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Case Report

A Case of Cervical Schwannoma Posted for Emergency LSCS with Sub Arachnoid Block

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ABSTRACT

Cervical Vagal Schwannoma is a rare, slow-growing nerve-sheath tumour often associated with neurofibromatosis types I and II, both autosomal dominant disorders. Though these tumours are typically benign, but present with unique challenges in parturients, especially concerning airway management and selection of appropriate anaesthetic techniques. In this case, a 25-year-old pregnant female, presented at 37.6 weeks for an emergency lower segment caesarean section with a history of a Cervical Schwannoma & no other comorbidities, Airway examination MPC grade III. Due to the absence of intradural extension of the tumour, limited neck movement and reduced mouth opening, subarachnoid block was chosen over general anaesthesia. The surgery was uneventful, with slight autonomic dysreflexia managed intraoperatively. The patient delivered a healthy baby, and the postoperative course was stable with no neurological deficits. This case highlights importance of thorough preoperative neuroimaging and careful anaesthetic planning in managing pregnant patients with Schwannomas to minimize complications.

KEYWORDS

• Cervical Vagal Schwannoma • LSCS • Anaesthesia • Spinal • Epidural, dysreflexia

KEY MESSAGES

(Provide appropriate messages of about 35-50 words to be printed in centre box): Cervical Vagal Schwannoma is a rare, slow-growing nerve-sheath tumour often associated with neurofibromatosis types I and II, both autosomal dominant disorders.

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Though these tumours are typically benign, but present with unique challenges in parturients, especially concerning airway management and selection of appropriate anaesthetic techniques.

INTRODUCTION

Cervical Vagal Schwannoma is a rare, slow growing tumour, is a nerve sheath tumour, seen in 20-50 years of age with no sex predisposition, can be associated with Type I or Type-II neurofibromatosis, an autosomal dominant neurogenetic disorder, characterised by presence of typical skin lesions, eye lesions of variable and localised forms either in the central nervous system or in the path of peripheral nerves.1

These are benign slow-growing tumours showing gradual onset of symptoms, with a natural history of 6.7 ± 2.7 years. 2 It is described by the presence of schwannomas, meningiomas, ependymomas, neurofibromatosis lesions, and ocular abnormalities. It's incidence being 1 in 33,000 people worldwide. Cervical schwannomas account for 63% of all spinal schwannomas (1.1%). 3 Pregnancy promotes the growth of preexisting intracranial tumors, and can accidentally reveal an undiscovered tumor. 4 Schwannomas are benign neoplasms with varied neurological phenotypes, including severe, intractable pain, nausea vomiting. The major anaesthetic concerns in patients with Schwannoma with other associated syndromes are the presence of macroglossia, macrocephaly, specific mandibular abnormalities, cervical spine involvement contributing to difficulties in airway management. Dural or spinal extension of the tumour can cause increased intracranial tension (ICT) contraindicating sub arachnoid block. Hence, radiographic imaging of head and neck preoperatively is pivotal in these patients in order to avoid intraoperative and postoperative complications during laryngoscopy and tracheal intubation like spinal cord injury (cervical vertebral involvement), obstruction to vascular outflow, quadriplegia, autonomic dysreflexia, Horner's syndrome. Patients presenting with quadriparesis may worsen into quadriplegia due to sudden compression of the intradural tumour during positioning of the patient while intubating or accidental intradural puncture during epidural anaesthesia (causing herniation of brain). Aortocaval compression which is common in parturients can be prevented with the left lateral tilt of the patient by placing a wedge under the right hip. Baroreceptors located in the carotid sinus can be stretched due to sudden or extreme neck extension may predispose to autonomic dysreflexia which manifests as an uncontrollable transient bradycardia and increase in blood pressure of 20 mm Hg or more.

Choosing the mode of anaesthesia in emergency situations becomes challenging in such cases. The choice of anaesthesia was the subarachnoid block in our case. There was no contraindications for the same as there was no intradural extension of the cervical lesion and general anaesthesia also had its limitations due to limited range of neck movement, and the risk of autonomic hyperreflexia and unanticipated difficult intubation.

CASE REPORT

A 25-year-old female (weighing 55 kg, height 1.5 m, BMI- 24.4 kg/m2) G2P1L1 who had previous one lower segment caesarean section (LSCS) 5 years back, details unavailable, presented at 37.6 weeks of pregnancy with scar tenderness in pre labour, posted for emergency lower segment cesarean section (LSCS). Patient had right sided neck swelling since childhood. The relatives noticed increase in size during the last pregnancy. After which the patient was evaluated and diagnosed with Cervical Schwannoma. Patient also gives history of right hemiparesis in childhood. No medical opinion was taken for the same. Currently power was 5/5 is bilateral upper and lower limbs with no focal neurological deficit. MRI brain and spinal cord revealed right Vagal Schwannoma measuring 3.5*4.8*6.3 cm in right carotid triangle with post contrast enhancement displacing right Internal Jugular Vein (IJV) and right Common Carotid Artery and cervical segments of Right Internal Carotid Artery anteriorly. Patient was advised surgery but denied. Preoperative examination was done. Nil by mouth (NBM) status checked, Mallampatti classification assessed (MPC III) in supine position, restricted mouth opening noted with only two fingers wide, consent noted. The baseline parameters were found to

be SpO2—99% at room air, BP—107/90 mm Hg, heart rate—110 bpm, without oedema of the lower limb. The obstetric examination revealed scar tenderness with active uterine contractions. The patient was shifted to the operating room in the left lateral position and multipara monitors were connected. Baseline vitals were recorded and found to be within normal limits. A 20G intravenous cannula was secured in the left hand. Oxygen was delivered through Hudson mask at 6 L/minute. Single prick Sub Arachnoid Block with 25 G Quincke needle was given with minimal neck flexion at L3-L4 space with Inj. Bupivacaine 0.5% Heavy 1.9 cc with Inj. Dexmedetomidine 10 mcg as additive. Patient's head was tilted towards left to prevent stimulation of the right Cervical Schwannoma. A bolster was placed below right hip to provide left lateral tilt. Surgery was commenced. Intraoperatively, there was slight autonomic dysreflexia with heart rate fluctuating between 70-130 bpm and blood pressure was within normal limits. Adequate relaxation of the surgical field was achieved with surgeon satisfaction. A single live, female baby was delivered which cried at birth with activity, pulse, grimace, appearance, respiration (APGAR) scores of 8/10 and 9/10 at 5 and 10 minutes, respectively. The postoperative period was uneventful with VAS of 3-4 and haemodynamic parameters were stable. The patient was shifted to Critical Care Unit (CCU) and was observed for any neurological deficit for 48 hours post operatively and followed up till the discharge of the patient. Neurosurgery and Neurology references were done to rule out any post-operative complication and any other sign or symptoms. Patient was also advice for the removal of the tumour.

DISCUSSION

Cervical Vagal Schwannoma is an extremely rare, and slow growing tumour.

It can be presented as a part of NF1 or NF2 involving various organ systems, including the spinal cord which plays a vital role in the choice of anaesthetic technique. Which is chosen based on the clinical findings in various scenarios.

If asymptomatic, schwannomas may be followed with serial MRI given their usual benign behaviour. Symptomatic or radiographically enlarging tumours should undergo maximal safe resection[5]

In obstetrics, sub arachnoid block is the choice of anaesthesia in LSCS. In obstetric patients, Epidural Analgesia is the most effective method of pain relief during labour analgesia. Most of the tumours are found in the intervertebral foramin and thus carries an increased risk of bleeding, haematoma formation, and increased intracranial pressure due to accidental puncture of dura mater.[4,6]

Therefore, brain and spinal imaging is advisable before giving neuraxial block.[7,8]

Providing effective analgesia when regional anaesthesia is contraindicated in the parturient is a challenge for the anaesthesiologists. Neuraxial anaesthesia reduces the exposure of neonate to anaesthetic medications with a better APGAR score, its improves postoperative pain and allows the mother to be with the child immediately after birth. Though risk of general anaesthesia has been reduced due to advanced airway techniques and safer practices. Estimated mortality from pulmonary aspiration is 5% to 15%. Rapid sequence induction can be done with Inj. Propofol and Inj. Rocuronium followed by endotracheal intubation. Inhaled nitrous oxide or intravenous opioids like Fentanyl can be given after fet al. extraction.[1] The use of Inj. Remifentanil, a short acting opioid that is quickly metabolized, is being increasingly popular in obstetric patients, and its efficacy is still doubtful in obstetrics patients.[9,10]

In above case scenario, the tumour was confined in the cervical region. Our patient was also a high risk of autonomic hyperreflexia which may turn fatal to the patient, single prick sub arachnoid block was preferred over general anaesthesia and epidural anaesthesia. Several cases of post-epidural haematoma have also been observed. Providing satisfactory and effective analgesia to the parturient is a real challenge for the anaesthesiologist in such cases. However, in the absence of spinal imaging, general anaesthesia is the technique of choice.

CONCLUSION

Performing anaesthesia with a rare case of cervical schwannoma is very challenging. It becomes even more difficult in pregnant females. There have been not many cases documented for better understanding of the anaesthesia implications in such cases. If the

spinal status is unknown, general anaesthesia is the technique of choice. In above mentioned case scenario, alternative techniques are to be evaluated precisely based on the need and safety of the patient. Each case should be assessed properly contemplating the uniqueness of each case scenario. Preoperative or recent neuroimaging of the brain and spinal cord should be performed for assessing the neurological involvement of the tumours. Taking this case into consideration, there was no neural involvement, sub arachnoid block was the best suitable method of choice in view of the clinical presentation of the patient.

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