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Case report

Anaesthetic management of a case of schwannoma with intraoral extension

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Abstract Schwannoma is a benign nerve sheath tumour. This benign lesion frequently occurs in the soft tissues of head and neck region and has various complicated growth patterns. These patients can present a challenge to the anaesthesiologist due to intraoral extension, leading to difficult mask ventilation and intubation. We report a 16 year old male with mandibular nerve schwannoma with intraoral extension. Intraoral examination revealed a diffuse swelling in the left side of soft palate with deviation of uvula to right side. He was advised gargles with 4 ml of 2% xylocaine viscous and 2–3 puffs of 10% xylocaine spray done in oral cavity and oropharynx. Check laryngoscopy revealed Cormack and Lehane grade 1 view. Patient was intubated using standard induction technique and successfully managed

1. Introduction

Schwannoma also known as Neurilemmoma is a benign neoplasm of the Schwann's cells surrounding the nerves. This benign lesion frequently occurs in the soft tissues of head and neck region and has various complicated growth patterns [1,2]. Intraoral schwannomas are rare. These patients can present a challenge to the anaesthesiologist due to intraoral extension, leading to difficult mask ventilation and intubation. We report a 16 year old male of mandibular nerve schwannoma with intraoral extension. The perioperative management of this patient is discussed.

2. Case report

A 16 year old male weighing 60 kg presented to our institute with a four year history of swelling behind the left ear. This had been progressively increasing in size involving left cheek and oral cavity (Fig. 1). He complained of headache, hearing loss and numbness on left lower face. There was no history of nausea, vomiting and diminishment of vision. On examination, a firm swelling was present on the left cheek extending behind the ear and overlying skin was normal. Preoperative investigations revealed haemoglobin to be 11 gm%, bleeding time 2 min 10 s, clotting time 4 min 15 s, blood urea to be 16 mg%, blood sugar 91 mg%, serum sodium 145 meq/l, and serum potassium 4.5 meq/l. Computed tomographic scan showed a large hypodense mass in the course of mandibular nerve extending from left middle cranial fossa through foramen ovale into left parapharyngeal space. It caused splaying

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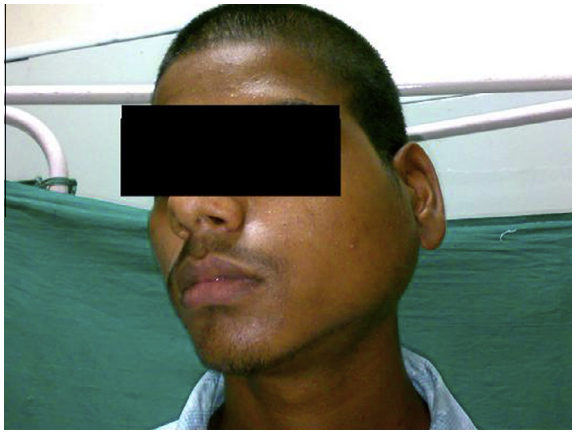

Figure 1 Patient showing swelling of cheek and ear.

of medial and lateral pterygoid plates and also thinning and pushing of left ramus of mandible. Magnetic resonance imaging revealed a hypointense signal on T1-weighted images and heterogenous hyperintense on T2-weighted images. A large oval, well circumscribed mass ($4.2 \times 6.2 \times 8.2$ cm) is present just inferior to left cavernous sinus passing through widened foramen ovale and extending to neck on left side between medial and lateral pterygoid muscles along the course of mandibular nerve. No invasion to brain parenchyma and homogenous enhancement on CEMR. It was narrowing the airway and causing splaying and stretching of medial and lateral pterygoid muscles.

At the preoperative assessment, patient was awake and alert. The patient's heart rate was 86/min, regular and noninvasive blood pressure was 130/72 mmHg in right upper limb. A firm swelling was present on the left side of cheek and behind the ear and overlying skin was normal (Fig 1). Bilateral condylar movement was normal. On airway examination, mouth opening was 3 fingers and a swelling was present on left side of soft palate and retromolar region deviating uvula to the right side (Fig 2). Oral cavity on the left side of uvula was completely occupied by the mass. Thyromental and sternomental distances were 7 and 13 cm respectively and bilateral nares were patent.

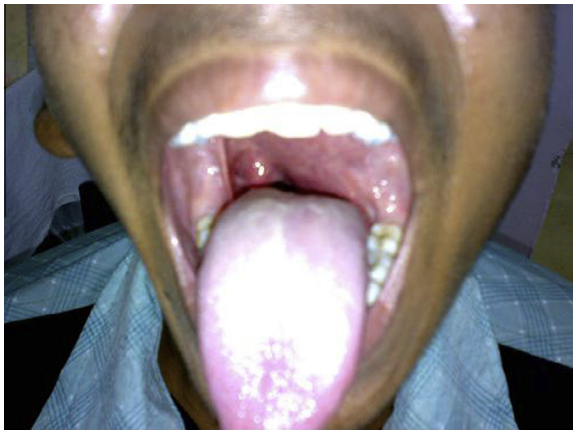

Figure 2 Intraoral extension of schwannoma with deviation of uvula to right side.

The patient was premedicated with tablet alprazolam 0.25 mg and ranitidine 150 mg on the night before surgery and in the morning two hours before surgery. Before anaesthesia a thorough preoperative examination and operating room preparation were completed including the procurement of difficult airway cart. As mass occupied the left side of oral cavity, we planned to do check direct laryngoscopy and intubation. Fibreoptic bronchoscope was kept ready in case of failure to intubate. In the operation room a 16 gauge intravenous cannula was inserted on dorsum of right hand. Standard ASA monitors including electrocardiography, non-invasive blood pressure monitor and pulseoximetry were placed on the patient. The baseline arterial pressure was 130/70 mmHg, the heart rate was 84 beats/min, the respiratory rate was 18 breaths per minute and the O_2 saturation in room air was 98%. The whole procedure was explained to the patient and informed written consent was taken. Injection of glycopyrrolate 0.2 mg was administered intravenously. 1 ml of 2% xylocaine was instilled on the tongue. He was advised to do gargles with 4 ml of 2% xylocaine viscous and 2–3 puffs of 10% xylocaine spray sprayed in oral cavity and oropharynx. Check direct laryngoscopy was done and it revealed Cormack and Lehane grade 1 view. Now, general anaesthesia was induced with morphine 6.0 mg, propofol 120 mg, oxygen 6 L/min and sevoflurane 2%. After checking for ability to ventilate, succinylcholine 50 mg intravenous was administered. Orotracheal intubation was done with 8.0 mm internal diameter cuffed flexometallic tube. Bilateral air entry checked and tube fixed. Anaesthesia was maintained with N_2O 67%, oxygen 33%, isoflurane 1% and vecuronium. The right radial artery was cannulated for monitoring intra-arterial blood pressure. Peripherally inserted central line (PICC) was put in right basilic vein. Dexamethasone 8 mg, hydrocortisone 100 mg and mannitol 20 gm were given IV in the intraoperative period. Surgery was done by dental surgeon in collaboration with neurosurgeons. It lasted for 6 h. The mass was excised completely. Vitals remained stable throughout intraoperative period and patient was extubated uneventfully at the end of surgery. He was observed for 24 h in ICU and shifted back to the ward. The histopathology including immunochemistry of the resected specimen indicated that it was a schwannoma.

3. Discussion

Neurilemmoma was first described by Verocay in 1910. He called it 'Neurinoma'. In 1935, the term Neurilemmoma was coined by Stout [3]. Schwannoma or neurilemmoma is a benign encapsulated perineural tumour of neuroectodermal derivation that originates from the Schwann cells of the neural sheath of motor and sensory peripheral nerves. The aetiology is unknown and the tumour is usually solitary, benign, smooth-surfaced and slow-growing [4].

Multiple lesions may occur in association with Von Recklinghausen's disease or schwannomatosis, a nonhereditary disease characterised by multiple subcutaneous or intradermal schwannomas together with tumours of internal organs.

Schwannomas may develop at any age, but are more common during second and third decades of life and there is no gender predilection. Schwannomas of trigeminal nerve are not rare, either intracranial or extracranial. It is the second most common site for intracranial schwannoma occurrence

after the vestibular nerve [2]. Any segment of trigeminal nerve from pons to peripheral branches can be affected. Schwannomas usually grow in meckel's cave, posterior or middle cranial fossa, cavernous sinus and frequently straddle multiple anatomical compartments [5].

The differential diagnosis includes benign lesions such as granular cell tumours, leiomyoma, lymphangioma, lipoma, lingual thyroid, and malignant lesions such as squamous-cell carcinoma, cancer of salivary glands, and soft tissue sarcoma [4]. The final diagnosis is always made after a definitive histological examination [1].

Schwannomas can present a challenge to the anaesthesiologist when they occur primarily in oral cavity or intracranial schwannomas result in intraoral extension. Anaesthesiologists are challenged by difficult airway and chances of bleeding in tumour tissue. Nasal awake fibreoptic bronchoscopic intubation is a technique of choice for management of airway in these cases. But alternative ways should be available in case of non-availability, failure and contraindication to fibreoptic intubation. Although we kept ready fibreoptic bronchoscope we decided to proceed with direct check laryngoscopy under local anaesthetic preparation as patient had good mouth opening and mallampati grade 1. In case of failure to visualise the glottis, plan was to go for fibreoptic bronchoscopic intubation.

We anticipated a difficult airway. Apart from an anticipated difficult airway, our concerns included trauma and bleeding on attempts at direct laryngoscopy and possibility of laryngospasm.

4. Conclusion

There are various ways of managing difficult mask ventilation and difficult intubation, which depends on institutional protocols and expertise of anaesthesiologist. Each and every case is unique and a method followed in one case cannot be always extrapolated to next similar case.

Conflict of interest

The authors declare that there is no conflict of interest and no money has been taken from anybody.

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