



Sudden Hearing Loss After Spinal Anesthesia

Spinal Anestezi Sonrası Gelişen Ani İşitme Kaybı

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Dear Editor,

We had a patient who developed hearing loss after spinal anesthesia for an urological operation on postoperative day first. We also wanted to share our experiences with you about the healing process of the patient.

After explaining the possible complications and obtaining consent from the 53-year-old male patient who would undergo regional anaesthesia for ureteral stones, he was given 2 mg midazolam intravenous (iv) for premedication before being taken into the operating room. In the operating room, standard monitoring (ECG, blood pressure, pulse oximetry) was performed. IV infusion was started with saline solution. After sterilising the injection area with 10% povidone-iodine (PVP-I, Betadine) while the patient was in the sitting position, the 25 G Quincke needle (Spinocan, B. Braun Melsungen AG, Germany) was inserted into subarachnoid space through intervertebral L 3-4 space after the first try. After monitoring the flow of cerebrospinal fluid, 12.5 mg of 0.5% heavy bupivacaine and 25 mcg of fentanyl were given together. Due to motor block formation and the provision of analgesia at the level of T8 in the pinprick test, the patient was positioned in the lithotomy position and surgical site preparation began; no urinary catheter was inserted. 1 g of cefazolin IV was given as antibiotic prophylaxis and the surgery commenced. Throughout the almost 45-minute surgery, all vital signs remained stable and no complications were observed. At the end, a total of 1500 ml of 0.9% saline solution was administered to the patient. Motor block diminished in 2.5 hours. With no complaints in the postoperative period, the patient was discharged in the 24th postoperative hour. After discharge, on the same day, the patient applied to our Otorhinolaryngology Clinic with sudden hearing loss complaint in the left ear. The examination showed bilateral tympani membranes intact while audiology evaluation revealed pure tone average to be 20 dB-20 dB in the right ear and 48 dB -45 dB in the left ear, respectively. After giving the patient 200 mg methylprednisolone along with 2 amps of ranitidine IV bolus, remission was observed in the patient's hearing loss after the audiological examination on post-

treatment day 1 (post-treatment pure tone average was 15 dB-15 dB on the right, and 20 dB-20 dB on the left, respectively). The follow-up revealed no complications either.

The incidence of hearing loss after spinal anesthesia is between 0.2-8% (1,2). The formation mechanism of the loss has not yet been discovered clearly (2). While the healing process of hearing loss after spinal anaesthesia may be spontaneous, there are also different opinions about the process (2). One of the most often used regional anesthesia methods, spinal anaesthesia may nevertheless cause some postoperative complications. One of these complications is sensory-neural hearing loss and its etiology is not exactly known. Sometimes this hearing loss can be unnoticed by the patient (2). This hearing loss, which can be either unilateral or bilateral, can surface within the first 24 hours or 6 postoperative days though it often begins on the 2nd postoperative day (2).

Although the exact reason of hearing loss after spinal anaesthesia is not fully known, it is argued that inner ear fluid lessens through cochlear aqueductal way and relative endolymphatic hydrous, causing hair cells to distance themselves from the basal membrane, gives way to a low-frequency level of hearing loss (3).

Hearing loss after spinal anaesthesia usually occur in low frequency (125 and 250 Hz), and, thus, it is often unnoticed by patients. While patients may recover from the hearing loss spontaneously, the duration of the loss may take up to 7 months to 2 years or it may even be permanent (4). The loss may also be accompanied by headache, hearing loss, tinnitus and nausea. In our patient, there were no other findings except for the hearing loss.

The treatment of hearing loss after spinal anesthesia is controversial. Some authors argue that there is no need to treat the loss (5), while some others are against the idea of waiting for spontaneous recovery. There are numerous ways to treat the sudden hearing loss;

nonetheless, practitioners usually administer steroids. We have applied 200 mg IV steroid and 2 ampuls of ranitidin IV bolus for our patient and his hearing improved within 24 hours after treatment. It is difficult to say whether the improvement in our patient was due to steroid therapy or it was simply spontaneous. Indeed, the dose and/or the exact time about the efficacy of steroid therapy has not been proven. Besides, there has been a case that reports improvement by way of epidural blood patch, as it is applied in the treatment of post-spinal headache, for the treatment of hearing loss.

Consequently, we may experience hearing loss after spinal anesthesia. In addition, the possibility of postoperative hearing loss should be mentioned to patients undergoing spinal anaesthesia before the operation. Likewise, patients should be checked for hearing loss following the operation.

Best regards.

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