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Idiopathic True Aneurysm of Radial Artery - A Case Report (Follow Up of 15 Years)

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Abstract: ***True aneurysms of radial artery are extremely rare. Most cases of radial artery aneurism are the result of iatrogenictrauma or associated disease like connective tissue disorder. In this case there was no history of trauma nor presence of any systemic disorder. He underwent excision of aneurysm followed by reconstruction with reverse vein graft. Patient was followed up for 15 years.***

1. Introduction

An aneurysm is a local and permanent arterial dilatation with 50% greater diameter than the normal artery. The upper limbs are considered less vulnerable to arterial diseases especially those of aneurysm tic nature. Due to their low incidence, such aneurysms are diagnostic and therapeutic challenges.

Radial artery aneurysms are mostly pseudo aneurysms associated with iatrogenic conditions resulting from invasive procedures, blunt traumas related to fractures with vascular injury or penetrating trauma.

In contrast the main cause of true aneurysms in arteries of the upper limb specially the radial artery,is repeated blunt trauma which is followed by idiopathic causes, atherosclerosis, metabolic or congenital diseases, associated with disorders such as neurofibroma and vasculitis such as Buerger's disease, Kawasaki disease, Bachet's disease and polyarthritis nodosa. Aneurysms formation have also been reported associated with arteriovenous fistulas created for hemodialysis, post- stenotic dilatation

The purpose of this study is to present a case report of 40 years male patient with true idiopathic radial artery aneurysm.

2. Case Report

A 40 years male healthy patient presented with swelling of left forearm,progressively increasing in size for 1 year. History of ischemic changes in all fingers for one week. On examination there was swelling middle 1/3 rd of the forearm radial aspect 5cm×5cm, pulsatile.

There was no history of trauma or history of invasive procedure. The diagnosis of vasculitis or metabolic diseases was ruled out based on clinical and laboratory exams.

On Doppler studies there was evidence of aneurysm in relation to left radial artery. It was 5cm distal to the bifurcation of the brachial artery. Aneurysm was thick walled and had clots. Ulnar artery, palmer arches were normal. Venous flow was normal.
Considering the ischemic episode,surgical intervention in the form of excision of the aneurysm and reconstruction with reverse vein graft was done .Next day his ischemic symptoms disappeared .He was followed up for 15 years and has no complains.

3. Discussion

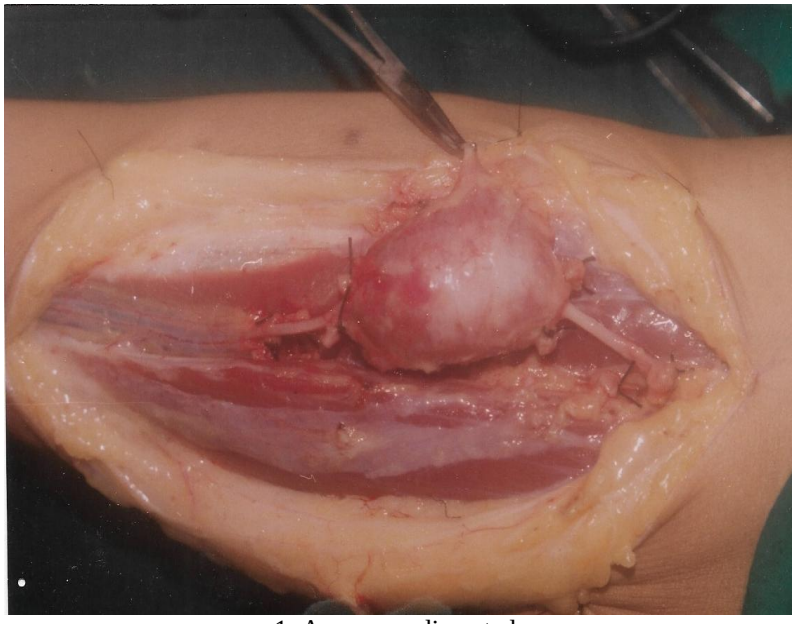
Upper extremity aneurysm are rare in surgical practice. Ogeng'o et al (1)found that the incidence of radial artery aneurysm is 2.9%of all aneurysms

According to Ho et al (2)it is rarest upper extremity aneurysm. Hassan J Shabi (3) conducted MEDLINE search till May 2013,79 cases were reported as post traumatic aneurysms. Radial artery cannulations, bone fracture, occupational injuries and traumas were the commonly reported causes. Up to 15 other cases were reported as aneurysm induced by systemic pathologies. Among all 108 cases only 8 cases were reported as idiopathic true radial artery aneurysms. An idiopathic radial aneurysm was reported by Walton (4).another case was reported by Luzzani (5) A case of repetitive occupational injury (tailor's thumb) has also been described (6).The natural history of true aneurysm in the upper limb remains unclear given their rarity(7).First description of a true non traumatic radial artery aneurysm was made by Thorrens at al (8)in 1964. A case of radial artery aneurysm in patient affected of neurofibromatosis was described by Singh (9).

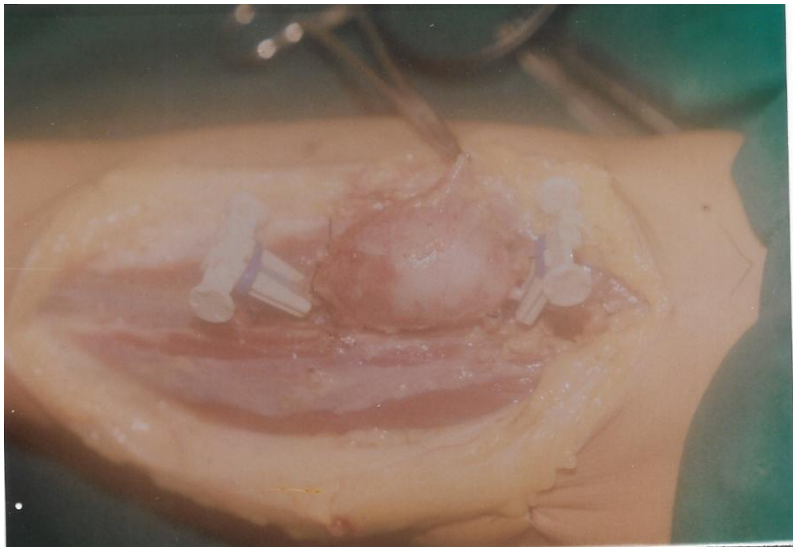
Clinically, patients usually present with pulsatile swelling with or without pain which is usually due to the compression of the surrounding structures. The aneurysm has the potential to cause ischemia due to emboli or thrombus formation. The risk of traumatic rupture depends upon the location of the aneurysm.

Care full examination and pre-operative imaging will help to determine the most appropriate management. An Allen's test will assist in determining the patency of the radial and ulnar arteries. Doppler examination may be adequate in confirming the patency of the superficial and deep palmer arches. Excision of the aneurysm and vascular reconstruction is the treatment of choice.

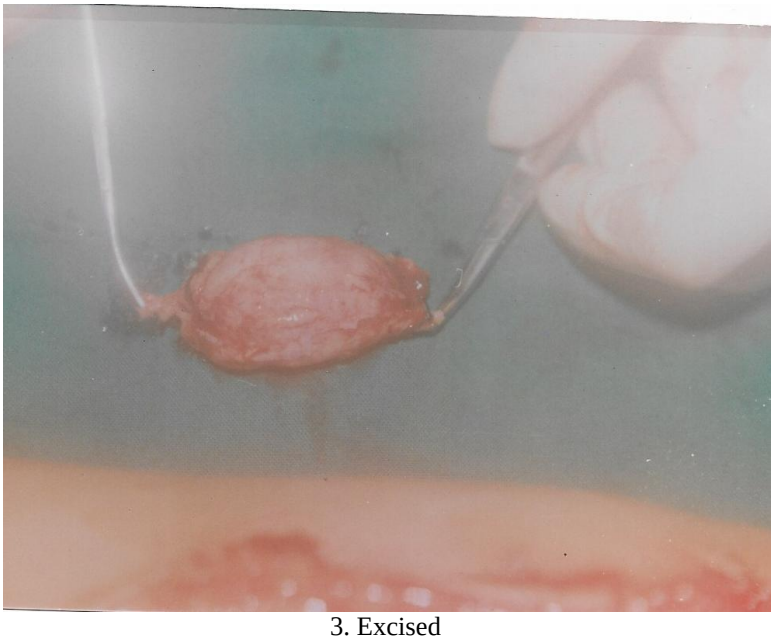
Richard Gray et al (15) did retrospective study at tertiary referral centers from 1975 to 1995 of true aneurysm distal to axillary artery, found in 12 patients out of which 2 had true radial artery aneurysm.



1. Aneurysm dissected



2. Vascular clips applied



3. Excised

4. Reverse venous graft

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