Case Report

PSEUDOANEURYSM OF BRACHIAL ARTERY: CASE REPORT OF A RARE CASE

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ABSTRACT:

Brachial artery Pseudo-aneurysm is a rare entity, only very few cases are reported in literature at present while most of them are due to a known cause. A patient was referred to our department of Diagnostic Radiology MTH, who was having no medical or any surgical treatment to his upper limb, so primary spontaneous brachial artery pseudoaneurysm was diagnosed and patient was treated surgically without any complications.

ABBREVIATIONS:

PSA(pseudoaneurysm)

MTH (Madina Teaching Hospital)

INTRODUCTION:

Pseudo-aneurysm (PSA) is actually a pulsatile hematoma, that is in this condition bleeding occurs into the soft tissue which isencapsulated by fibrous tissue and there is a persistent communication between the disrupted vessel and the surrounding hematomabut no normal arterial wall components are seen in its wall.Upper limb peripheral artery aneurysms are very rare than lower limb peripheral artery aneurysms.[1] Peripheral artery aneurysms if seen distal to the upper extremity,especially at the level of brachial artery,most of time lead to thromboembolic complications of the hand andfingers[2].

In one study PSA of the upper limb accounted for about 27% of all the PSA recorded in the Vietnam vascular registry[3]. While In neonates, PSA occurs only at a rate of about 0.05 after diagnostic investigations and up to 1.2 after more complex intervention catheterization procedures[4]. Uptil now almost all the cases of brachial artery PSA was with an underlying cause or risk factor but in our patient there was no cause so this is the rare case report of spontaneous primary PSA of brachial artery in adult patient[5].

CASE REPORT:

A 45-year-old female patient, house wife presented to medical OPD MTH with complaints of painless swelling on the medial side of his rightarm from 14 years, according to the patient the swelling was slowly progressive in nature without any sing or prominent vein and symptoms but now for the last few weeks she start having dull pain in her right hand. On examination by medical personnel it was not causing any functional impairment in right upper limb, the patient give no history of any numbness, tingling sensation, wasting or color changes in the forearm and hand, especially there was no history of trauma to the arm, any instrumentation or intervention (e.g. any

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venopuncture, angiography, dialysis, intervention or drug abuse) also there was no history of any surgery in the right upper limb.

On Examination an ovoid swelling 4×4 cm on the medial aspect of the right arm was seen with no discoloration, any visible pulsation, or prominent veins, no scar mark was there. No Axillary or supraclavicular lymph nodes were palpable. And On auscultation no bruit was audible over the swelling

The patient was sent to radiology department MTH for Sonographic evaluation so on Grayscale ultrasound there was a heterogeneous rounded mass with hypo-echoic eccentric area (Fig. 1A) compressing the brachial artery and a thick rim of peripheral calcification also noted which was confirmed on digital radiograph of the area.

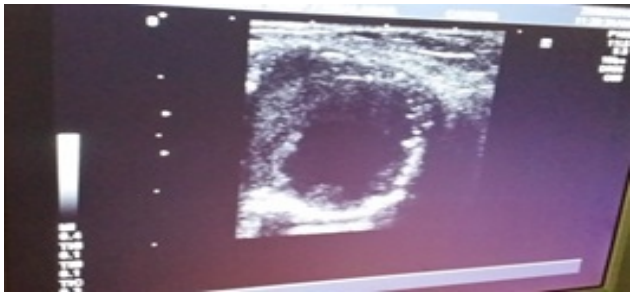


Fig. 1A

On Color Doppler ultrasound swirling color flow (yin yang sign) was seen in the anechoic segment (Fig. 1B), thrombosis in rest of the lesion making target sign.

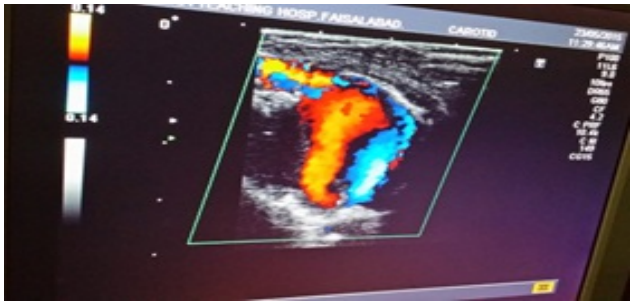
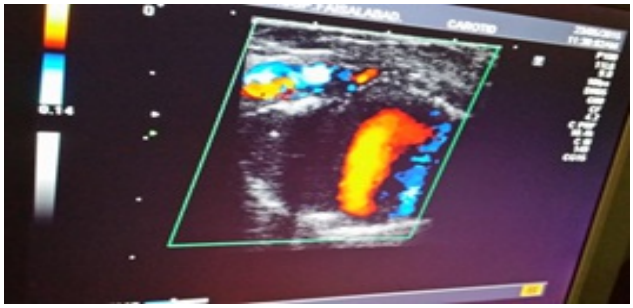


Fig. 1B

Color flow was within the tract between the artery and the mass making the diagnosis of PSA neck while spectral Doppler analysis showed the characteristic to and fro flow pattern within the track confirming the diagnosis of PSA.



For publication of this case patient consent was taken.

DISCUSSION:

Anatomically brachial artery is superficial and has covering of skin and superficial and deep fascia. The median nerve crosses in front (while rarely behind) of the brachial artery[6].

Upper limb peripheral artery aneurysms mostly involve the subclavian artery, followed by the axillary, brachial, ulnar and radial arteries, respectively[7]. The prevalence of brachial artery aneurysms has been reported as 0.5%, and the cause is generally a result of trauma and iatrogenic invasive procedures. Nowadays the cause of higher prevalence of pseudoaneurysm is related to the high number of invasive procedures related to cardiac catheterization[8].

Most common Risk factors for PSA include bony fracture, dislocation, orthopaedic implants, angiographies, blood disorders, certain drugs, penetrating trauma and blunt trauma. Other important causes also includecertain infections, inflammation (vasculitis, pancreatitis), collagen disorders, drug abuse, and surgicalfailures. The natural history of PSA includes spontaneous resolution, expansion, rupture or thrombosis[9].

The certain Differential diagnosis of brachial artery PSA includes pulsating tumors (sarcomas, osteoblastoma), arteriovenous malformation, lipomas, and inflammatory conditions like abscess, lymphadenopathy and hematoma[10]; but radiologically colour Doppler ultrasound has characteristicswirling appearance with a sensitivity and specificity of 100% in differentiating PSA from peripheral hematoma so this is the imaging method of choice making non-invasive evaluation of such masses[11]

If left untreated Complications associated with PSA include inflammations,compartment syndrome, thromboembolic complications in hands and fingers and erosions of skin and bone.[3] In some conditions the potential sequale of missed or delayed diagnosis of PSA includes rupture of the aneurysm with hemorrhage, also nerve compression which causes possible permanent neuropraxia. Treatment choices include primary surgical repair and interposition vein[5]. But care must be taken not to injure the nerves and veins adjacent to PSA or scar tissue during surgical procedure (twelve), Other alternative approaches include ultrasound-guided compression obliteration, to produce instant thrombosis percutaneous injection of thrombin may also be used and endovascular procedures which include exclusion of PSA by covered stent and embolization with detachable ballons and coils (thirteen)if treatment is delayed, it can cause hemorrhage, venous edema, cutaneous erosion, and adjacent neurological structure compression.

CONCLUSION:

In conclusion, true brachial artery aneurysm is a very rarely encountered disorder in infants. This is one of few cases of spontaneous primary brachial artery PSA in an adult patient who was not diagnosed for 14 years. Surgical intervention is required due to potential neurologic and extremity ischemic symptoms. The ideal procedure is the provision of arterial maintenance through primary repair.

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