The Management of Concomitant Renal Oncocytoma and Giant Coronary and Bilateral Common Iliac Artery Aneurysms

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We present the rare case of a 66-year-old Caucasian male patient presenting with intermittent left-side abdominal pain. He underwent a kidneys, ureters, and bladder computed tomography scan on which an incidental 45-mm giant aneurysm of the left anterior descending coronary artery was discovered along with 55-mm right-sided and 62-mm left-sided common iliac artery aneurysms and a 100-mm benign renal oncocytoma. He underwent on-pump coronary artery bypass grafting of the left anterior descending, left circumflex and right coronary arteries using internal mammary artery and saphenous vein grafts. He subsequently underwent simultaneous open left nephrectomy and bilateral common iliac aneurysm repair using a bifurcated tube graft. He made a full recovery postoperatively. Giant coronary artery aneurysms are rare. In the pediatric population, they are predominantly secondary to Kawasaki disease. In adults, atheromatous disease is the leading cause. The coexistence of giant coronary artery aneurysms with extracoronary artery aneurysms is extremely unusual. We propose that the identification of giant coronary artery aneurysms necessitates further imaging investigations to identify the presence of extracoronary aneurysms. To our knowledge, this is the first description of such a case in the literature.

A 66-year-old male Caucasian patient presented to the emergency department complaining of intermittent left-sided abdominal pain. On physical examination, he had mild left-sided tenderness on palpation, and urinalysis showed microscopic hematuria. He was referred to the urology outpatient service for further investigation.

His concurrent medical problems were hypertension, type 2 diabetes mellitus, and hypercholesterolemia. He had been diagnosed with a peptic ulcer 6 months earlier, which was successfully treated with *Helicobacter pylori* eradication therapy, and had suffered from a slipped upper femoral epiphysis as a child and olecranon bursitis as an adult. He had no previous history of chest pain, palpitations, or syncope and did not suffer from intermittent claudication. He has had no previous abdominal or thoracic surgery.

The patient worked in agriculture and had no family history of aneurysms or renal tumors. He has 3 healthy adult children. He has recently stopped smoking, with a 30 pack-year history and occasionally drinks alcohol.

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Ann Vasc Surg 2014; 28: 1033.e11–1033.e15
http://dx.doi.org/10.1016/j.avsg.2013.07.027

Manuscript received: March 26, 2013; manuscript accepted: July 3, 2013; published online: November 6, 2013.

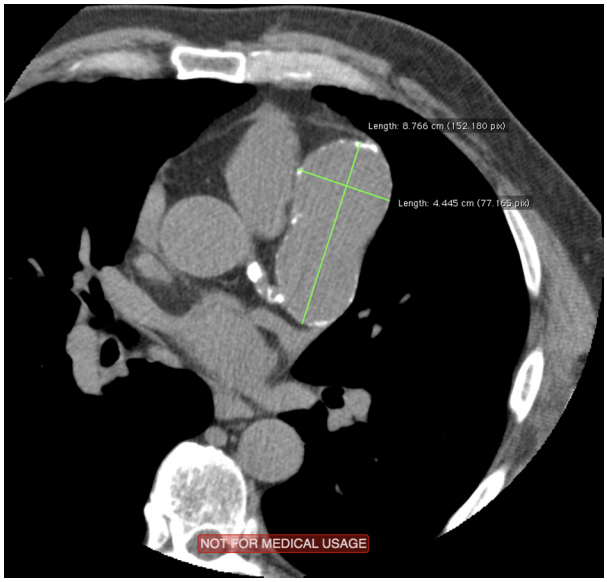

Fig. 1. Axial section of CT thorax: giant coronary left anterior descending artery aneurysm.

He underwent an outpatient kidneys, ureters, and bladder computed tompgraphy (CT) scan, which revealed a 100 mm × 95 mm heterogeneous mass in the left kidney with a central fleck of calcification and perinephric fat stranding. The remaining kidney was normal in appearance, and there was no hydronephrosis. The right kidney was normal. A formal CT aortogram including the chest, abdomen, and pelvis revealed a 92.7 mm × 44.6 mm aneurysm of the left anterior descending coronary artery (Fig. 1), a 55 mm × 100 mm fusiform right common iliac artery aneurysm and a 62 mm × 80 mm fusiform left common iliac artery aneurysm (Fig. 2). Magnetic resonance angiography of the intracerebral vessels showed diffuse ectasia of the basilar and vertebral arteries, measuring 6 mm in greatest diameter, without focal aneurysmal dilatation.

After multidisciplinary discussion, it was decided that his giant coronary aneurysm necessitated treatment first, despite the fact that his CT images suggested a possible left renal cell carcinoma. He was first transferred to a regional tertiary referral cardiothoracic surgery center for further assessment and evaluation. Coronary angiography demonstrated the aneurysm of the left anterior descending coronary artery. The right coronary artery was also found to be diffusely aneurysmal with a maximum diameter of 15 mm. He then underwent on-pump coronary artery bypass grafting of the right coronary artery, left anterior descending artery, and left circumflex artery using left internal mammary artery and saphenous vein grafts (Fig. 3).

Two months later, he attended our tertiary referral vascular surgical center where he underwent a concomitant open left total nephrectomy and bilateral common iliac aneurysm repair. The nephrectomy was performed via an anterior approach through a midline laparotomy incision. The common iliac artery aneurysms were then repaired using a bifurcated tube graft.

Macroscopically, the tumor measured 95 mm × 100 mm and was brown in color and soft in texture, with a central palpable area of calcification. Histologic examination of the renal mass showed nests of cellular atypia composed of large, eosinophilic cells with round, regular nuclei consistent with a renal oncocytoma. The mass was confined within a capsule without extracapsular spread (Figs. 4 and 5).

Postoperatively he spent 2 weeks in the intensive care unit and suffered multiple episodes of pyrexia and raised inflammatory markers. Ultrasound examination revealed a right-sided intra-abdominal collection extending from the right iliac fossa to the base of the liver and along the aorta and iliac vessels. The collection contained lymphatic fluid with superimposed bacterial infection and was subsequently drained after discharge home with long-term antibiotic therapy.

DISCUSSION

Coronary artery aneurysms are identified in approximately 2% of coronary artery bypass procedures. Giant coronary artery aneurysms are defined as aneurysms of the coronary arteries >20 mm in diameter and are uncommon.[1] Most cases described occur in children with Kawasaki disease, and diagnosis in adults is rare.[2] The majority of giant coronary artery aneurysms diagnosed in adulthood are secondary to atherosclerosis, although cases associated with autoimmune disease, infection, and direct trauma have been described.

Causes of Giant Coronary Artery Aneurysms

- Atherosclerosis
- Autoimmune disease
    - Kawasaki disease
    - Behcet disease
    - Systemic lupus erythematosus
    - Takayasu arteritis
    - Microscopic polyangiitis
- Connective tissue disease
    - Marfan syndrome