



# The Role of Surgical Diagnosis in The Choice of Anesthetic Technique

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## ABSTRACT

Spinal anesthesia is a regional anesthetic technique applied by the anesthesiologist, more than a hundred years. The growing popularity of ambulatory surgical procedures have led to more frequent use of spinal anesthesia. This is an anesthetic technique which enhances the satisfaction of the patient and surgeon with this aspect. Chordoma is a rare, slow growing primary malignant tumor of the axial skeleton. It is seen at sacrum and skull base in the spine especially sacrococcygeal area (%50). In this paper, we presented a rare case of sacral chordoma up our spinal anesthesia. Perioperative potential risks can be minimized by close monitoring and good preoperative evaluation. Thus; anesthetic technique which even thought as an inappropriate method can be preferred and we believe that diagnosis can remain in the secondary plan in this decision.

**Key words:** chordoma, spinal anesthesia, anesthetic technique

## INTRODUCTION

Regional anesthesia techniques previously used for minor intervention in healthy patients, today it's used in elderly ASA III-IV patients for rapid recovery for major intervention, early discharge and to reduce cost (1). Spinal anesthesia is a regional anesthetic technique applied by the anesthesiologist for more than a hundred years (2). The growing popularity of outpatient surgical procedures has led to more frequent use of spinal anesthesia. This aspect is an anesthetic technique which enhances the satisfaction of patients and surgeons (2,3). Spinal anesthesia is preferable to general anesthesia due to reduce complications such as serious thromboembolism, protection of pulmonary function, reduce surgery bleeding, not requiring intubation, being conscious (1). A technological development, thanks to the new equipment and safe needle de-

## Anestezi Tekniğinin Seçiminde Cerrahi Tanının Rolü

### ÖZET

Spinal anestezi yüz yılı aşkın bir süredir anesteziistler tarafından uygulanan bir rejyonel anestezi tekniğidir. Ayaktan cerrahi işlemlerin artan popülaritesi spinal anestezinin daha sık kullanılmasına yol açmıştır. Bu yönüyle hasta ve cerrah memnuniyetini arttıran bir anestezi tekniğidir. Kordoma vertebranın nadir görülen, yavaş büyüyen primer malign tümördür. Sakrum, kafa tabanı ve omurga bölgesinde görülür, çoğunlukla (%50) sakrokoksigeal bölgede yerleşirler. Bu yazıda, nadir görülen sakral kordomalı bir olguda spinal anestezi uygulamamızı sunduk. Preoperatif iyi bir değerlendirme, peroperatif yakın takip ile olası riskler minimize edilebilir. Bu sayede; hastanın tanısından dolayı seçmekte tereddüt edilebilen anestezi yönteminin bile tercih edilebileceği kanısındayız.

**Anahtar kelimeler:** kordoma, spinal blok, anestezi tekniği

sign has decreased complication rates of spinal anesthesia (3). Chordomas are very rare primary malign neoplasms. They arise from the sacrum, skull base and spine, and they located mostly (%50) in the sacrococcygeal region. Their incidence rate is in the 0.1/100.000 /year range is estimated (4). Median age is around 60 years, nevertheless skull-base presentations affect a younger age, and may even occur in children and adolescents (5).

In this paper, we applied spinal anesthesia to a patient who has an invasive tumoral mass in sacrum, which is in close relation to the area of spinal anesthesia region and refused general anesthesia.

## CASE

The surgery was planned on the case with femur fracture

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based on tumor mass (chordoma) in the sacral region. 39 years old, 45kg weight in cachectic depends on the mass, the women patient's general condition was poor and her consciousness was clear. In preoperative examination, there were 8x10x13cm diameter tumoral mass which destructed the bones in the sacral region, and were pathologic fracture of the left femur associated with the mass. In auscultation, respiratory sounds were decreased and respiration was tachypneic. There was not any erythema and edema on her lumbar region. The detailed information about peri-operative anesthesia was given on the patient and the anesthesia consent was taken. In her research, the tumor was seen spreading to femur the in sacral region. The neurosurgery clinic was consulted. It was learned that any invasion of the vertebral column did not exist. She wanted to spinal block instead of taking a general anesthesia because of the fear of intensive care unit after general anesthesia. Premedication was not done to the patient who was received to the operation room and she was routinely monitored. About 300mL of 0.9% isotonic loaded to the case. The value of her peripheral oxygen saturation (SpO<sub>2</sub>) was 92%, heart rate 90 beat/min and blood arterial pressure (BAP) 120/60 mmHg. Side position was preferred for spinal anesthesia because she couldn't seat. After the cleaning of this area with povidone iodine, the interface of L<sub>2,3</sub> ve L<sub>3,4</sub> was determined. Local anesthesia was applied by injection of 2 mL 2% prilocaine to subcutaneous area on the midline. After injection of local anesthetic, and through the L<sub>2,3</sub> intervertebral space was reached via sharp tip, 25-gauge, quincke type, spinal needle (Spinocan®, B.Braun-Germany) with the median approach to the subarachnoid space. 3 mL of 0.5% Marcaine® Spinal Heavy (Glucose monohydrate Bupivacaine HCL 5mg and 80mg/dL) (AstraZeneca, Kırklareli, Turkey) was performed after cerebrospinal fluid (CSF) flow observed. Patients were laid down in the supine position and surgery was started after the block level came up to thoracic level 8 (T<sub>8</sub>). Monitoring was performed by ECG, pulse, BAP and SpO<sub>2</sub>. Apart from intraoperative short-term hypotension (for this hypotension 10mg ephedrine used), vital parameters were remained stable. After completion of intramedullary nail insertion due to femur fracture fixation which took approximately 80 minutes with loss of 300 mL blood, the patient was sent to the service. Any problems were not experienced in perioperative period. Neither swelling, erythema, hematoma at the region of the spinal injection, nor any neurological deficit were observed through postoperative 24 hours.

## DISCUSSION

Spinal anesthesia is achieved with a low dose of local anesthetic injection to subarachnoid area. Small volume in local anesthetic will block all the senses in the lower part of the body (2). Spinal anesthesia reduces postoperative mortality. However, the use of spinal anesthesia without sedation reduces the likelihood of postoperative delirium and cognitive dysfunction in some poor general condition patients (6). Allows reduction in the incidence of major postoperative complications such as deep vein thrombosis and pulmonary embolism, myocardial infarction, bleeding complications, pneumonia, respiratory depression and renal failure. It also reduces postoperative pain and analgesic requirements (7,8).

Although its rare, neurologic complications after spinal anesthesia causes serious problems. Drug induced neurotoxicity, and directly to the spinal cord, nerve roots damages can be seen. In addition, neurological dysfunction due to hemorrhagic complications such as radicular pain, paresthesia, paraplegia or urine feces incontinence can be seen (9). The incidence of central neuroaxial block complications are estimated 1/1.000 to 1/1.000.000 (10,11). Vascular pathology, spinal stenosis, polyneuropathy, coagulopathy, and the presence of profound hypotension, improper patient positioning, increasing the number of attempts are factors that facilitate neurological damage (12). Therefore, it is determined relatively unfavorable conditions for spinal anesthesia are; peripheral neuropathy, previous spinal surgery, chronic back pain, presence of preoperative antiplatelet drug intake, certain heart diseases (aortic stenosis), psychosis and dementia, uncooperative patients, physiological and emotional lability and prolonged surgery (6).

Operation indication of our case is pathological fracture on femur due to chordoma tumor on sacral region. Sacral chordomas are known as slowly and aggressively local grown tumors. Chordomas are uncommon primary malignancy's develops from primitive notochord. Estimated incidence is 1-5/1.000.000 /year (4,13). Chordomas are 1-4% of all skeletal tumors, that seen in the sacrum, skull base and spine, and they are mostly (50%) encountered sacrococcygeal region. They are considered as slow-growing, low-grade tumors, and rarely makes distance metastases mostly makes local recurrence. Unfortunately long-term survival is not well considered (14,15). Detailed information, on preoperative evaluation, about general and regional anesthesia was given to the patient. Patient pre-

ferred to spinal anesthesia. Examination of external lumbar surface anatomy was normal. A radiological evaluation of the patient's tumor was detected that spreaded to the femur from sacrum while there was no seen invasion in the vertebral column. Spinal anesthesia was achieved successfully. The indication of spinal block for this kind of patients is anesthesiologist's decision and related to his experiences.

Spinal anesthesia may be harmful in spinal tumors such as multiple myeloma that it can be seen often invasion to vertebra and acute hemorrhage (16). However, a detailed case history, physical examination, and tests at the end of the process, we detected that there was no invasion of chordoma where the region of spinal anesthesia will apply. We also apply the spinal anesthesia in the L<sub>2</sub>-L<sub>3</sub> level to get away from the tumor. L<sub>2</sub>-L<sub>3</sub> and L<sub>3</sub>-L<sub>4</sub> intervals are the easiest, reliable and frequent implementation region in the spinal anesthesia (2).

As a conclusion, due to good preoperative evaluation, perioperative close monitoring will minimize the potential risk; even though thinking of inappropriate anesthesia technique with current diagnose, formerly anesthesia technique can be preferred and for this reason diagnose will remain in secondary plan.

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