

# Continuous Spinal Anaesthesia in a Leprosy Patient with Femur Fracture

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## Abstract

**Introduction:** Leprosy is a chronic infectious disease caused by *Mycobacterium leprae* and affects the skin and nerves. Leprosy patients in which peripheral neuropathy and the involvement of other organs may have dysautonomia in the heart and respiratory system and autonomic involvement.

**Case Report:** A 65 years old patient was posted for fixing of right intertrochanteric with left subtrochanteric fracture femur. The possibility of a difficult airway was considered because of the mouth and nose deformities. Difficult airway equipment, such as a fibre optic bronchoscopy and laryngeal mask (LMA) were made available. The patient's vitals were normal. The haemogram and biochemistry measurements were normal. Under aseptic conditions in the sitting position at the L3 - 4 level, the subarachnoid space was identified with a 18 G Tuohy needle, the catheter was threaded into subarachnoid space and fixed at 10 cm. 1.2 mL (6mg) of 0.5% hyperbaric bupivacaine (6mg) administered. After 1 hour from the starting of procedure, again 1.2 ml (6mg) of 0.5% hyperbaric bupivacaine administered through the catheter. Level achieved till T10. BP was 72/42mmHg, treated with 12mg Mephentermine. Inj. Fentanyl 50 mcg given through the catheter and the catheter was removed.

**Conclusion:** Appropriate assessment before anaesthesia and preparation are important in the management of anaesthesia of patients with leprosy. Regional anaesthesia can be used as an alternative for patients without autonomic neuropathy and with a suspicion of systemic involvement and with difficult intubation

**Keywords:** Continuous spinal anaesthesia; Leprosy; Regional anaesthesia.

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## Introduction

Leprosy is a chronic infectious disease caused by *Mycobacterium leprae* and affects the skin and nerves. Leprosy patients in which peripheral neuropathy and the involvement of other organs may have dysautonomia in the heart and respiratory system and autonomic involvement.

## Case Report

A 65 years old patient (45 kg, 154 cm) was taken for elective surgery with the diagnosis of a right intertrochanteric with left subtrochanteric fracture femur, as a result of RTA. The possibility of a difficult airway was considered because of the mouth and nose deformities in the preoperative examination. Perioperatively, 0.9% of NaCl (10 mL kg<sup>-1</sup>) was administered. Difficult airway equipment, such as a fibre optic bronchoscopy and laryngeal mask (LMA) were made available to be used in case of difficult intubation.

The patient's preoperative non invasive arterial pressure was 100/60 mmHg, the pulse was 80 beats min<sup>-1</sup> and SpO<sub>2</sub> was 99. In the biochemistry measurements, glucose was 92 mg dL<sup>-1</sup>, creatinine was 0.5 mg dL<sup>-1</sup>, blood urea nitrogen was 20 mg dL<sup>-1</sup>. In the attempt implemented with the patient under aseptic conditions in the sitting position at the L3<sup>4</sup> level, the subarachnoid space was identified entering with a 18 G Tuohy needle. After detecting the flow of cerebrospinal fluid (CSF) the catheter was threaded into subarachnoid space and fixed at 10 cm. 1.2 mL (6mg) of 0.5% hyperbaric bupivacaine (6mg) administered.

When the spinal block came to the level of T8 by controlling the sensory block level with a 'pinprick' test, the operation was started with the patient under sedation with 1mg of midazolam applied intravenously. After spinal anaesthesia, the blood pressure fell as far as 80/48 mmHg which was treated with Inj. Mephentermine 6mg. After 1hour from the starting of procedure, again 1.2 ml (6mg) of 0.5% hyperbaric bupivacaine administered through the catheter.

Level achieved till T10. BP fell as far as 72/42 mmHg, which was treated with 12 mg Mephentermine. After the application of Mephentermine, the patient's blood pressure was raised to 108/60 mmHg. The operation lasted two and half hours, and approximately 350 ml of haemorrhage occurred during the surgery Inj. Fentanyl 50 mcg given through the catheter and the catheter was removed.

## Discussion

Leprosy is a multisystemic disease which involves peripheral neuropathy and other organ involvement. Neuropathy leads to myopathy, which causes plantar ulceration with numbness, foot drop and joint deformities.

A cardiovascular involvement of leprosy was mentioned in numerous reports. It may cause ECG changes. It was reported that heart rate and disorders of the response to the standing blood pressure could develop in patients with lepromatous leprosy.<sup>7</sup> Mitra et al. summarized the systemic changes and anaesthetic approach and proposed a checklist in patients of leprosy as follows: deterioration myocardial contractility of the heart and changes such as ischaemia in the heart; a hyper reactive heart rate and deterioration in blood pressure response, sudden cardiac death and cardiac function changes due to various drugs and possible intubation and extubation.

The careful implementation of spinal and epidural anaesthesia is emphasized in patients with leprosy for a long time because of increased hypotension and the incidence of urinary retention.<sup>4</sup> Neurologic deficits can be encountered after nerve blocks or regional anaesthesia as well.<sup>3</sup> Heppenstall et al.<sup>2</sup> reported a successful combined spinal epidural anaesthesia application for an emergency caesarean in a patient with lepromatous leprosy. We applied continuous spinal anaesthesia on the grounds that urinary retention, sexual impotence, orthostatic hypotension and the evaluation of autonomic function were considered normal.

## Conclusion

Appropriate assessment before anaesthesia and preparation are important in the management of anaesthesia of patients with leprosy. Regional anaesthesia can be used as an alternative patients without autonomic neuropathy and with a suspicion of systemic involvement and with difficult intubation.

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