

## CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

### Vascular Diseases Quiz – Case 34

A 29-year-old male professional cyclist was presented with intense lower limb pain and muscle contractions while he was training intensively for an upcoming major competition. The initial symptom was numbness of the limb that quickly turned into pain and muscle contractions. The symptoms usually started while he was training for some time and gradually resolved with rest. While he was in pain, it was impossible to move or feel his leg. No significant past medical history and no signs of neurologic deficit existed. Plain film radiography of the spine did not reveal any pathology. The patient could easily exercise on a treadmill for 15 min without having any symptoms. He has been an athlete since he first started cycling in high-school.

What is the diagnosis?

#### Comment

*Endofibrosis was first described in 1986 by Chevalier et al and is defined as intimal thickening of the arterial wall, with collagen fibers, fibroblasts, and smooth muscle cells, and without inflammatory or atherosclerotic lesions. The artery loses its ability to stretch during exercise and that contributes to the occurrence of symptoms. This condition is common between athletes in sports usually involving intensive and repetitive flexion of the hip joint. Endofibrosis usually affects the external iliac artery (EEIA), but other more rare locations*

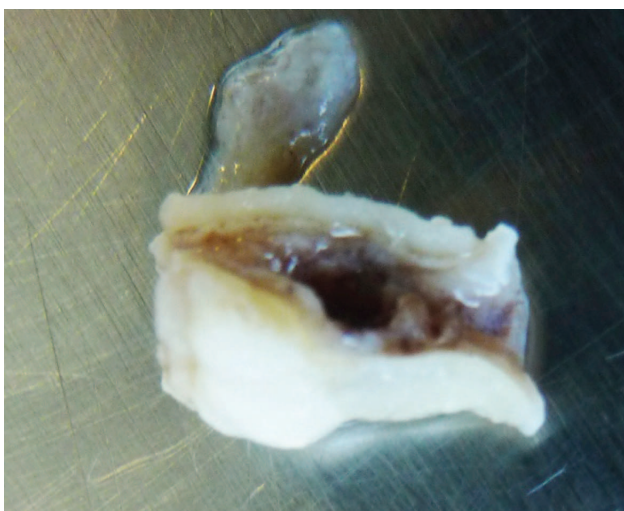


Figure 1. Endofibrosis tissue.

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ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2016, 33(3):423–424

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*are reported. Several theories have tried to explain how endofibrosis occurs, but the direct mechanical stress exerted by the psoas muscle upon the artery during intensive and repetitive physical activity is the most accepted theory.*

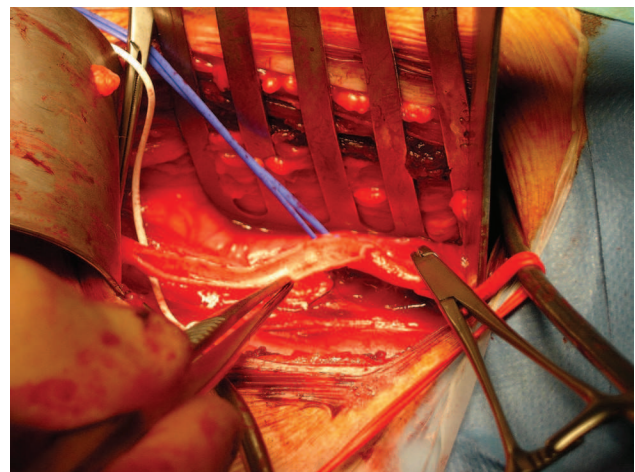


Figure 2. External iliac artery (EIA) with the endofibrosis tissue removed.

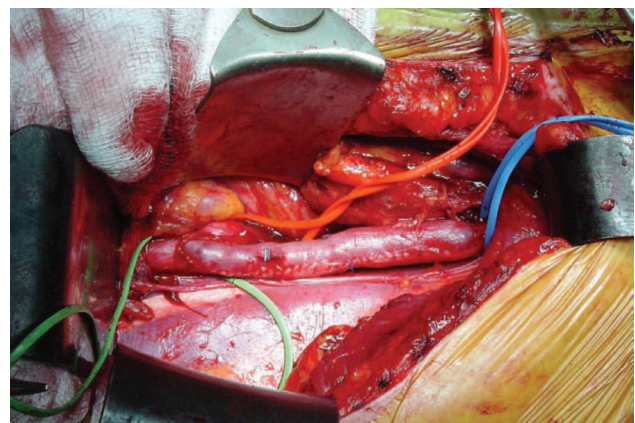


Figure 3. Vein patch angioplasty.

Patients with EEIA usually complain of thigh or lower limb claudication during intensive training at near-maximal physical capacity. Other symptoms may include painful muscular contraction, motor palsy, numbness or distention.

Physical examination offers little information. Only rarely a bruit could be heard over the inguinal ligament and the perimeter of the affected limb could be slightly greater in the thigh and calf compared to the healthy limb.

Ultrasound scan of the affected vessel demonstrate parietal thickening, enhanced echogenicity of the arterial wall, straightness of the abnormal arterial segment, and mild narrowing of the arterial diameter of the proximal segment of the diseased artery. Digital subtraction angiography can give some information regarding the stenosis. Computed tomography (CT) can detect the stenosis and the wall thickening. Magnetic resonance imaging (MRI) is not recommended for EEIA diagnosis. Ankle-brachial index shows a significant drop during strenuous exercise.

Despite the advances of endovascular techniques, in endofibrosis cases angioplasty and stenting of the lesion is not recommended as this is not a rigid lesion (as in atherosclerosis) and it is subjected to mechanical stress from the inguinal ligament and the psoas muscle. Open surgery consists of endofibrosectomy with patch angioplasty, usually vein patch. An alternative method is reconstruction with either autogenous or prosthetic graft.

Open repair has shown great results and patients can return to intensive training some time after surgery.

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## References

1. ABRAHAM P, LEFTHERIOTIS G, BOURRE Y, CHEVALIER JM, SAUMET JL. Echography of external iliac artery endofibrosis in cyclists. *Am J Sports Med* 1993, 21:861–863
2. ABRAHAM P, CHEVALIER JM, SAUMET JL. External iliac artery endofibrosis: A 40-year course. *J Sports Med Phys Fitness* 1997, 37:297–300
3. WILLSON TD, REVESZ E, PODBIELSKI FJ, BLECHA MJ. External iliac artery dissection secondary to endofibrosis in a cyclist. *J Vasc Surg* 2010, 52:219–221
4. CHEVALIER JM, ENON B, WALDER J, BARRAL X, PILLET J, MEGRET A ET AL. Endofibrosis of the external iliac artery in bicycle racers: An unrecognized pathological state. *Ann Vasc Surg* 1986, 1:297–303

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