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# Surgical Treatment of an Aneurysm of the Common and Deep Femoral Arteries: A Case Report

Takashi Ogino,[1] Tamiyuki Ohbayashi,[2] Tatsuo Kaneko,[3] Yasushi Satoh,[3] Yutaka Hasegawa,[3] Tetsuya Koyano,[2] Satoshi Ohki,[2] Kazuhiro Sakata,[4] Toshiharu Yamagishi,[4] Shuichi Hagiwara,[5] Kiyohiro Ohshima,[5] Yuichi Iino,[5] Toru Takahashi,[6] Izumi Takeyoshi [6] and Yasuo Morishita [6]

A 61-year-old man with an aneurysm of the common and deep femoral arteries underwent successful vascular reconstruction. The patient presented with localized pain and a rapidly enlarging pulsatile mass in the femoral triangle. A graft was placed from the left common femoral artery to the left superficial and deep femoral arteries. No ischemic symptoms or thrombosis developed postoperatively. Successful reconstruction with a graft is rare in this situation, with less than 30 cases reported in Japan to date. This type of aneurysm is characterized by rapid enlargement and severe atherosclerotic changes. Ischemic complications may occur after surgical treatment of a ruptured deep femoral artery aneurysm. We recommend reconstruction using the saphenous vein or a vascular prosthesis, as there have been some reports of patients requiring leg amputation following ligation of the deep femoral artery. (Kitakanto Med J 2012；62：395～397)

**Key words**：deep femoral artery aneurysm, grafting, reconstruction

## Introduction

Aneurysms of the deep femoral artery are rare because of the local anatomy and the characteristics of the arterial wall. These aneurysms have a high risk of rupture and are characterized by severe atherosclerotic changes. Graft reconstruction is therefore rare, with less than 30 cases reported in Japan to date. We report a case of an aneurysm of the common and deep femoral arteries that was rapidly diagnosed and successfully treated by graft reconstruction.

## Case Report

A 61-year-old man was admitted to our hospital with a painful left inguinal mass. He had first noticed the mass 1 month previously. Physical examination revealed a pulsatile mass, 50 mm in diameter, in the left femoral triangle. Computed tomography (CT) (Fig. 1) and arteriography (Fig. 2) demonstrated a 45 mm diameter aneurysm of the left common and deep femoral arteries. As the mass had rapidly increased in size over the past month, surgical intervention was planned. The aneurysm was associated with severe atherosclerotic changes and mural thrombi of the

1 Department of Intensive Care, National Hospital Organization Takasaki General Medical Center, 36 Takamatsu-cho, Takasaki, Gunma 370-0829, Japan 2 Department of Cardiovascular Surgery, Isesaki Municipal Hospital, 12-1 Tsunatorihon-machi,Isesaki, Gunma 372-0817, Japan 3 Department of Cardiovascular Surgery, Gunma Prefectural Cardiovascular Center, 3-12 Kameizumi-machi, Maebashi, Gunma 371-0004, Japan 4 Department of Cardiovascular Surgery, National Hospital Organization Takasaki General Medical Center, 36 Takamatsu-cho, Takasaki, Gunma 370-0829, Japan 5 Department of Emergency Medicine, Gunma University Graduate School of Medicine, 3-39-22 Showa-machi, Maebashi, Gunma 371-8511, Japan 6 Department of Thoracic and Visceral Organ Surgery, Gunma University Graduate School of Medicine, 3-39-22 Showa-machi, Maebashi, Gunma 371-8511, Japan
Received: June 14, 2012
Address: TAKASHI OGINO Department of Intensive Care, National Hospital Organization Takasaki General Medical Center, 36 Takamatsu-cho, Takasaki, Gunma 370-0829, Japan

common and deep femoral arteries (Fig. 3a). Surgical repair was performed by placing a UBE ( 8 mm) graft from the common femoral artery to the superficial and deep femoral arteries (Fig. 3b). The patient's postoperative course was uneventful.

## Discussion

Aneurysms of the deep femoral artery are rare, accounting for only 0.5% of all peripheral artery aneurysms, and 1%–2.6% of femoral artery aneurysms.[1,2] Less than 30 cases of deep femoral artery aneurysm have been reported in Japan to date.[3–5] The low incidence of this condition is primarily due to the local anatomical characteristics. The surrounding muscles, including the pectineus, vastus medialis, adductor brevis, adductor longus, and adductor magnus have relatively few elastic fibers. Most patients with an aneurysm of the deep femoral artery have few symptoms until it expands, and once this happens, rapid enlargement is noted.

All the patients in previous reports were male, with a mean age of over 60 years. Aneurysms of the deep femoral artery are frequently associated with atherosclerotic changes. Local pressure from the aneurysm can cause compression of adjacent nerves and veins, and thrombosis with pulmonary embolism.[6] Acute expansion can result in femoral nerve neuropathy, venous occlusion, or acute lower limb ischemia secondary to thrombosis or embolization.[7,8]

Ultrasonography (US), CT and arteriography are all extremely useful for establishing the diagnosis. Imaging using multi-detector CT and arteriography is recommended to avoid missing other aneurysms or occlusive arterial lesions, even in a case of aneurysm rupture.[9,10]

Grafting of aneurysms of the deep femoral artery is difficult because of the rapid growth and severe atherosclerotic changes. Most reported cases in Japan which underwent grafting had good outcomes. Various surgical treatments including excision of the aneurysm with ligation of the deep femoral artery or graft reconstruction have been reported. In some cases in which the deep femoral artery was not reconstructed, the patient subsequently required leg amputation.[1] Aneurysm excision with ligation of the deep femoral artery may be unavoidable in patients with rupture and uncontrollable bleeding. For this reason, prompt diagnosis and treatment is very important.

In some previously reported cases in Japan, patients developed ischemic changes below the level of the popliteal artery after ligation of the deep femoral artery. Graft reconstruction may be necessary to prevent ischemia, because this condition usually occurs in elderly patients with atherosclerotic lesions of the peripheral arteries.

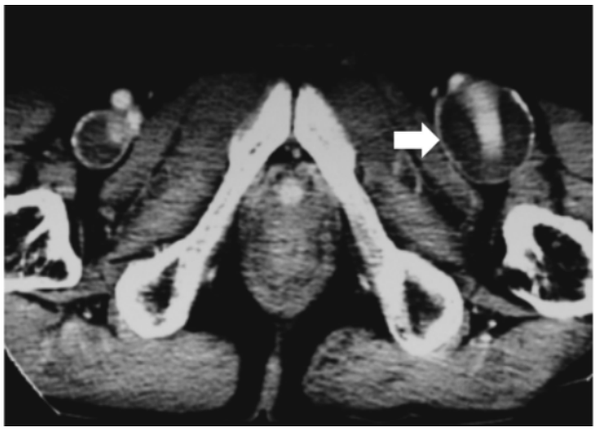

**Fig. 1** Preoperative CT scan
CT scan demonstrated a huge deep femoral arterial aneurysm

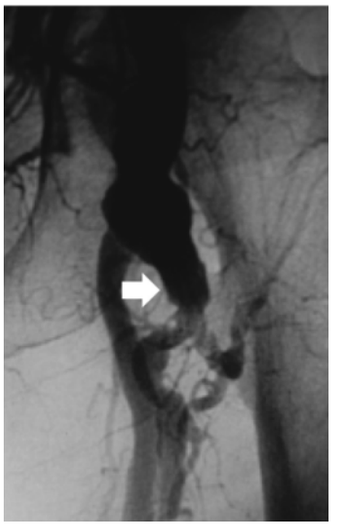

**Fig. 2** Preoperative angiograms
Angiograms demonstrated a huge deep femoral arterial aneurysm

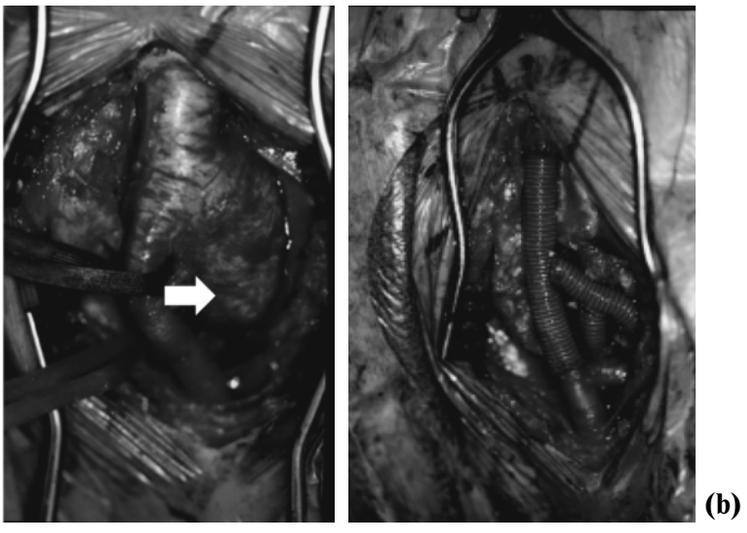


**Fig. 3** Operative view
(a) A common and deep femoral aneurysm
(b) Post grafting by using UBE artificial vascular graft

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