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LETTER TO THE EDITOR

Unrecognized failed back surgery syndrome: a paradigmatic case in a very young patient

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Dear Editor,

Failed back surgery syndrome (FBSS) is still a poorly recognized condition and the spinal cord stimulation (SCS), which has been proven effective in treating this condition, is offered in most of cases only after useless and expensive spine fusion procedures due to the poor knowledge of signs of this syndrome.

A 27-year-old woman came to our attention with a 4 years history of persistent low back pain (LBP) and bilateral leg pain (LP) (right > left), despite increasing intake of analgesic medications. She also complained of burning dysesthesia and hypoesthesia distributed in the S1 nerve root region. Autonomous walking was possible only using a crutch. Due to poor control of pain, the patient had lost her job. The neurological assessment showed weakness of right foot movement; straight leg raising test was positive at 10° on the right and at 30° on the left.

When she was 23 years old, due to the onset of acute right LP, she had undergone the removal of a L5–S1 disk herniation (Fig. 1a); after 2 months a second operation was carried out for a recurrence of disk herniation at the same level. Nonetheless LBP and LP persisted with the onset of burning dysesthesia involving her right leg. After 2 years, due to the persistence of symptoms and the evidence of a CSF collection (Fig. 1b) she underwent a new operation for scar neurolysis, CSF leakage repairing and interspinous device placement in L4–L5 and L5–S1 (Fig. 1c). Nonetheless, symptoms kept on worsening. Thus, she was submitted to removal of interspinous devices and L4–L5–S1 fixation (Fig. 1d) probably to prevent lumbar instability, although, in our opinion, there were not clear signs of instability preoperatively (Fig. 1c). For the persistence of symptoms, the medical therapy was maximized, with a combination of Pregabalin (600 mg/day per os divided q12hr), NSAIDs and opioid. One year later, she underwent an epiduroscopy with lysis of adherence and injection of hyaluronidase and prednisone. This treatment was partially effective on pain, but after few days she also started to feel pain in her left posterior-lateral thigh.

We performed a new MRI scan which did not show any nerve root compression (Fig. 1e). We made the diagnosis of a failed back surgery syndrome (FBSS) and we told the patient the purposes and the possible complications of spinal cord stimulation (SCS)[1]. The patient accepted the SCS and underwent the percutaneous insertion of a spinal epidural electrode (Vectris Sure Scan, Medtronic) with distal extremity placed at T10 level (Fig. 1f). During the trial period (1 month), we carried out a tonic stimulation with a comfortable paresthesia fully covering the painful area (pulse width programmed at 300 μs and frequency at 100 Hz). After 1 week, she reported a reduction of pain more than 50% on VAS and the abolition of all analgesic medications except Pregabalin. After 1 month, she reported a stable reduction of pain of about 70% on VAS, the complete withdrawal of drugs and she started to walk without crutch; the neurological assessment revealed a strength improvement in the right foot. As a consequence, she demanded the implantation of the subcutaneous pulse generator (Prime Advanced Sure Scan, Medtronic). At 6 months follow-up, she has reported a stable reduction of pain of about 70% on VAS with no drug intake. She keeps on walking without crutch and has started to look for a new job.

The prevalence of FBSS in general population ranges between 0.02 and 2% [1, 2] but probably the real incidence is underestimated because the failure rate of spinal surgery has been reported ranging between 10 and 40% [3]. Here, we report on a paradigmatic case in whom the patient was probably overtreated in terms of instrumental device placement for spine stability. We can hypothesize that these devices could have been avoided if her FBSS

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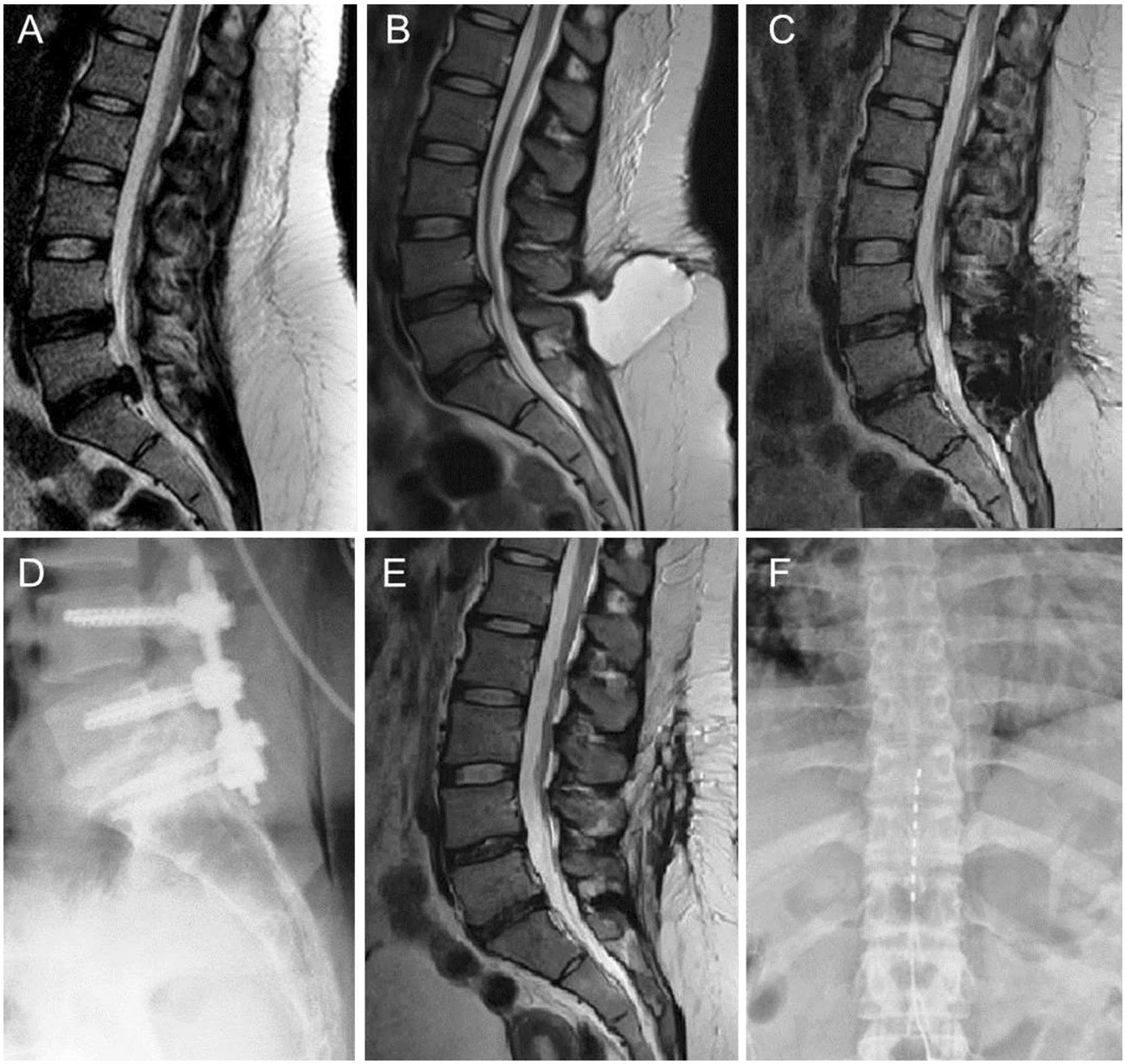

Fig. 1 **a** Sagittal T2-weighted spine MRI showing a L5–S1 disk herniation. **b** Sagittal T2-weighted spine MRI taken after two operations (first surgery for L5–S1 disk herniation and second surgery for herniation recurrence) showing a CSF fluid collection. **c** Sagittal T2-weighted spine MRI after scar neurolysis, CSF leakage repairing and interspinous device placement in L4–L5 and L5–S1 (third operation). **d** Plain X-ray after L4–L5–S1 transpedicular screw fixation and removal of the interspinous devices (fourth operation). **e** Sagittal T2-weighted spine MRI showing no sign of lumbar stenosis or nerve root compression immediately before SCS. **f** Plain X-ray showing the spinal epidural electrode with distal extremity placed at T10 level

condition had been recognized earlier. In fact, the burning dysesthesia afflicting her right leg after the second spine surgery could have been explained as a neuropathic complaint. Moreover, in our opinion, no sign of instability was evident in our patient. It is important to underline that the success rate of a second spine surgery is 30% and decreases to 15 and 5% after the third and the fourth ones, respectively [4]. Thus, we think that it is important to early recognize FBSS also considering that SCS has been reported to be more effective and less expensive than reoperation for spinal decompression or fusion [2, 3]. In conclusion, the poor knowledge of FBSS signs can delay SCS leading to useless and expensive spine fusion procedures. SCS should be kept in mind by neurologists and spine surgeons in cases of spine surgery failure or at the onset of drug-resistant neuropathic pain after spine surgery.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from the patient included in the study.

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