Bilateral mandibular ameloblastoma : its anesthetic management

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Abstract

Bilateral ameloblastoma of mandible is extremely unusual occurrences which present many challenges to the attending anaesthesiologist during intraoperative & postoperative period. We present one such rare case & its anesthetic management who came to our medical center for wide excision en-block with surrounding mandible.

INTRODUCTION

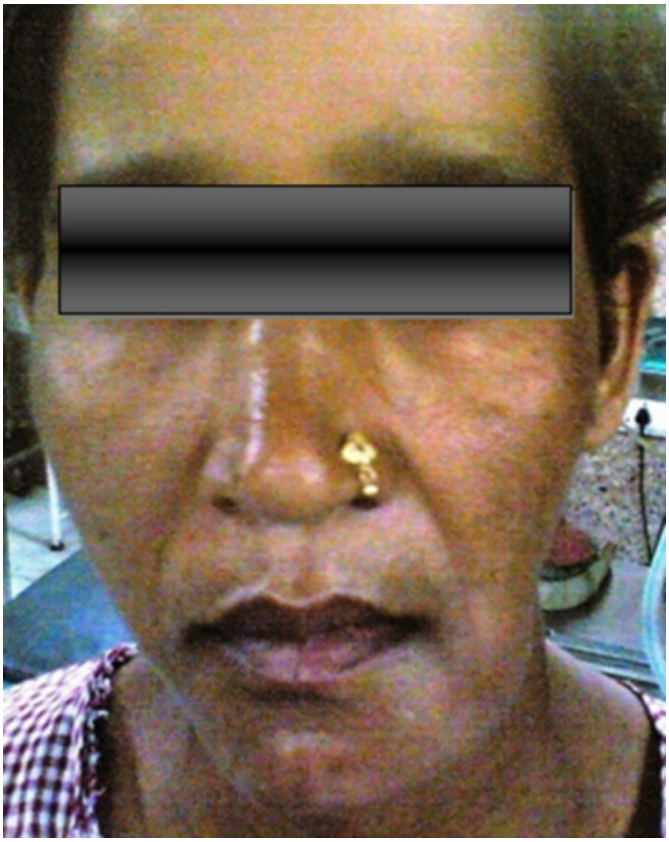
Ameloblastomas are benign, slow growing locally aggressive neoplasm which arise from either odontogenic cyst epithelium or residual epithelial rest in the remnant of enamel found over the crown of unerupted tooth. [1] Histopathologically ameloblastomas appear as a well differentiated palisading cells in various patterns like cystic, follicular, plexiform, desmoplastic, acanthomatous & granular subtypes. [2] Most common site of involvement being mandible(80%) although maxilla(20%) may be afflicted. [3] They may present as small incipient lesion detected on radiological examination or as a large tumor producing mass effect & dental malocclusion. They spead by forming pseudopod in marrow space. Consequently their margins cannot be seen distinctly. It comprise 1% of radiological jaw tumor & appear as well defined lucent area which may be either unilocular or multilocular cyst. Freqently involved site in mandible being molar-ramus region. [4] It occur over a wide age range most in third or forth decade. We describe the anesthetic management of ameloblastoma involving bilateral anterior part of body of the mandible which is extremely unusual presentation posted for wide en-block mandibular resection with 2 cm bony margin and adapting reconstruction plate & iliac bone grafting.

CASE REPORT

A 47 year female weighing 52kg presented with facial asymmetry due to hard painless swelling of left lower jaw (fig 1) which had progressed slowly over a period of 6 months duration.

Figure 1

FIGURE 1. FACIAL DISFIGUREMENT DUE TO MANDIBULAR AMELOBLASTOMA

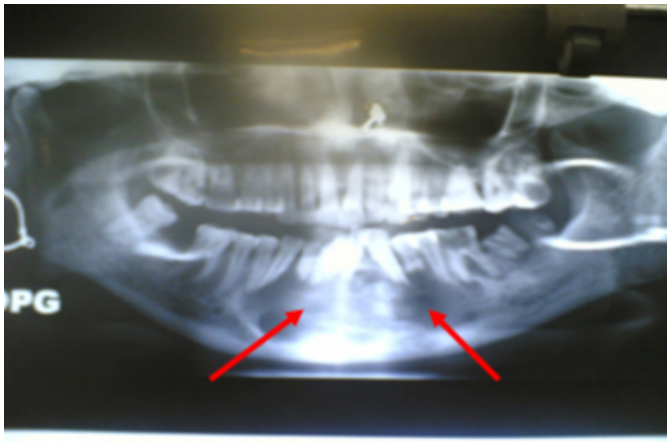


The swelling was biopsied 2 months back which diagnosed it as follicular ameloblastoma of the mandible. She was posted for wide resection of the tumour under general anesthesia. Her general physical examination did not reveal any significant abnormality & her laboratory workup was within normal range. Pre-anesthetic examination showed

mouth opening of 3cm, swelling left lower jaw with intra oral extension into the buccal area & lingual floor. Panoramic radiographic view of lower jaw revealed two well defined radiolucent area in anterior part of body of mandible (fig 2).

Figure 2

FIG 2 (PANORAMIC RADIOGRAPHIC VIEW OF MANDIBLE DEPICTING RADIOLUCENT AREAS (ARROWS) OF AMELOBLASTOMA)



On the day of surgery, she was placed supine on operation table, large bore iv line secured & connected to monitor for ECG, NIBP, $SPaO_2$ & $etCo_2$.Urinary bladder catheterized Oxymetazolin drops instilled into both nostrils. She was administered iv midazolam 2mg, glycopyrrolate 0.2mg, metoclopramide 10mg & fentanyl 100mcg. Preoxygenated with 100% O_2, induced with propofol 100mg and inhalational isoflurane 1.5% in 100% O_2 through nasal airway inserted into right nostril. Trachea was secured with preformed RAE tube #7.0 mounted over fiberoptic bronchoscope advanced through left nostril was achieved. As soon as correct tube placement was confimed by identifying tracheal ring & capnography, vecuronium 5mg given. Right subclavian vien cannulated and central venous catheter secured to monitor CVP. Anesthesia maintained with inhalational isoflurane in O_2 and air. Continuous iv infusion of vecuronium 3mg/hr & fentanyl 25mcg/hr. During operative time of approximately 5 hrs patient remained hemodynamically stable by infusing volume expander & transfusing blood for 900ml of loss.

At the end of surgery, patient remained on ventilator in ICU & extubated after regaining complete consciousness and airway reflexes. Post extubation period remained uneventful.

DISCUSSION

There are very few reported cases of anesthetic management of ameloblastomas which are locally invasive, aggressive odontogenic neoplasm of the mandible which can extend intraorally to cause airway obstruction & present many difficulties in the operating room to the attending anaesthesiologist. The growth distorts the facial contour leading to inadequate mask seal precluding proper bag-mask ventilation during induction. Also adequate jaw thrust may not be possible. More over intraoral extension of the growth may not allow insertion of laryngoscope blade, thus inability to visualise the vocal cords. Any oral airway manoeuvring may result in aspiration due to bleeding from mucosa overlying the growth.

We chose fiberoptic nasal intubation in this case to secure airway as it is less traumatic, keeps airway clean by applying suction during advancement of endotracheal tube & oxygen can be administered at the same time during the procedure. Other methods of securing airway include blind nasal intubation, use of lightwand, transtracheal jet ventilation tracheostomy are more traumatic to the patient. [5]

In the immediate postoperative period the ability to maintain patency of airway is challenged by newly reconstructed mandible with bilateral insufficient attachment of muscle weakens the floor of the mouth predisposing to tongue fall. [6] Also jaw thrust can not be applied effectively. Edema of airway may compound to the above problems. In order to avoid above mentioned complexity we preferred to keep our patient intubated in the post operative period Peroral intubation in the perioperative period should never be attempted. Tracheostomy is safer option if oral edema is significant & possibility of tongue fall persists in the postoperative care.

This case is unique in the sense that the growth had involved the anterior part of the body of the mandible on both sides leading to resection of symphysis & parasymphysis region where the genioglossal muscle attach to the genial tubercle on the lingual surface of the mandible. [7]

To conclude it is prudent to anticipate & accept the airway challenges possed by en block removal of mandibular ameloblastomas & newly reconstructed mandible.

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