

CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Vascular Diseases Quiz – Case 4

A 37-year-old male with a chief complaint of left lower-extremity numbness and claudication was referred to our department for evaluation and management. His medical history was notable for Hodgkin's lymphoma that was successfully treated with chemotherapy and high dose pelvic radiation therapy 20 years before the current onset of symptoms. Before referral for vascular evaluation, the patient had undergone extensive orthopedic and neurological clinical and imaging evaluation without however any definite diagnosis. Physical examination upon admission to our department revealed absence of palpable pulses at the femoral, popliteal and pedal arteries of the left lower extremity. Subsequent workup with Digital Subtraction Angiogram (DSA) demonstrated a 95% diffuse -2 cm long-stenosis at the left external iliac artery (fig. 1) that was treated successfully with balloon angioplasty and stenting (fig. 2), with complete resolution of symptoms.



Figure 1. Preoperative digital subtraction angiography demonstrating a 95% diffuse stenosis at the left external iliac artery (arrow).



Figure 2. Angiogram demonstrating successful treatment with percutaneous angioplasty and stenting.

ARCHIVES OF HELLENIC MEDICINE 2008, 25(1):127
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2008, 25(1):127

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Comment

Radiotherapy vasculopathy is a dose dependent phenomenon that most commonly affects small and medium sized vessels. It can be expressed either as early acute thrombosis/arterial rupture within the first months after radiotherapy, or as a late event such as arterial fibrosis and stenosis as well as accelerated local atherosclerosis within 3–10 years following radiation treatment.

Patients with radiotherapy arteritis can present with a variety of symptoms, including exsanguinating hemorrhage, acute ischemia, claudication, transient ischemic attacks, stroke, and hypertension depending on the location of the affected arterial segment.

The exact mechanism of radiation induced arterial disease is not clear, although a combination of direct injury and vessel wall ischemia due to obliteration of the vasa vasorum may be responsible. Irradiation of the arteries induces direct vessel wall damage, with an acute phase of endothelial proliferation, followed by medial degeneration and adventitial fibrosis and thickening.

Standard surgical techniques although can be safely applied for revascularization on the ground of radiation arteriopathy, they have significantly poorer results compared to common atherosclerotic lesions. Apart from difficulties during arterial exposure due to the distorted anatomy and inflamed and fibrosed tissues, these procedures in previously radiated areas are also associated with an increased rate of late graft infection. Endovascular techniques including angioplasty and stenting represent a viable alternative to surgery for treating stenotic lesions secondary to radiotherapy, and for the majority of the patients, are considered as the first line treatment.

In conclusion, radiation arteriopathy should be always suspected in patients with peripheral or other arterial disease that have previously undergone radiotherapy for malignancies. Careful physical examination including pulse check along with a detailed past medical history are usually adequate for differential diagnosis with neurological or orthopedic disorders.

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Diagnosis: Post-radiotherapy external iliac artery stenosis