MYCOTIC BRACHIAL ARTERY ANEURYSM FOLLOWING A PERIANAL ABSCESS

Lt Col R KATOCH ^{*}, Lt Col M MAHANTACHAR ⁺,
Col HARIQBAL SINGH [#]

MJAFI 2001; 57 : 156-157

KEY WORDS : Brachial artery; Mycotic aneurysm; Perianal abscess.

Introduction

Mycotic aneurysms are extremely rare. Osler introduced the term in 1885 to describe an aortic aneurysm that resulted from bacterial endocarditis [1]. Since then the term has been given a broad definition to describe aneurysms, true or false of any artery, induced by infection of existing atherosclerotic aneurysm, traumatic injury, drug abuse or due to sepsis, local or embolic. A case of brachial artery mycotic aneurysm is presented which developed following a neglected perianal abscess. No similar case has been reported in available literature.

Case Report

A 29 year old soldier reported with a history of a painful perianal swelling and an enlarging lump in the left armpit of one month duration. He had developed a painful perianal swelling with fever and difficulty in defecation while on leave. He was treated by a local village doctor with a course of antibiotics and herbal applications. In a few days the perianal abscess burst and he was relieved. On examination he was found to have a low fistula in ano at 7'O clock lithotomy position, 3 cm from the anal verge. Proctoscopy and sigmoidoscopy were normal. He also had a 5x5 cm pulsatile lump in the left upper arm, which was not adherent to the skin and mobile transversely. The pulses in the arm were normal, blood pressure was normal at both upper arms. Haematological tests were within normal limits. The chest radiograph was normal, repeated blood culture was sterile. Widal test did not show raised titres. A Colour Doppler confirmed a brachial artery aneurysm having a clot inside with good distal flow. A diagnosis of a fistula in ano with a mycotic brachial artery aneurysm was made. He was placed on broad spectrum antibiotics and taken up for anal fistula surgery. The perianal wound healed in 4 weeks time, histopathology of the fistula was unremarkable and did not show any evidence suggesting tuberculosis. He was then subjected to surgical treatment for mycotic aneurysm. A linear incision was made along the brachial artery, proximal and distal control of the artery was achieved. The aneurysm was not adherent to the surrounding tissues or adjacent vein (Fig-1). The aneurysm along with a 1 cm healthy segment of the artery on either side was excised and a reversed 5 cm graft of the Great Saphenous vein was anastomosed to restore vascular continuity (Fig-2). The

recovery was uneventful with bounding arm pulses and normal joint movements. He has been observed for over three years with no ill effect. Grossly the excised specimen of the brachial artery aneurysm measured 4x2 cm; cut surface was greyish white (Fig-3). The microscopic sections from the tissue show evidence of thickening of vessel wall with increase in fibrovascular stroma. There is evidence of oedema with haemorrhage; moderate degree of inflammatory exudate is seen in the vessel wall consisting of predominantly mononuclear cells with a few plasma cells, eosinophils and neutrophils. There is no evidence of granuloma. With these findings a diagnosis of mycotic aneurysm of brachial artery was made.

Discussion

The pathophysiology of arterial infection has been categorised as one due to bacteria induced arteritis in a preexisting arterial lesion or a graft, trauma induced, infection from contiguous spread or infected emboli [2,3]. Before the antibiotic era, the association between bacterial endocarditis and mycotic aneurysms was known and earlier reports implicated organisms like Staphylococci, Streptococci and Pneumococci and most of the cases were fatal [4]. Since 1965 with the advent of antibiotics the microbiology and aetiology has changed, arterial trauma is the prime cause and the common pathogens are Staphylococci, Salmonella species and gram negative species which have an affinity for invasion with arterial damage [2,5]. Mycotic aneurysms have been known to involve almost any artery and occasionally multiple vessels. The aorta, visceral, and extremity vessels account for 27%, 24% and 26% respectively in a total of all major studies combined [5]. The brachial artery is involved in about 4% of cases. The cause for mycotic aneurysm remains unknown in 25%, while bacteraemia has been reported in 5% cases [5]. Mycotic aneurysm in IV drug pushers has been reported widely and the main organism isolated has been Staphylococci and the vessels involved include the femoral, brachial, axillary and subclavian arteries [6,7,8]. Mycotic aneurysm of

^{*} Reader in Surgery and Classified Specialist (Vascular Surg), Armed Forces Medical College ⁺ Classified Specialist (Pathology), Military Hospital, Kirkee [#] Senior Adviser (Radiology), Command Hospital (Southern Command), Pune - 411 040.

Fig 1 : Operative photograph showing the brachial artery aneurysm with proximal and distal vessel control.

Fig 2 : Reversed long saphenous vein graft anastomosed for vascular continuity.

cardio-embolic origin is most common in the abdominal aorta, femoral and superior mesenteric artery [9]. Infected peripheral artery aneurysm may present with systemic signs of fever, malaise and pain. In our case except pain there were no systemic signs. Laboratory data are not particularly useful, leucocytosis above 10,000/cmm may be seen and blood cultures are positive in 50% cases preoperatively and 56-94% intraoperatively [4]. Colour Doppler and angiography is useful for diagnosis and planning reconstructive surgery. The incidence of rupture is higher than ordinary aneurysm. The risk of thrombosis and distal ischaemia exists. The management protocol demands specific antibiotic therapy prior to surgery. The surgical treatment requires excision of all septic tissue and extra-

Fig 3 : Aneurysm cut open, a probe passed through the lumen.

anatomic arterial reconstruction in severely infected cases. In the absence of local infection and lack of friable vessel, autogenous reconstruction is a useful option with good results [7,10].

References

1. Osler W and Gulstonian N. Lectures on malignant endocarditis. *BMJ*. 1985;1:467.
2. Gelabert HA. Primary arterial infections and antibiotic prophylaxis. In Moore WS, Ed, and Vascular Surgery : A comprehensive review. 5th ed, Philadelphia:WB Saunders, 1998;168-89.
3. Blum L and Keefar EB. Clinical entity of cryptogenic mycotic aneurysm. *JAMA* 1964;188:505.
4. Millis JM, Brown SL and Busutil RW. Thoracic and abdominal aneurysms. In Bell PRF, Jamieson CW, Ruckley CV, editors : Surgical management of vascular disease 1st ed. Philadelphia : WB Saunders, 1992;819-27.
5. Brown SL, Busutil RW, Baker JP et al. Bacteriologic and surgical determinants of survival in-patients with mycotic aneurysms. *J Vase Surg* 1985;1;541.
6. Johnson JR, Ledgerwood AM and Lucas CE. Mycotic aneurysm : New concepts in therapy. *Arch Sur* 1983'118:577-82.
7. Jhirad R and Kalman PG. Mycotic axillary artery aneurysm. *J Vase Surg* 1998;8:708-9.
8. Miller CM, Sasgivolo P, Scazer H et al. Infected false aneurysm of the subclavian artery : A complication in drug addicts. *J Vase Surg* 1984;1:684-8.
9. Flanigan DP. Aneurysms of the peripheral arteries. In Moore WS, Ed, and Vascular Surgery : A comprehensive review. 5th ed. Philadelphia, WB Saunders 1998;457-67.
10. Hegenscheid M, Alveizacos Pand Hepp W. Autogenous reconstruction in mycotic Inguinal aneurysm, long term results. *Orthopadische Klinik eund Polklinik, Osker-Helene-Heim. (Switzerland)* 1994;23(2):159-62.