Clinical Neurology and Neurosurgery 174 (2018) 97–100

Contents lists available at ScienceDirect

Clinical Neurology and Neurosurgery

journal homepage: www.elsevier.com/locate/clineuro

Case report

A case of sciatica revealing a giant syphilitic aneurysm

Francesco Iodice[a], Emanuele Maria Costantini[a], Giovanni Tinelli[b], Tommaso Verdolotti[c], Luca Padua[a,d,*]

[a] Department of Geriatrics, Neurosciences and Orthopaedics, Catholic University of the Sacred Heart, Rome, Italy
[b] Department of Vascular Surgery, Fondazione Policlinico A. Gemelli IRCCS, Rome, Italy
[c] Department of Radiology, Fondazione Policlinico Gemelli IRCCS, Rome, Italy
[d] IRCCS Fondazione Don Carlo Gnocchi, Milan, Italy

ARTICLE INFO

Keywords:
Sciatic neuropathy
Tertiary syphilis
Iliac artery giant aneurysm
EMG
Magnetic resonance imaging

1. Introduction

One of the most common, andsometimes challenging, conditions in neurological practice is sciatic neuropathy, a sharp pain radiating in the posterior or lateral side of the leg, eventually complicated by motor and sensory deficits. Mechanical causes like sprain of the lumbar spine and degenerative processes of the disc, disc herniation and spinal canal stenosis, but also visceral causes like ectopic endometriosis or ovarian cysts, primary or secondary neoplastic conditions of vertebrae, spinal cord or nerve trunks, inflammatory syndromes and infections can potentially be surgically treated [1]. Clinical and instrumental data should guide the clinician in the identification of atypical sciatica where surgery will have no effect. We report an atypical case of sciatic neuropathy revealing a giant iliac artery aneurysm secondary to tertiary syphilis.

2. Case report

We describe a case of a 79-years-old man reporting 3 months right sciatica associated with progressive numbness, followed by weakness of dorsiflexion of the right foot.

The patient had a history of atrial fibrillation and multiple aneurysm in the abdominal aorta, left hypogastric, right popliteal arteries evident in previous CT (Fig. 1).

One year before our examination, he started to suffer from progressive low back pain with right sciatica, and underwent surgery for placement of L4-L5 interspinous device, Bacjac n. 12, for treatment of bilateral foraminal stenosis, without any improvement of symptoms. At the time of the surgery, the pain was not correlated with the presence of aneurysms.

When the patient came to our attention, he was suffering from pain in the back and lateral side of the right leg radiating to the knee and the calf, he had complete motor deficit of tibialis anterior, peroneus longus and extensor hallucis longus muscles; no other motor deficits were detected.

The patient then underwent a neurophysiological evaluation (see supplementary materials):

- sensory neurography of right sural and superficial peroneal nerves showed absence of the sensory action potential;
- motor neurography of right peroneal nerve showed absence of compound muscle action potential, while motor neurography of right tibial nerve was normal;
- electromyography (EMG) showed fibrillation potentials in the right short head of biceps femoris, tibialis anterior, peroneus longus and extensor digitorum brevis;
- voluntary EMG showed reduced recruitment with large motor unit action potentials in the aforementioned muscles.

Neurophysiological data indicated post-ganglionic involvement of the right sciatic nerve, with impairment of the peroneal branch. The patient underwent a lumbosacral and pelvic Magnetic Resonance Imaging study, which showed the presence of an expansive mass (12 × 9 × 8 cm) impinging the sciatic nerve in the piriformis muscle

* Corresponding author at: Fondazione Don Carlo Gnocchi ONLUS, Piazzale Morandi 6, 20121, Milan, Italy.
E-mail addresses: luca.padua@unicatt.it, luca.padua@policlinicogemelli.it (L. Padua).

https://doi.org/10.1016/j.clineuro.2018.08.005
Received 13 April 2017; Received in revised form 15 July 2018; Accepted 1 August 2018
Available online 02 August 2018
0303-8467/

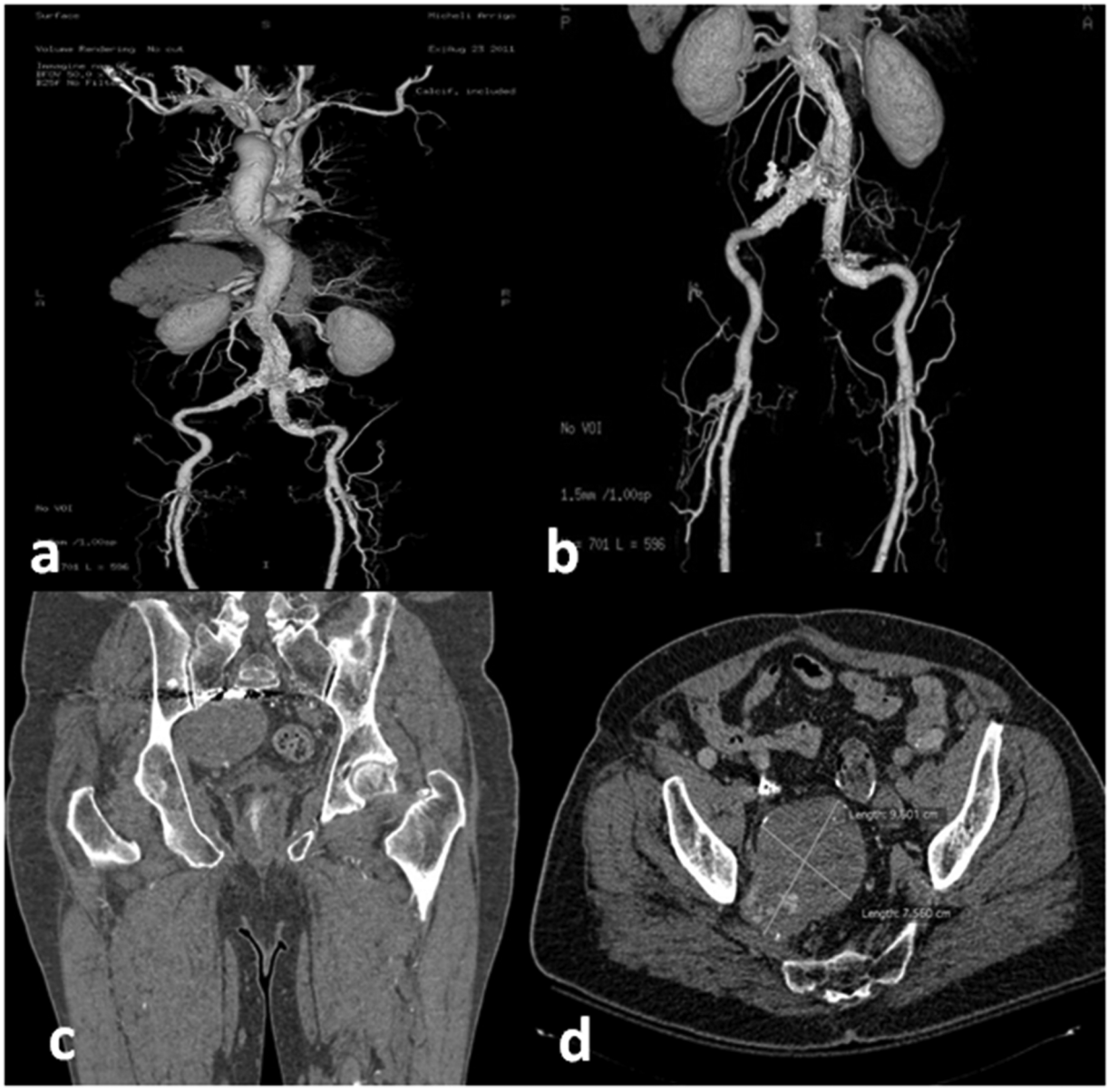

Fig. 1. CT surveillance imaging after Endovascular Aneurysm Repair (EVAR); (a) and (b) Volume-rendered (VR) images, (c) coronal and (d) axial CT images demonstrate a right hypogastric aneurysm, without evidence of endoleak.

space. A subsequent CT angiography of the pelvis diagnosed a hypogastric artery aneurysm (Fig. 2).

Considering this vascular picture, it was hypothesized as a case of systemic arteritis and a Venereal Disease Research Laboratory (VDRL) test to rule out syphilis was performed, which indicated a high positive result. The Treponema Pallidum Haemoagglutination Assay (TPHA) test was confirmatory (title 1/5120). Because the research for IgM of Treponema Pallidum was negative, a diagnosis of tertiary syphilis with vascular localization was made. Extensive infective screening, including Herpes Simplex Virus types 1 and 2, Human Herpes Virus 6 (HHV6), Epstein Barr Virus (EBV), Cytomegalo Virus (CMV), Rubella Virus, Varicella-Zoster Virus (VZV), Toxoplasma Gondii, Enterovirus, Influenza type A and B and HIV, were negative. Cerebrospinal fluid analysis revealed mildly elevated protein level (56 mg/dl) normal glucose and negative VDRL test.

At the CT follow-up, the right hypogastric aneurysm showed an initial shrinkage of the sac with maximum diameter of 70 mm and a rapid growth during the last two years [2].

The patient was then treated with benzathine penicillin 2.4 million IU intramuscular once a week for 3 consecutive weeks. Because of severe cardiac involvement, it was not possible to perform vascular surgery.

Six months follow-up showed normalization of VDRL and reduction of TPHA titer (1/1260). The patient had no more pain and neurological examination showed no variations in the clinical picture. In our case the resolution of pain could be expression of a reduction in vessel parietal tension and consequent compression of the nerve, eventually obtained by eradication of the bacterium.

3. Discussion

We describe a case of sciatic neuropathy caused by a giant syphilitic aneurysm rapidly increasing in volume and endotension with a consequent fast worsening of the clinical picture. Interistingly, the patient had already a massive aortic aneurysm at the time of the first surgery, but this was not linked to the onset of the sciatic pain. Syphilis is an infectious disease caused by Treponema Pallidum, a bacterium capable to penetrate through the endothelium and to cause endovascular and