

TYPE II PRIMARY FEMORAL ARTERY ANEURYSM: A case report Tip II primer femoral arter anevrizması: Bir olgu sunumu

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Abstract: The femoral artery aneurysm (FA) is the second most common peripheral aneurysm incidence about one-third of all peripheral aneurysms. Bilateral aneurysms are found in more than 50 percent of patients with FAs and associated aneurysms are common. Complications such as thromboembolism greatly increase the rate of amputation of FAs; therefore, elective repair before complications develop is the choice of treatment for FAs. In our department we surgically treated an old patient with type II primary femoral aneurysm. The patient was asymptomatic. The diagnosis of aneurysm, fusiform in shape, was made by palpation along the course of the femoral artery axis. Angiography was performed to document the extent of the aneurysmal disease and to evaluate distal runoff. The procedure was resection of the aneurysm, vascular replacement with a PTFE graft, and preservation as many collateral branches as possible. Since type II aneurysm was present, the profunda femoris artery was transected and re-anastomosed into the graft, which was implanted into the superficial femoral artery. There was no complication. Both short -and long- term surgical results are generally excellent for FA repair as long as reconstruction is performed before symptoms or complications arise. The key to good long- term results is the continued patency of the profunda femoris artery.

Key Words: Femoral artery aneurysm, Primary, Surgery

Özet: Femoral arter anevrizması (FA) ikinci en sık periferik anevrizmadır. Sıklığı tüm periferik anevrizmaların yaklaşık üçte biridir. Bilateral anevrizmalar femoral anevrizmalı hastaların yüzde ellisinden daha azında rastlanır ve bu durumda eşlik eden diğer bölge anevrizmaları sıktır. Tromboembolizm gibi komplikasyonlar FA'ların amputasyon oranını büyük ölçüde artırır. Bundan dolayı komplikasyonlar gelişmeden önce elektif onarım FA'ları için seçkin tedavidir. Anabilim Dalımızda asemptomatik, Tip II FA'lı yaşlı bir erkek cerrahi olarak tedavi edildi. Fuziform biçimindeki anevrizmanın tanısı FA eksenini seyri boyunca palpasyonla yapıldı. Anjiyografi, anevrizmal hastalığın derecesini belgelemek ve distal akımı değerlendirmek için yapıldı. Seçkin işlem anevrizmanın rezeksiyonu, PTFE greftle vasküler replasman ve olabildiğince çok kollateral dalın korunmasıydı. Tip II Anevrizmanın varlığından dolayı profunda femoris arter, superfisiyal femoral artere implante olan grefte re-anastomoz edildi. Komplikasyon yoktu. Semptomlar ya da komplikasyonlar oluşmadan önce yapılan rekonstrüksiyonun uzunluğu kadar FA onarımı için yapılan hem kısa hem uzun dönem cerrahi sonuçlar genellikle mükemmeldir.

Anahtar Kelimeler: Femoral arter anevrizması, Primer, Cerrahi

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The common denominator of peripheral aneurysms, which are well recognized with increasing frequency of the extended life span for older age-group patients is underlying mural

weakness, induced by arteriosclerotic, mycotic, traumatic or dissecting lesions, or vasculo-Behçet's syndrome. It behooves surgeons to detect the aneurysms before their potential serious and disabling complications such as rupture, thromboembolism, compression occur, so that reconstructive surgery can be applied electively and successfully (1,2).

Left surgically untreated, peripheral aneurysms may result in a high incidence of thromboembolism and gangrene leading to amputation (1).

CASE REPORT

A 69 year-old man with a mass in his right groin admitted to our clinic. He was asymptomatic. On physical examination, the aneurysm was palpated along the course of the right common femoral artery axis. Similarly, the aneurysmal dilatation of the femoral artery was palpated. He also had bilateral inguinal hernias. All distal arterial pulses were present. He was assessed carefully for possible coronary artery and cerebrovascular disease. Angiography was performed to document the extent of the aneurysmal disease and to evaluate distal arterial tree. Bilateral femoral angiography showed aneurysms of the common femorals (type II) (fig 1A). Distal arterial tree was patent bilaterally but exhibited diffuse arteriosclerotic appearance (fig 1B).

Under general anesthesia, the lower abdominal region, the groin, and the thigh down to the knee were prepared and draped in the usual manner. A slightly curved incision was made over the aneurysm, extending proximal and distal to it. Both the common femoral and the superficial femoral arteries were dissected from adjacent structures and taped, also the profunda femoris was dissected and taped (Fig 2 A).

The common, superficialis and profunda femoris arteries were cross-clamped and transected (Fig 2 B) A polytetrafluoroethylene (PTFE) graft, 8mm in diameter was replaced by an end-to-end anastomoses between the common femoral and

the superficialis. Then, the profunda femoris was re-anastomosed into the graft by end-to-side anastomosis (Fig 3 A and B). After three weeks, the graft and the distal arterial tree were shown to be patent angiographically (Fig 4). Histopathologic examination of the specimen susupported the arteriosclerotic nature of the aneurysm (Fig 5).

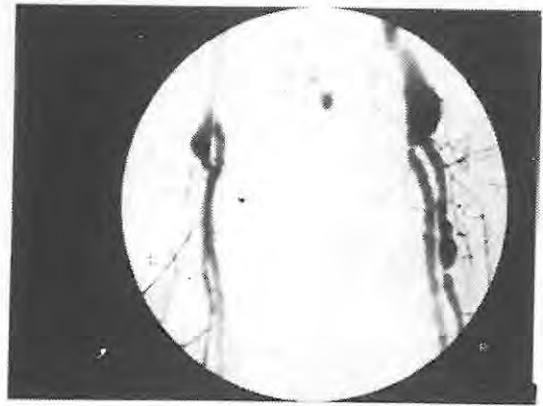


Figure 1A. Bilateral femoral arteriogram depicting aneurysms of the common femoris

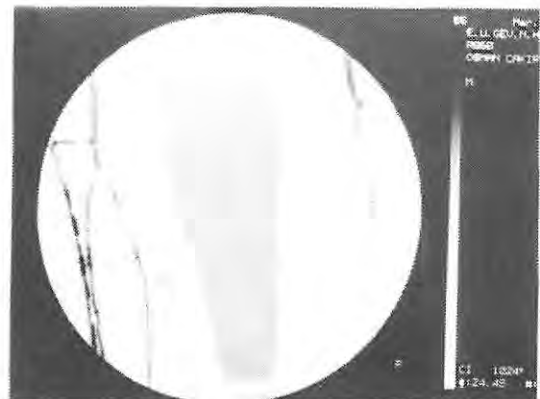


Figure 1B. The same arteriogram showing typical arteriosclerotic appearances

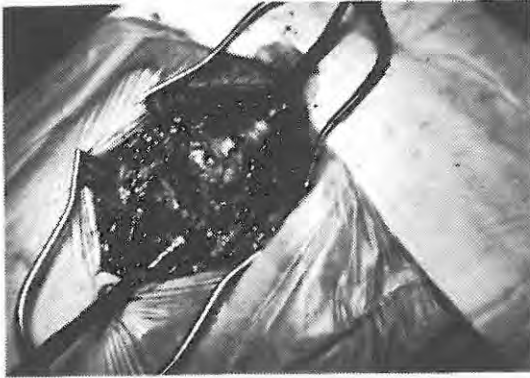


Figure 2A. Surgical exposure of the aneurysm. Notex: taped the common and superfisialis femoral vessels.

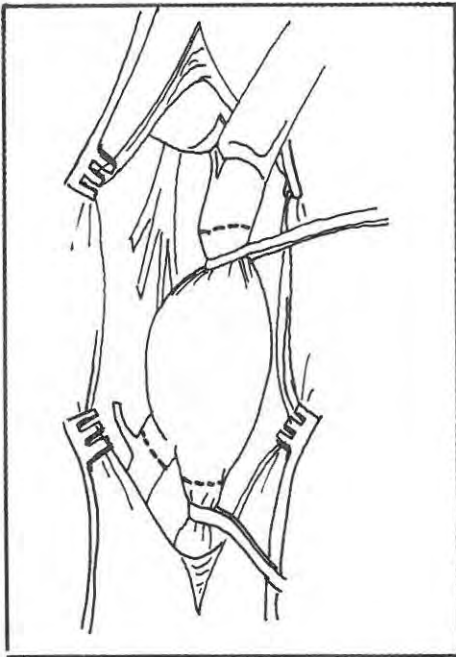


Figure 2B. Diagram illustrating an aneurysm of the common femoral artery involving the origin of the superficial and profunda femoris (Type II femoral aneurysm). Note the lines of transection of the common, superficial, and profunda vessels

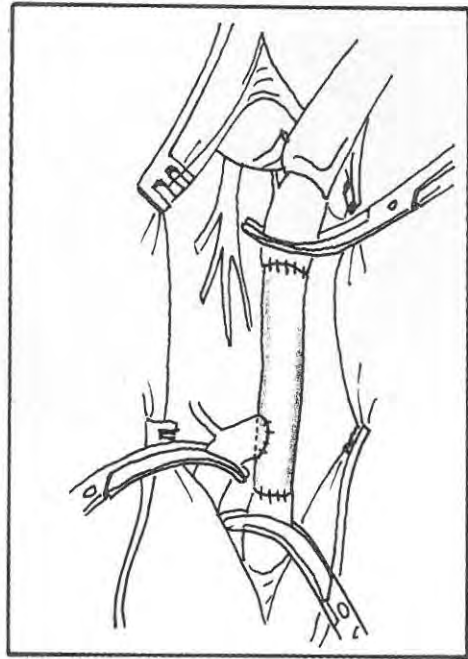


Figure 3A. Diagram depicting replacement of the aneurysm with a PTFE tubular graft and implantation of the profunda femoris into the side of the graft



Figure 3B. Surgical area after all anastomoses were completed. The arrows show the common, superficialis, and profunda femoralis artery

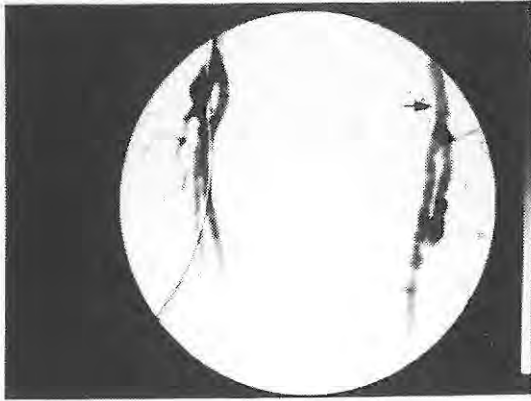


Figure 4. Control angiography shows graft and distal arterial tree (postoperative 21th day)

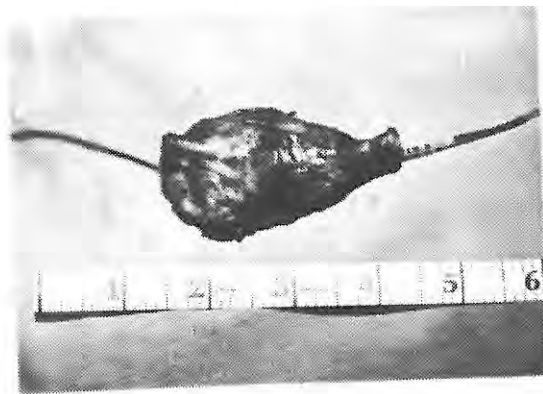


Figure 5. Specimen of the aneurysm removed during surgery

DISCUSSION

The femoral aneurysm (FA) is the second most common peripheral aneurysm (33%), the natural history of FA is very similar to that of the popliteal aneurysm in that they also tend to develop the complications such as

thrombosis, distal embolization, expansion causing venous or nerve compression, or rupture(1,2).

The clinical picture is variable ; it may be asymptomatic (33 %), may expand or rupture (33 %), acute (16 %), or chronic (16 %) thrombosis may develop (3). Associated peripheral occlusive arterial disease or co-existing occlusion of a popliteal aneurysm may further complicate the clinical picture. In our case, there was no associated peripheral occlusive arterial disease.

Diagnosis of FA is much simpler than popliteal aneurysm. The diagnosis can usually be made by palpation along the course of the femoral artery axis. B-scan ultrasound examinations, a non-invasive and painless method, has been useful in questionable cases (4). Angiography, though not usually necessary for diagnosis, should be used to document the extent of the aneurysmal disease and to evaluate distal runoff when palpation indicates that arterial flow is diminished distal to the aneurysm. The frequency of locations of FAs are as follows : common femoral (30.3%), superficial femoral (29.2%), iliofemoral (15.7%), femoropopliteal (14.6%), and profunda femoral (1.1%). FAs are bilateral in 36 to 47 per cent of the cases (3,5). FAs may be classified as Type I - the aneurysmal development terminates before the common femoral bifurcation or Type II - the dilatation involves the profunda femoris orifice. Type I and II FAs occur with approximately equal frequency (3). Aneurysm in our case was localized bilaterally in the common femoris artery (Type II aneurysm).

Because of the extremity-threatening complications, surgical reconstruction is almost always recommended when the diagnosis of FA is made. However, careful assesment of possible coronary artery and cerebrovascular disease should be made. (2). The consensus in recommending an aggressive approach in the treatment of FAs is based on the high complication rate. The surgical results in asymptomatic patients are excellent, requiring no

amputation; unfortunately the results in symptomatic patients are poor, leading to amputation (1,2).

Treatment of FAs consists of excision and graft replacement. PTFE or knitted Dacron or reversed autogenous saphenous vein grafts between 6 to 8mm diameter can be used for reconstruction (1-3). PTFE, Dacron or saphenous vein appear to work equally satisfactorily, however, we prefer to use PTFE. Occasionally, endarterectomy or thrombectomy may be used in small FAs. It is important to restore arterial flow via the profunda femoris, as extremity salvage is often dependent on this artery (1-3). In Type II FAs, the profunda femoris is transected and re-anastomosed into the graft as in our case.

If the residual artery can be adequately mobilized proximally (eg. the external iliac artery) and distally, reconstruction by simple end-to-end anastomosis can be accomplished following resection of aneurysms up to 6cm in length (2). However we did not use this method because of our patient's advanced age and other arteriosclerotic vessels.

The results of resection of the aneurysm with PTFE/Dacron or saphenous vein graft are

favourable before symptoms or complications arise (3,5). Complications of FAs greatly increase the risk of amputation. It is reported that the rate of five-year graft patency is 83 percent (3).

In conclusion, elective repair before complications develop is the choice of management for femoral aneurysm.

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