma to the shoulder with only 6 % being due to blunt injuries secondary to shoulder fracture dislocations including cases after reduction [1]. Proximal and distal control of the injured vessel is not always easy and involves extensive dissection. Standard surgical exposure techniques involve extensive dissections, including a combination of supra-clavicular or infra-clavicular incisions, median sternotomy, and thoracotomy causing significant morbidity and mortality rates.

Exploration of the axillary artery is technically demanding because of the anatomical position of the vessel and the propensity for concomitant injuries. As a result, postoperative morbidity is significant. Endovascular techniques may offer an alternative to these surgically demanding procedures. It offers an alternative by averting direct dissection in the zone of injury and result in shorter operative time and less blood loss and decreasing the risk for injuring important adjacent structures such as the vagus nerve, recurrent laryngeal nerve, and phrenic nerve, and the innominate vein [2]. It can be done

via a trans-brachial or a trans-femoral approach. A complete trans-brachial approach is better and has many advantages. It allows a more precise placement of the most critical proximal position of the endo-graft and thus prevents inadvertent covering of the vertebral or internal mammary arteries [2]. Careful patient selection is necessary, and only focal lesions that can safely be traversed with a guide wire can be approached in this fashion.

Literature also suggests the use of basilic vein graft for axillary artery tears, and I strongly agree with the authors when they state that the basilic vein can be harvested from the same incision for fracture reduction giving a better cosmetic result, and the whole procedure can be performed under regional anesthesia [3]. But the long-term viability of the basilic vein raises some concerns. Being a vein, it is at a risk of developing thrombosis and aneurysms in the future, questioning its long-term prognosis. Some may even argue over the propulsive power and the tendency to stagnate a vein graft while managing an arterial tear.

In my opinion, the endovascular approach is equally quick and avoids wide dissection by a vascular access at a site remote from the primary injury. It can be a viable option for patients with decreased life expectancy when long-term patency is not a primary concern. Also, patients who are poor candidates for general anesthesia can undergo an endovascular approach with intravenous sedation and local anesthesia [2]. Unfortunately, the long-term outcomes of endovascular repair of axillary artery tears remain unknown. However, it is a viable option and should definitely be considered to reduce postoperative mortality and morbidity.

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Conflict of Interest The author declares that he has no competing interests.

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