



FOOT DROP AFTER SPINAL ANAESTHESIA FOLLOWING EMERGENCY APPENDECTOMY

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ABSTRACT

Spinal anesthesia is the preferred anesthetic technique for cesarean section. Neurological complications are very rare and often transient after spinal anesthesia. A 11-year old male child present with pain abdomen in emergency department and underwent emergency appendectomy on 12-07-2019. During operation spinal anesthesia was induced. On 15-07-2019 patients was discharged from hospital. Patient revisited Neurology OPD with complaints of Foot Drop on 31-07-2019. Patient investigated with MRI and Nerve Conduction Studies. On MRI was found diffuse disc bulge at L3, L4, L5 level causing bilateral neural foramina narrowing and in nerve conduction study was found neuropathy of left peroneal and sural nerves. Patient was treated conservatively. Foot drop is a neurological disorder, which occurs following natural childbirth and spinal anesthesia due to direct needle trauma or local anesthetic toxicity. This complication is transient and usually resolves within a few days.

KEYWORDS : Spinal, Foot drop, MRI

INTRODUCTION

Neurological complications following regional anesthesia are uncommon. The prevalence of these complications is estimated to be 0–36 per 10,000 epidural anesthesia cases and about 35 per 10,000 spinal anesthesia cases.^{1,2} These complications occur in 20% of postpartum women, with only 0.2% being clinically significant.³ Generally, a few neurological complications are reported after cesarean section.⁴ Subarachnoid block is a common and safe method for the delivery of the anesthetic.

Foot drop arises from lumbosacral trunk injury and damage to the common fibular nerve. The symptoms of this neurological disorder, which often occurs in mothers of short stature with fetal macrosomia, include unilateral movement disorders of the ankles with sensory impairment or paresthesia; however, this type of complication is rare after cesarean section.⁷ Herein, we present a case of foot drop following spinal anesthesia for emergency appendectomy.

Case report

A 11-year old male child present with pain abdomen in emergency department and underwent emergency appendectomy on 12-07-2019. During operation spinal anesthesia was induced. On 15-07-2019 patients was discharged from hospital. Patient revisited Neurology OPD with complaints of Foot Drop on 31-07-2019. Patient investigated with MRI and Nerve Conduction Studies. On MRI was found diffuse disc bulge at L3, L4, L5 level causing bilateral neural foramina narrowing and in nerve conduction study was found neuropathy of left peroneal and sural nerves. Patient was treated conservatively.

DISCUSSION

Spinal anesthesia is commonly used for appendectomy. The most common side effects of this method include hemodynamic changes, nausea and vomiting, back pain, and headache. Neurological complications following spinal anesthesia are rare and transient, with a prevalence of about 3.5%.¹ So far, rare cases of permanent neurological complications have been reported. The most common causes of these complications include direct needle trauma and local anesthetic-induced neurotoxicity.

Foot drop is normally associated with common peroneal nerve damage, radiculopathy, relative sciatic nerve lesions,

lumbosacral lesions, or cauda equina syndrome.⁵ Other causes include epidural hematoma, epidural abscess, meningitis, and anterior spinal artery syndrome. In a long-term retrospective study, 17 out of more than 10,000 patients with spinal blockade had permanent neurological complications for up to 1 year.⁶

Neurological complications following spinal anesthesia are due to direct needle or catheter trauma, besides direct intraneural injection of the local anesthetic. These complications may develop as radiculopathy of a single nerve root and are often transient.⁷

In one study, the prevalence of neurological complications was nearly one in 1,000 cases.⁷ Moreover, in a case report, neurological complication was seen in knee replacement surgery after combined spinal and epidural anesthesia. Pain and paresthesia were attributed to the needle insertion, not drug injection.⁸

Differential diagnosis of foot drop should be performed to detect complications of the central and peripheral nervous systems by conducting neural and EMG evaluations, as well as MRI studies, to investigate space-occupying lesions. Intense and long-term hemodynamic changes are among the factors, which cause spinal cord ischemia and spinal artery thrombosis, involved in neurological complications. In the present case, no specific hemodynamic changes were observed during surgery or spinal blockade. In some studies, a long-lasting lateral position was the cause of sciatic neuropathy.^{9,10} But in our report, surgery lasted less than half an hour, and the patient was not in the lateral position for a long time.

CONCLUSION

Foot drop is a neurological disorder, which occurs following natural childbirth and spinal anesthesia due to direct needle trauma or local anesthetic toxicity. This complication is transient and usually resolves within a few days.



Fig 1. Patient presented with foot drop

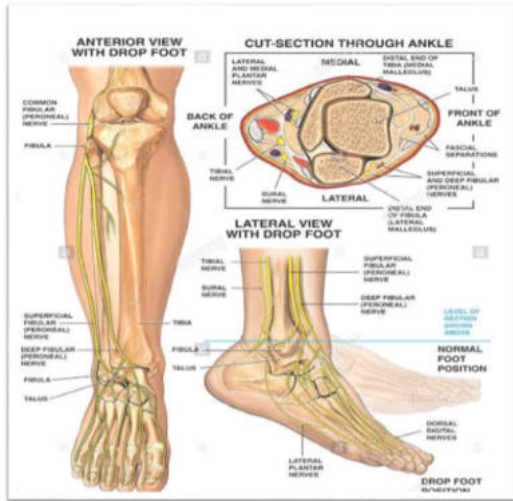


Fig 2. Anatomy of Knee joint

REFERENCES

1. Brooks H, May A. Neurological complications following regional anaesthesia in obstetrics. *BJA CEPD Rev.* 2003;3(4):111-114.
2. Rorarius M, Suominen P, Haanpää M, et al. Neurologic sequelae after caesarean section. *Acta Anaesthesiol Scand.* 2001;45(1):34-41
3. Scott DB, Tunstall ME. Serious complications associated with epidural/spinal blockade in obstetrics: a two-year prospective study. *Int J Obstet Anesth.* 1995;4(3):133-139.
4. Horlocker TT. Complications of spinal and epidural anesthesia. *Anesthesiol Clin North America.* 2000;18(2):461-485.
5. Reynolds F. Damage to the conus medullaris following spinal anaesthesia. *Anaesthesia.* 2001;56(3):238-247.
6. Dripps RD, Vandam LD. Long-term follow-up of patients who received 10,098 spinal anesthetics: failure to discover major neurological sequelae. *J Am Med Assoc.* 1954;156(16):1486-1491.
7. Nirmala B, Kumari G. Foot drop after spinal anaesthesia: a rare complication. *Indian J Anaesth.* 2011;55(1):78-79.
8. Uzunlar H, Duman E, Eroglu A, Topcu B, Erciyas N. A case of "foot drop" following combined spinal epidural anesthesia. *Int J Anaesthesiol.* 2003;8 (1): 11340.
9. Roy S, Levine AB, Herbison GJ, Jacobs SR. Intraoperative positioning during cesarean as a cause of sciatic neuropathy. *Obstet Gynecol.* 2002;99(4): 652-653.
10. Postaci A, Karabeyoglu I, Erdogan G, Turan O, Dikmen B. A case of sciatic neuropathy after caesarean section under spinal anaesthesia. *Int J Obstet Anesth.* 2006;15(4):317-31