

## EXPERIENCE OF TREATING MYCOTIC ANEURYSM OF FEMORAL ARTERY AT FOUNDATION UNIVERSITY MEDICAL COLLEGE HOSPITAL, RAWALPINDI

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### INTRODUCTION

The term Mycotic Aneurysm was used by Osler in 1885, for the first time [1] for aneurysms caused by septic emboli. Mycotic Aneurysms are potentially life threatening with mortality up to 67% [2]. The reported incidence of the often fatal mycotic aneurysm rupture ranges from 10% for those infected with gram positive organisms to 83% for those with gram negative organism [2]. Rupture of the mycotic aneurysm may occur within one week from the Initial sepsis [2].

Mycotic aneurysm can occur anywhere, but the most common location is the femoral artery. It is formed secondary to localized infection, which is often the result of direct injury and may follow intravascular drug abuse [4]. Abdali H has given 32.75% incidence of mycotic aneurysm in intravascular drug users [3].

Prompt and accurate diagnosis is essential for proper management. Duplex ultrasonography is the preferred diagnostic modality in groin. The principle of treatment is surgical ligation and excision of mycotic aneurysm with femoral by pass.

We report our experience with two patients suffering from mycotic aneurysm of femoral artery who were drug addicts for more than twenty years. In both patients the diagnosis was missed initially and presented with massive bleeding wound.

### CASE-1

A forty eight years old male, who was a known drug addict presented with pain and large swelling in the right groin and patches

of discoloration over the right leg for three weeks. Patient presented with above complaints to a private medical center and underwent thrombectomy of femoral vein. Post operatively pain, and swelling increased causing pressure necrosis of the overlying skin. The wound started oozing. With worsening pain and discoloration of right leg, patient was referred for vascular intervention. The limb was in critical ischemia.

Diagnosis of bleeding mycotic aneurysm was made and emergency by pass surgery was done with 8mm PTFE vascular graft between external iliac artery and right femoral artery in mid thigh. The proximal and distal ends of aneurysm were ligated to control the bleeding. Intervening segment was literally absent. Groin wound was covered with myocutaneous flap of tensor fascia lata. Empiric antibiotic coverage was provided. The necrotic tissue was sent for culture and sensitivity, which revealed polymicrobial infection; organisms included Klebsiella, Escherichia and Staph. aureus. Antibiotics were administered according to culture sensitivity report, which included Piperacillin, Ciprofloxacin, Imipenem and Amikacin.

On fifth day, there was bleeding from the proximal anastomosis. The graft was explored and proximal anastomosis was refashioned. The graft was covered with local muscle and skin flap. At no stage there was frank pus formation.

After three weeks there was recurrence of bleeding. Probably due to graft failure secondary to infection. Autologous graft of left long saphenous vein was not available. This time 10 mm Dacron vascular graft was anastomosed with origin of right External

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iliac artery and brought into thigh by making a tunnel just medial to anterior superior iliac spine through quadriceps muscle and anastomosed with healthy right femoral artery just above the adductor hiatus. Wound was left open in the femoral triangle for secondary healing. Antibiotics were advised according to culture sensitivity. Wound healed in three weeks with no further complications. Limb was saved with excellent palpable dorsalis pedis artery.

## CASE-2

Forty one years old male, who was a known drug addict presented with severe pain left leg 10 days and painful swelling in left groin seven days duration respectively. Patient had been injecting drugs in his left femoral vessels for many years. Patient was operated in some private medical facility for groin abscess and resulted in massive hemorrhage and requiring multiple transfusions. He was shifted to another medical center where diagnosis of ruptured mycotic aneurysm was made and referred to Fauji Foundation Hospital for vascular intervention. On examination there was a large wound measuring 8cm x 6cm over left groin heavily packed with blood stained gauze. Limb was in critical ischemia.

After resuscitating and restoring blood volume, based on experience of case 1, extra anatomical ileo-femoral by pass was carried out using 10 mm Dacron graft. The bleeding ends of aneurysm were ligated. The intervening segment was replaced by necrotic tissue. The whole left limb was sclerosed causing difficulty in identifying the structures. Femoral artery was identified by passing catheter through ruptured femoral artery. External iliac artery was exposed through separate incision in abdomen. Ten mm Dacron graft was anastomosed with left external iliac artery and brought into thigh by making a tunnel just medial to anterior superior iliac spine through quadriceps muscle and anastomosed with healthy femoral artery just above the adductor hiatus. Wound swab for culture was taken, which

revealed polymicrobial infection as in case-1. Antibiotics were administered according to culture sensitivity report. Wound was left open in the femoral triangle for secondary healing, which healed in four weeks with no further complications. At the end of operation dorsalis pedis artery was palpable. Limb was saved.

## DISCUSSION

Mycotic aneurysms are rapidly progressive, surrounded by severe inflammation. These are challenging to reconstruct. Moore and Colleagues argued that a first bypass should be done with a synthetic graft so that the great saphenous vein autograft could be preserved for potential later use, like coronary artery bypass and secondary operation for lower limb ischemia [6].

The conduits of choice are autologous veins like long saphenous veins. Where no autologous conduit can be used, homografts may be considered. Graft is covered with muscle flaps. Patients are placed on long term antibiotic therapy [4,5].

In the past the basic principle of management was to avoid the infected area and route the conduits through extra anatomical planes such as, lateral thigh or transobturator for femoral infections.

More recently, several authors have shown that in situ reconstruction followed by aggressive debridement and wound care can have good results [4]. We tried in-situ reconstruction, but this method failed.

Callaert and colleagues have suggested stent-graft exclusion of a mycotic aneurysm of the superficial femoral artery with long-term antibiotics as an alternative to traditional surgery in selected cases of mycotic aneurysm [7]. This high tech modality was not feasible for patient with ruptured mycotic aneurysm.

In patients with mycotic aneurysm secondary to intravascular drug abuse, autologous graft is rarity. We dissected the opposite leg of case number one and the vein

was thin, fibrosed and useless. Therefore we used Dacron graft extra anatomically where the graft was protected in non-infected area.

Pursell and colleagues have described that success of any bypass graft depends on patency, limb salvage and long-term survival. The same with ideal result is further defined by characteristics of uncomplicated operation, primary wound healing, relief of symptoms without recurrence and need for further intervention [8].

This policy of using extra anatomic prosthetic graft fulfills the criteria of excellent outcome.

## CONCLUSION AND RECOMMENDATIONS

We have learnt in these two cases, in order to save life and limb of patient- extra anatomic approach medial to anterior superior iliac spine with prosthetic graft is safe, time saving, economical and with good results.

Groin abscess in drug addicts should not be submitted to incision drainage in casual manner. Treating physician should follow the golden principle of needle localization followed by incision drainage.

Patients of mycotic aneurysms should be referred to tertiary care hospital where such surgery is being done.

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