

## CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

### Vascular Diseases Quiz – Case 13

A 74-year-old hypertensive man was examined by his local physician due to the recent onset of an upper respiratory tract infection. Ten years earlier, he had undergone repair of an infra-renal abdominal aortic aneurysm with aneurysmorrhaphy and placement of an aortobifemoral graft. Since that surgery he had done very well. In addition to the findings related to the upper respiratory tract infection, a thorough physical examination by the local physician revealed a large, pulsatile midabdominal mass. He did not have abdominal or back pain and pedal pulses were intact bilaterally. Although the patient had a low-grade fever that was probably caused by the upper respiratory infection, the patient's white blood cell count was normal, and blood cultures did not show pathologic growth. A contrast-enhanced computed tomography (CT) of the abdomen showed an aortic aneurysm that was contiguous with the previously placed aortobifemoral graft above the renal arteries. No evidence of perianeurysmal fluid was noted. A presumptive diagnosis of aortic pseudoaneurysm was made, and the patient was transferred to our institution for further care. An aortogram was obtained to specifically define the anatomy of this para-anastomotic aneurysm (fig. 1).

#### Comments

*Para-anastomotic aneurysm of the abdominal aorta (PAAA) is a major complication occurring after infra-renal aortic grafting performed either for occlusive or aneurysmal disease and involves the suture-line with disruption of the anastomosis. PAAAs may be caused by graft infection or related to a sterile degenerative process involving the anastomosis. PAAAs associated with graft infection are most commonly diagnosed within 5 years after aortic grafting (1–6%), while the uninfected degenerative PAAAs are usually observed 8–10 years after primary aortic surgery. The latter are secondary to a slow, degenerative process acting silently at the anastomosis site, apparently not influenced by any external factors, and responsible for late failure of aortic reconstructions with life-threatening clinical consequences.*

*A PAAA may represent a true aneurysm of the aortic remnant just adjacent to the anastomosis, or a false aneurysm (anastomotic aneurysm) of the suture-line. Both entities can potentially cause serious complications such as thrombosis, distal embolization, compression/erosion of adjacent organs, and aortic rupture.*

*An uninfected PAAA may evolve silently over a long period. Symptoms are usually absent and when present, they are non-specific. Clinical signs are usually difficult to detect due to the retroperitoneal*

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*location of PAAA, therefore, imaging examinations are necessary to make the diagnosis.*

*The real frequency of uninfected PAAA is difficult to determine. Based on the limited data available in the literature, the overall*



**Figure 1.** Digital subtraction angiography demonstrating a para-anastomotic aortic aneurysm at the proximal anastomosis of a previously placed aortobifemoral graft for abdominal aortic aneurysm repair.

*incidence appears to range from 0.2% to 15%, however, this is probably an underestimate, since the follow-ups scheduled by most Departments of Vascular Surgery to check aortic grafts are not continued for long enough period, considering the time at which uninfected PAAA usually develops.*

*Once diagnosed, the management of uninfected PAAA is extremely challenging both in elective and emergency conditions, and the outcome appears to be influenced more by technical surgical variables than by the patients' clinical background. The high morbidity and mortality rates reported in the literature, particularly following surgery performed as an emergency, highlight the importance of an early diagnosis in order to manage it in elective conditions.*

*Consequently, all patients treated with abdominal aortic grafting must be followed-up with standardized, long-term evaluations, including clinical examination, color Doppler ultrasound and when indicated by ultrasound findings, CT-angiograms. Such a periodic, life-long surveillance program should enable PAAA to be treated in elective conditions with an acceptable interventional risk.*

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