

Tinnitus After Replacement of a Spinal Cord Stimulator



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INTRODUCTION

Spinal cord stimulation (SCS) is an effective therapy for persistent back and leg pain and has demonstrated success in a variety of chronic intractable conditions. SCS consists of stimulating electrodes implanted in the epidural space and an electrical pulse generator. Many troubles can be observed while electrode placement in the epidural space. In this case, we present a patient with persistent tinnitus symptom after SCS replacement.

CASE REPORT

A 45 year-old male patient was admitted to our clinic with paresthesia and hyperalgesia on his right feet and leg. On his medical history the patient had wounded by a gun by accident on L1 vertebra four years ago. After gunshot injury, the patient has developed severe pain, paresthesia and muscle contraction in both legs and feet. He was complaining about waking up at night with pain and tingling despite of using gabapentin 3600 mg/daily and baclofen 80 mg/daily. His preoperative visual analog scale (VAS) rating score was 8/10. Implanting SCS was planned after the initial evaluation. SCS was implanted successfully at the level of L1 vertebra under fluoroscopy (medtronic). There was no signs of a cerebrospinal fluid leakage. The postoperative second day headache and tinnitus was started. The initial assessment revealed that the SCS runs normally without any trouble (270 msec ve 40 hertz). The symptoms of the patient could be related to the ongoing CSF leakage so epidural blood patch was considered for the treatment. For the level detection of the leakage, we planned magnetic resonance imaging of cerebrospinal fluid but the SCS does not allow this imaging. The patient's tinnitus was ongoing. The patient was consulted to the ENT department. Trimetazidine treatment was started, but no significant decrease in symptoms were observed during follow-up.

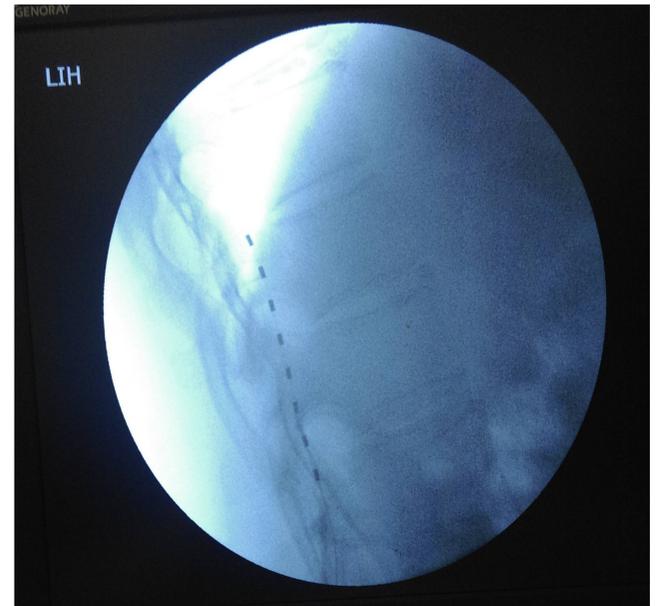
We noticed that, the electrode was directed to the anterior epidural space on lateral fluoroscopic screening although various manipulations. The fibrotic tissue due to the previous gunshot would prevent the appropriate placement of the electrode. Furthermore, we thought that the postoperative headache and tinnitus may have caused by epidural injury due to the repetitive attempt ions.



Picture 1: patient's preoperative MR imaging, He doesn't have L2-S2 spinous processes.



Picture 2: Spinal Cord Stimulator on anteroposterior fluoroscopic image



Picture 3: Spinal Cord Stimulator on lateral fluoroscopic image

CONCLUSIONS

SCS implantation is an invasive epidural procedure, for this reason, the other complications of epidural procedures can be observed. Wong and colleagues reported a case of a 25 year old patient who had tinnitus after epidural catheter insertion for labour anesthesia. They also reported that the patient's symptoms had relieved after epidural blood patch. Hasegawa et al also reported a similar case report which is about a 34 year old patient who had suffered from post spinal tinnitus for 8 years. They also reported that the tinnitus had disappeared completely after %2 lidocaine injection to the epidural space. Narchi P. and colleagues from ENT department reported a 54 year old patient who had tinnitus lasting for 4 years. Tinnitus had started after diagnostic lumbar puncture and was relieved after 20 ml autologous blood patch.

Now the question is: The epidural blood patch for the treatment of epidural CSF leakage can also be done after the CSF leakage after implantation of SCS?

REFERENCES

1. Fournet-Fayard A, Malinovsky JM. Post-dural puncture headache and blood-patch: theoretical and practical approach. *Ann Fr Anesth Reanim.* 2013; 32(5):325-38.
2. Wong AY, Irwin MG. Postdural puncture tinnitus. *Br J Anaesth.* 2003;91(5):762-3.
3. Hasegawa H, Sanefuji Y, Kanda T, Kasai H. A case of postspinal tinnitus which improved after undergoing epidural anesthesia. *Masui.* 2010;59(10):1254-6.
4. Narchi P, Veyrac P, Viale M, Benhamou D. Long-term postdural puncture auditory symptoms: effective relief after epidural blood patch. *Anesth Analg.* 1996;82(6):1303.