A Rare Complication after Blood Donation: Brachial Artery Pseudoaneurysm

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Abstract

Pseudoaneurysm of brachial artery following whole blood donation is a very rare complication due to inadvertent arterial puncture. There are only a few cases reported in literature. Here, we describe this rare event in a young male whole blood donor presenting 2 months after blood donation with pulsatile swelling in the right antecubital fossa and paresthesia of hand. He was successfully managed with surgical intervention.

Keywords: Blood donation, brachial artery, complication, pseudoaneurysm

INTRODUCTION

Minor complications such as bruise and local pain can occur after whole blood donation. Inadvertent arterial puncture during whole blood donation is very rare and can lead to serious complications such as arterial pseudoaneurysm, arteriovenous fistula, and compartment syndrome. There are three reported cases of brachial artery pseudoaneurysm[1-3] and only one case of brachial artery true aneurysm[4] due to arterial puncture during blood donation. Here, we discuss this rare event during blood donation and its preventive measures.

CASE REPORT

A 20-year-old male presented with a history of progressively increasing swelling in the right antecubital fossa of 2 months duration. It was associated with tingling sensation in hand and constant aching pain aggravated by movement of elbow joint. He gives a history of blood donation 2 months back following which he developed bruise and swelling which was managed conservatively with local compression; however, it progressively increased in size. It was his first blood donation. On examination, there was 6 cm × 6 cm tense pulsatile swelling in the medial aspect of the right antecubital fossa [Figure 1a]. Duplex examination showed large hematoma with Ying–Yang flow in central zone arising from brachial artery suggestive of pseudoaneurysm [Figure 1b]. Ultrasound-guided compression was attempted; however, it was unsuccessful. Surgical repair was planned, as hematoma was large and tense causing pain and paresthesia due to local nerve compression. He was operated under local anesthesia with 1% lignocaine. Proximally brachial artery was dissected, and control was taken with arterial sling after heparinization. Horizontal incision was made over the swelling in antecubital fossa and deep fascia (bicipital aponeurosis) was incised, releasing the tense hematoma lying below it [Figure 2a]. After the evacuation of hematoma, a 2 mm hole in brachial artery above the bifurcation was visualized [Figure 2b], there was no other superficial artery, and course of brachial artery was normal. The hole was repaired primarily by oversewing with 6.0 polypropylene suture [Figure 3]. Postoperatively, his pain and paresthesia subsided and is on regular follow-up without any complaints.

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DISCUSSION

Arm complications after whole blood donation occur in 30% of the donors. Most commonly, it occurs as a minor complication in the form of simple contusion or hematoma (23%) and arm pain (10%); however, major complications can occur due to inadvertent arterial puncture (pseudoaneurysm, arteriovenous fistula, and compartment syndrome) and nerve injury. The reported incidence of arterial puncture during whole blood donation is around 0.014%, more commonly in men and first-time donor.[5] Almost one-third of the arterial puncture results in hematoma formation. However, pseudoaneurysm develops only in 0.1%–0.4% of all arterial punctures following blood donation.[1,6]

Arterial puncture should be suspected whenever there is shorter blood collection time of <3 min, collection of bright red blood, pulsating needle or tubing system, difficult venipuncture or manipulation of needle, and development of large hematoma after donation. In our case, the patient gives a history of blood collection in shorter time than other donors of the day; however, he could not recall the color of blood and manipulation of needle. Once arterial puncture is suspected needle should be removed, and firm pressure should be applied for 10 min followed by bandage application for 5 h.[6] Before asking the donor to leave, sealing of puncture site should be ensured as most of the arterial puncture can be managed with this conservative management, thus avoiding the future pseudoaneurysm.

Complications due to arterial puncture should be minimized in this noble cause, as it can demotivate the donor for future blood donation. This can be prevented by venipuncture by experienced phlebotomist, use of lateral veins, minimizing needle manipulation and discontinuation of the process, and application of local compression once arterial puncture is suspected. Routine follow-up of donor is advised in suspected arterial puncture for early detection and treatment of complication.

CONCLUSION

Arterial puncture during whole blood donation is rare and brachial artery pseudoaneurysm is even rarer. This can be further minimized by extra vigilance and ensuring immediate measures to seal the puncture site in case of inadvertent arterial puncture.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Popovsky MA, McCarthy S, Hawkins RE. Pseudoaneurysm of the brachial artery: A rare complication of blood donation. Transfusion 1994;34:253-4.
2. Kumar S, Agnihotri SK, Khanna SK. Brachial artery pseudoaneurysm following blood donation. Transfusion 1995;35:791.
3. Newman B, Popovsky M. Pseudoaneurysm after blood donation. Transfusion 1994;34:935.
4. Bhatti K, Ali S, Shamugan SK, Ward AS. True brachial artery aneurysm following blood donation: A case report of a rare complication. EJVES Extra 2007;13:44-6.
5. Newman B. Arm complications after manual whole blood donation and their impact. Transfus Med Rev 2013;27:44-9.
6. Newman BH. Arterial puncture phlebotomy in whole-blood donors. Transfusion 2001;41:1390-2.