

# Giant Iliac Artery Aneurysm

## Case Report

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**Abstract:** Isolated iliac artery aneurysms are very rare vascular malformations. They can remain unnoticed for long periods of time because of their deep location in the pelvic region. Most of the patients present to the clinic with rupture of the aneurysm, and thus the condition has a very high mortality rate. We report here the case of an 84-year-old man with giant iliac artery aneurysms who was treated successfully by aneurysmectomy and aortoiliac bypass.

**Keywords:** Iliac artery • Aneurysm • Aorta

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## 1. Introduction

Isolated iliac artery aneurysm is a rare disorder occurring in about 0,03% of the population [1]. Approximately 30% to 50% are bilateral [1-3]. Since the iliac arteries are deep in the pelvis, the diagnosis of aneurysms of these vessels is difficult. They are detected most often when they enlarge rapidly, when they rupture, when they both enlarge and rupture, or when they are found incidentally during imaging studies for other abdominopelvic disorders. Only a few patients present with nonspecific local compressive symptoms of the lumbar nerves, iliac veins, or the adjacent visceral organs including bladder, ureters, and colon [4,5].

We present a case of giant iliac artery aneurysm treated with resection and replacement with a bifurcated graft.

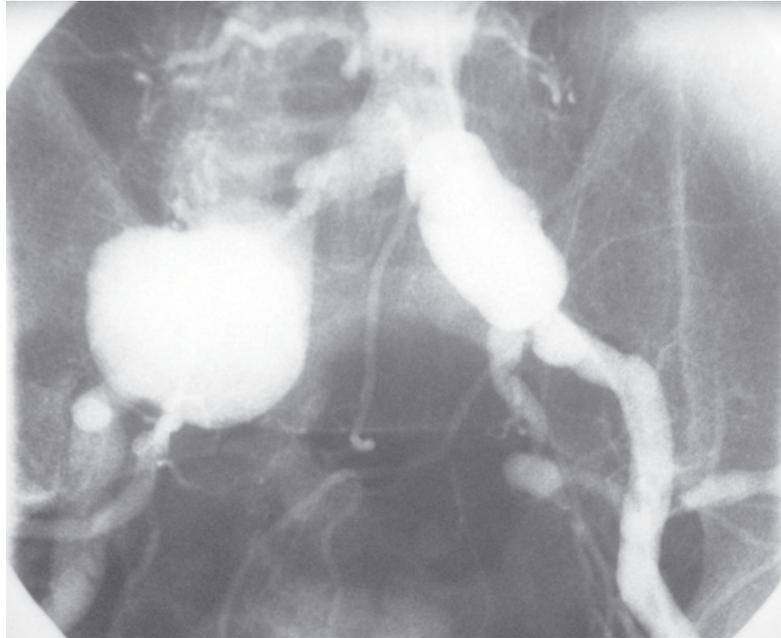
## 2. Case Report

A hypertensive 84-year-old male patient who was otherwise previously healthy was admitted to our institution with symptoms of constipation and ureteral obstruction. He had had abdominal pain for one week. During that time, the patient noticed a mass below the umbilicus that was increasing in size. He complained of abdominal pain, tenderness, and no defecation for the previous 5 days. Physical examination revealed

hypertension (blood pressure of 150/95 mm Hg) and a pulsatile mass in the pelvic region. Laboratory findings showed mild anemia (hemoglobin: 8,5 mmol/L, reference range: 8,6-1,2 mmol/L; hematocrit: 39%, reference range: 40-50%). A plain roentgenogram of the abdomen and pelvis showed diffuse air-fluid densities and multiple calcifications throughout the aortoiliac system. Bilateral lower extremity aortoperipheral angiography showed giant aneurysms of the common iliac arteries (Figure 1). Because of the risk of rupture, emergent surgical treatment was planned.

Surgery with the standard technique of lower abdominal median transperitoneal laparotomy showed that the colon, urinary bladder, and right ureter were compressed by the large aneurysms. There was a hematoma in the retroperitoneal region around the right common iliac artery aneurysm. Additionally, the distal abdominal aorta was also found to be ectatic. Following heparinization (5000 U), proximal and distal vascular controls were achieved by infrarenal aortic and bilateral external and internal iliac artery clamps. Since aneurysms were found in the distal abdominal aorta and both of the iliac arteries, these segments were resected, and aortoiliac bypass with the distal anastomosis to the external iliac arteries was performed. Both of the internal iliac arteries were implanted in the legs of the 20 by 10 mm bifurcated knitted graft (Vascutek, W. Renfrewshire, Scotland). Excised segments were sent to the pathology laboratory for histopathologic examination.

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**Figure 1.** Angiographic views of bilateral external iliac artery aneurysms.

The patient's postoperative course was complicated by a prolonged stay in the intensive care unit (4 days) and alimentation problems due to old age. He was successfully discharged from the hospital on the 16th postoperative day. Pathological examination of the resection specimens revealed fibrohyalinized tissue and diffuse atherothrombotic changes of the vessel wall.

### 3. Discussion

Iliac artery aneurysms are rare vascular malformations. Autopsy series of the population show an incidence of 0,03% [1]. They constitute 0,6-1,5% of all aortoiliac aneurysms [1-3].

They are mostly asymptomatic because of their localization deep in the pelvic area. On the other hand, as they enlarge, they can cause symptoms such as abdominal and back pain, ureteral obstruction, hematuria, and colon obstruction [4-5]. Unfortunately, a considerable number of the patients are not admitted to the clinic until the aneurysm has ruptured, thus increasing the mortality and morbidity rates [6]. The disease can also be diagnosed incidentally during the performance of imaging studies to look for other abdominopelvic disorders, which often are urologic in nature.

The average size of the iliac artery aneurysms usually ranges between 4 and 5 cm [1]. However, with ruptured aneurysms, the diameter of the vessel has been found to be 6 to 8 cm in various series [6]. In the literature, there

have been rare reports of iliac artery aneurysms greater than 12 cm in diameter [7,8].

Interestingly, the literature includes only a few retrospective studies that speculate on the relationship between the size of iliac artery aneurysms and the risk of rupture [6-8]. Follow up of patients with iliac artery aneurysms demonstrates a risk of rupture ranging from 10% to 70% within 5 years [6-10]. It seems the pathology itself is likely to enlarge in a short period of time. Generally, according to clinical experience, it is believed that the risk of spontaneous rupture increases dramatically in aneurysms larger than 5 cm in diameter [6].

Surgical treatment of the disease is indicated when the size of the iliac artery exceeds 3 cm in diameter [2]. The appropriate approach to the patients differs according to unilateral, bilateral, or aortic involvement and size of the aneurysmal segments. The preferred exposure for unilateral disease is through a retroperitoneal incision; however, median transperitoneal laparotomy is favored for aortic and bilateral extensions and giant aneurysms [9-11].

Another major concern is the surgical management of the disease. The treatment modality most often performed includes isolation and resection of the aneurysmal segment and graft interposition between the healthy segments of the artery. Another modality is resection and aortobifemoral bypass surgery, which is also possible for aortoiliac aneurysmal diseases [10-12].

In conclusion, even though iliac artery aneurysms are rare clinical entities, early diagnosis and elective surgery should be the treatment of choice to prevent

major morbidity and mortality before the aneurysms become large enough to lead to complications, including rupture.

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