



## Case Report

# Anesthetic management for a cesarean section in a parturient with huge vulvar and lower limbs elephantiasis: a case report

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### Abstract

Elephantiasis is caused by accumulation of lymph in soft tissues due to long standing lymphatic obstruction. Elephantiasis of female external genitalia is very rare and its association with limb elephantiasis is also quite very rare. A 20 years old, primigravida patient with 38 weeks' gestation presented with massive swelling of lower limbs along with vulvar edema posted for emergency cesarean section diagnosed as elephantiasis of lower limbs and vulva which is usually rare and has

not been reported yet. Elephantiasis in pregnancy poses difficulty for an anesthesiologist while providing neuraxial anesthesia to such a patient. We report the anesthetic management of a primigravida patient with both vulvar and lower limbs elephantiasis posted for emergency cesarean section.

**Keywords:** Anesthesia, cesarean section, neuraxial blockade, patient positioning, vulvar elephantiasis

### Article History

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### Introduction

Elephantiasis is characterized by long standing lymphatic obstruction which may lead to swelling of soft tissues due to accumulation of protein rich interstitial fluid giving rise to firm, non-pitting and irreversible edema.<sup>1,2</sup> Elephantiasis is usually a late manifestation of lymphatic obstruction of filarial origin however it may be tubercular or idiopathic. The various promoting factors of lymph stasis including trauma, infection, obesity or inflammatory disorders were also reported for the development of localized elephantiasis.<sup>2-4</sup> The most common sites involved are upper limbs, lower limbs and external genitalia. The elephantiasis of female genitalia is extremely uncommon and usually aggravated by pregnancy. There may be accumulation of lymph leading to massive

swelling and gross enlargement of limbs and rarely external genitalia.<sup>3-8</sup> So we report a case of elephantiasis with massive swelling of lower limbs along with vulvar involvement that may pose difficulty in anesthetic management for a patient posted for emergency cesarean section.

### Case Report

A 20 years old, 70 kg primigravida female patient with 38 weeks gestation presented in operating room with massive swelling of lower limbs along with vulvar edema posted for emergency caesarean section. The patient had undergone detailed pre anesthetic evaluation along with history of development of this huge swelling. She first noticed the swelling in her right labial region around two years back that was increasing slowly in its size and

the size of swelling had increased more after the patient became pregnant and finally achieved the present size of 15 × 8 × 10 cms that was non tender, irreducible with hardening and thickening of the overlying skin showing rugosities. (Figure 1) Similarly the swelling of lower limbs aggravated during the pregnancy and there was gross massive swelling of both lower limbs near term that was firm, non-pitting in nature along with thickening and hardening of overlying skin. (Figure 2) This case was diagnosed as elephantiasis of lower limbs and vulvar edema which is usually rare and with unknown etiology.



Figure 1.

Figure 2.



Figure 1 and 2: Vulvar and lower limbs elephantiasis

The patient was unable to walk since the swelling of lower limbs become huge and hampered her routine activities too. Her menstrual history was normal. All routine investigations including complete blood count, hemoglobin, blood sugar, serum urea and creatinine, serum electrolytes, urine examination, coagulation profile were within normal limits. There was no history of any significant co-morbidity apart from this swelling. The baseline vital parameters including heart rate (HR),

non-invasive blood pressure (NIBP), electrocardiogram (ECG) and oxygen saturation (SpO<sub>2</sub>) were attached and noted. The baseline parameters recorded were, HR- 68/min, NIBP- 116/74, and SpO<sub>2</sub>- 99% on air.

As the patient had huge swelling of lower limbs and vulvar edema, the patient was planned to give spinal anesthesia in sitting position by keeping her both legs apart. After explaining the procedure to the patient, patient's back was painted and draped in sitting position and the patient's legs and back were supported by another person to maintain the spine curvature and flexion. The lumbar puncture was done at L4-L5 interspace using 25 G quincke type spinal needle and it required two attempts as the patient had swelling in her back too. Inj. bupivacaine 0.5% heavy 10 mg (2 ml) was given after careful negative aspiration, the patient was laid supine with wedge under right hip and no tilt was given. A sensory blockade of T4 was achieved and surgeon was allowed to proceed and a live 2.6 kg baby was delivered with immediate cry. The intraoperative and postoperative period remained uneventful.

#### Discussion

In tropical and subtropical countries, filariasis, a parasitic infection, is most common for development of lymphedema and further elephantiasis leading to progressive limb or external genitalia deformity.<sup>5-8</sup> The largest number of cases of filariasis occur in India where over 300 million people live in endemic zones and these areas are situated mainly along the sea coast and along the banks of large rivers spreading the infection usually in all states except the north-west region. In endemic countries approximately 10% of women can be affected with lymphedema which may be aggravated by other factors.<sup>2</sup> So the anesthesiologist needs to be aware of such lymphatic disorders which may have relevance to anesthesia which requires careful planning for further management. In pregnancy, the increased intraabdominal pressure may lead to development of elephantiasis.<sup>1</sup> Elephantiasis in pregnancy poses difficulty in normal vaginal delivery as well as neuraxial blockade for cesarean section due to difficulty in proper patient positioning especially left lateral position as the patient may have inadequate spinal flexion due to either vulvar or limb swelling.<sup>3</sup> In our case, the patient had both vulvar edema along with massive swelling of lower limbs which did not allow us for proper left lateral position as the lower limbs could not be manipulated for proper knee chest position associated with vulvar edema. So we planned for neuraxial blockade in sitting position by placing both legs apart simultaneously supporting her back and legs by another person for successful block. The patient was laid supine with no tilt to avoid high spinal anesthesia due to massive swelling of lower limbs with increased intraabdominal pressure.

We highlighted the fact that our patient had both vulvar and lower limbs elephantiasis which is quite very rare in combination and had not been reported yet in previous literature. We also highlighted about the anesthetic implications for neuraxial blockade in a patient having both vulvar and limb elephantiasis which required proper preanesthetic evaluation and positioning before and after giving spinal anaesthesia.

#### Conclusion

We concluded that the proper preanesthetic evaluation including history, relevant investigations, proper patient positioning both before and after giving neuraxial anesthesia with proper explanation to the patient about the procedure played a key role in successful management of such case by an anesthesiologist.

**Informed consent:** An informed consent was obtained from the patient for publication of the report without disclosing his/her identity.

**Conflict of interest:** The authors have filled the ICMJE conflict of interest form and have nothing to declare.

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