Case Report

A Safe Alternative in Neurofibromatosis for Lower Limb Surgeries: Combined Femoral and Sciatic Nerve Block

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ABSTRACT

Neurofibromatosis (NF) is a neurogenetic disease with multiple systemic involvement. In this case report we describe the successful management of a patient with NF posted for lower limb wound debridement with multiple neurofibromas over the back and face causing difficulty in spinal anesthesia and general anaesthesia. Combined femoral and sciatic nerve block was used as a safe alternative anaesthetic approach.

Keywords: Regional blocks, Safe alternative, Von recklinghausen disease

CASE REPORT

A 66-year-old elderly gentleman presented to the tertiary care centre with a history of road traffic accident following which he developed an open, contaminated wound of size 15×5 cm over the dorsum of the right foot. He was posted for wound debridement. On pre anesthetic evaluation, he was found to have NF with multiple neurofibromas over the back [Table/Fig-1] which made spinal anesthesia impossible. Neurofibromas over the face was causing difficulty in mask ventilation [Table/Fig-2]. On further evaluation, he was found to have low cardiac reserve with a metabolic equivalents (METS) of 3 and New York Heart Association (NYHA) grade III dyspnoea. ECHO showed an ejection fraction of 32%, with severe left ventricular dysfunction, akinetic anterior and lateral walls, severe mitral stenosis with moderate mitral regurgitation.The blood investigations revealed a normal platelet and coagulation profile, and hemoglobin of 11.6. The electrolytes, blood sugar levels and chest X-Ray were also within normal limits.With this background history and examination, regional block (combined femoral and sciatic nerve block) was planned for this surgery.

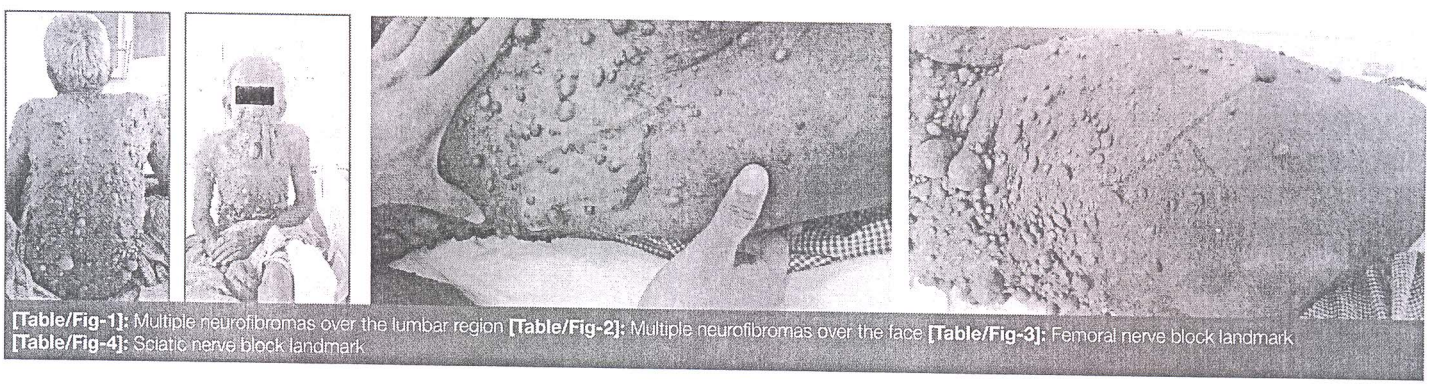
In the preoperative room, one 18G i.v. cannula was secured on the hand. Inside the operation theatre, vitals were recorded. Pulse rate was 68/min, blood pressure 136/84 mmHg and SpO2 was 96%. Premedication with midazolam 2mg ten minutes prior to the procedure was given.Oxygen was supplemented via face mask at 5L/min. Nerve stimulator was made use of for femoral and sciatic nerve block.Femoral nerve block was given with 8mL of 2% lignocaine with adrenaline and 7 mL of 0.5% bupivacaine after confirming by the patellar twitch [Table/Fig-3]. Adequate analgesia was achieved after 15 minutes. Motor blockade was ascertained by the inability of the patient to move the toes.Then the patient was repositioned laterally to perform sciatic block with the classical posterior approach. 8 ml of 2% lignocaine with adrenaline and 7mL of 0.5% bupivacaine was injected into the sheath of sciatic nerve [Table/Fig-4]. The patient was comfortable throughout the surgery and the surgery was uneventful. Postoperative vitals were stable. The block provided postoperative analgesia for four hours.

DISCUSSION

Neurofibromatosis is quite common with a prevalence rate of 1 in 5000 among the general population [1]. Anesthesia for NF patients can be challenging as it has multi system involvement and needs proper systemic evaluation. Discrete neurofibroma scan occur anywhere along the airway like tongue and larynx. This may lead to distortion or obstruction of the airway and may cause difficulty in intubation and even mask ventilating the patient [2,3]. NF can cause hypertrophic subaortic stenosis and outflow obstruction of the heart [4]. These patients with severe fixed cardiac output state are at a higher risk when sympathetic system is stimulated during laryngoscopy and intubation.

Subarachnoid block can be extremely difficult in a patient with NF; as neurofibromas close to the needle puncture site can limit the safety of the procedure. Epidural anaesthesia is often considered as contraindicated because neurofibromas may involve spinal cord and nerve roots [5]. It may be associated with vertebral anomalies like kyphoscoliosis which makes ubarachnoid block difficult [6].

The regional anesthesia technique using a combined femoral and sciatic nerve block is often considered a safe anaesthetic technique for surgeries involving the lower limb [7,8].



[Table/Fig-1]: Multiple neurofibromas over the lumbar region **[Table/Fig-2]:** Multiple neurofibromas over the face **[Table/Fig-3]:** Femoral nerve block landmark **[Table/Fig-4]:** Sciatic nerve block landmark

CONCLUSION

The combination of femoral and sciatic nerve block can provide ideal conditions for the lower limb surgeries. It can be used successfully as an alternative to subarachnoid block and general anesthesia in cases of neurofibromatosis.

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