



ORIGINAL RESEARCH PAPER

Surgery

LARGE MAXILLARY CYST DECOMPRESSION, TWO CASE REPORTS

KEY WORDS: Mandibular cyst; decompression; bone regeneration

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ABSTRACT

Maxillary odontogenic cysts frequently appear as asymptomatic intra-bony inflammatory lesions, sometimes reaching large dimensions. Both clinical and anatomopathological approach must be performed in the differential diagnosis in order to eliminate oncogenic origin. The classical surgical approach for these situations is, among others and depending on the cyst type, enucleation. This can be performed with aggressive bone curettage or with physical or chemical additional treatments of the area, such as cryotherapy or Carnoy solution application. Specially in large dimension lesions or when involving noble structures, marsupialization is also an important option. It consists in the creation of a surgical opening of the pathological cavity to allow decompression and with it, shrinkage of the lesion, and consequent bone regeneration in that area. This is kept during a limited period, so that a definitive approach can be attained later with an easier surgical technique, with fewer risks and/or less morbidity for the patient. Two clinical cases of large mandibular cysts are presented. The treatment approach was made initially with surgical decompression, being the area maintained open using a plastic catheter sutured to the mucosa and programmed for future enucleation.

Development

Case 1:

Presentation

A 39 years old Caucasian woman presented in a routine radiological exam radio-lucid unilocular lesion in an edentulous area between teeth 35 and 38, involving the Inferior Alveolar Nerve (IAN) with total elimination of the local cancellous bone, maintaining only the cortical portion of the mandible border.

The patient referred complete absence of signs or symptoms (no swelling, no pain, no paresthesia or other). The general medical history presented a normal report (no recent or past trauma, no chronical medication, no addictions, and no tobacco or alcoholic habits). The intra-oral exam showed a normal mucosa and no signs of the underlying lesion. No adenopathy was identified during the extra-oral exam.

As diagnostic hypotheses, odontogenic cyst, keratocyst, unilocular ameloblastoma and osteoblastoma were considered.



FIG 1 – Intra-oral aspect.



FIG 2 – Initial radiologic aspect.

Primary surgical procedure (Decompression):

After a 2ml aspiration of the lesion liquid with a 27G needle, performed to obtain a primary histological diagnosis (and eliminate the possibility of a oncological lesion), a surgical decompression approach under local anesthesia was intended and a plastic catheter was placed up to the center of the lesion and maintained with a 3/0 non resorbable suture (Silkam, BBraun, Germany). No complications occurred during the healing period, the patient was able to maintain the plastic device in its position, being instructed in proper hygiene habits and to promote the daily cleansing of the surgical wound irrigating several times at least 10ml of a 10% solution of hydrogen peroxide with a syringe (Luer Lock, Medibase, Dentaleader, France and Peróxido de hidrogénio 10%, Mifarma, Portugal).

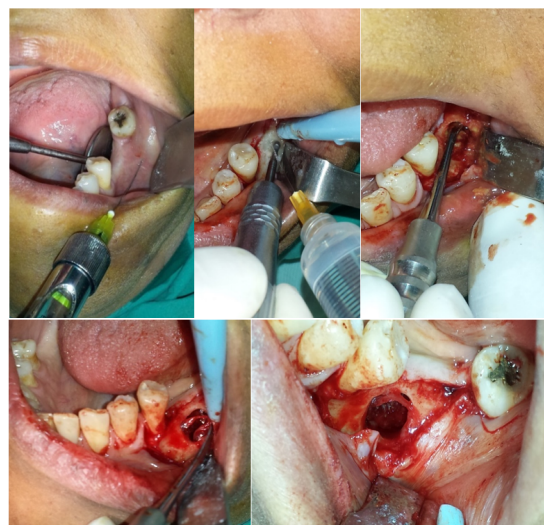


FIG 3 – Surgical procedure sequence.

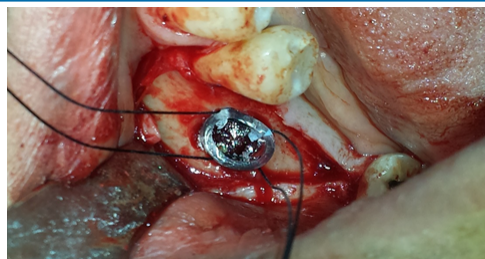


FIG 4 - Plastic catheter placement.

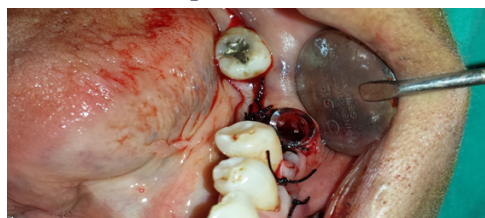


FIG 5 - Plastic catheter suture (please note the marginal positioning to avoid as possible food retention).

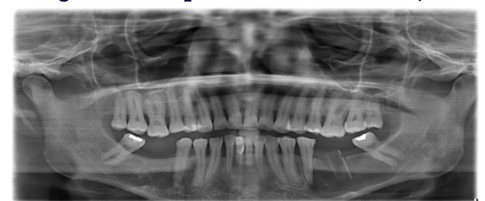


FIG 6 - Immediate post-op radiograph.



FIG 7 - 3 months follow up.



FIG 8 - 12 months control with intra oral aspect (after plastic catheter removal).

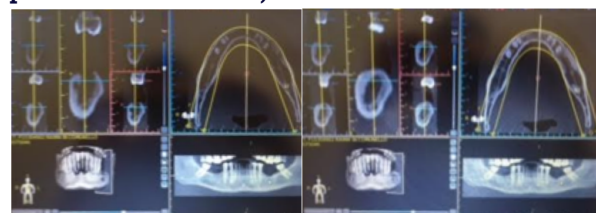


FIG 9 - Initial and 12 months post-decompression CT Scans (observe local bone remodeling and IAN involvement).

Secondary surgical procedure

After 14 months a classical and simple enucleation was performed with no risk of injuring the IAN. Clinical cure was achieved.

Case 2:

Presentation

A 48 years old total edentulous Caucasian male, reported a "strange bone swelling" in the left side of the mandible and paresthesia that causes a low intensity numbing sensation,

located in the lower left midface (mandible). In the panoramic x-ray, a 6cm radio lucid lesion was observed in the left mandible body. A CT scan showed extensive erosion of both cortical and cancellous bone and the involvement in the lesion of the IAN and the Mental Nerve. No adenopathy was identified during the clinical examination. Intra-oral exam showed signs of underlying bone expansion and low mucosal inflammation. The general medical history presented a normal report (no recent or past trauma, no chronic medication, no addictions) except for the chronic use of tobacco (more than 20 cigarettes per day) and social alcoholic habits.

As diagnostic hypotheses, we considered odontogenic cyst, keratocyst, unilocular ameloblastoma, osteoma, osteoblastoma and osteosarcoma.



FIG 10 - Initial intra-oral and radiologic aspect.

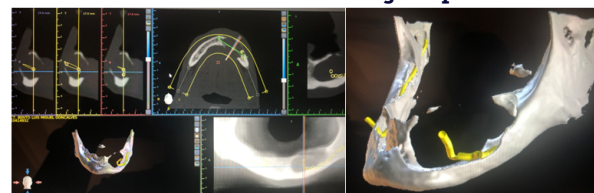


FIG 11 - Initial CT scan.

Primary surgical procedure

A 2ml aspiration of the lesion liquid with a 27G needle was performed in order to obtain a primary histological diagnosis (and eliminate the possibility of an oncological lesion). The primary histological diagnosis was "benign cyst lesion".



Fig 12 - Lesion content aspiration to perform primary histologic analysis.

A surgical decompression approach under local anesthesia was performed using a piezoelectric surgery unit (NSK Variosurg 3, Japan), allowing the isolation and preservation of part of the cyst membrane (to be also sent for histological analysis). Therefore, a partial enucleation of the lesion avoiding contact with the Nerve structures was achieved. A plastic catheter was placed up to the center of the lesion, and maintained with a non-resorbable suture (Silk, B.Braun, 3/0, Germany). No complications occurred during the healing period. The patient was able to maintain the catheter in position, was instructed in the best hygiene habits possible and to promote the cleansing of the surgical wound by daily multi irrigation with a syringe content of a 10% solution of hydrogen peroxide (Luer Lock, Medibase, Dentaleader, France and Peróxido de hidrógeno 10%, Mifarma, Portugal).



FIG 13- Surgical sequence (final saline irrigation to eliminate debris).



FIG 14 – Wound closure and catheter placement.



FIG 15 – Teaching how to promote correct hygiene through the plastic drain.

Secondary surgical procedure

A secondary surgical procedure (classical enucleation) will be performed when the outcome is considered appropriate.

CONCLUSIONS:

Large mandibular cysts may weaken the mandible and when involving noble anatomical structures as the major mandibular nerves, iatrogenic sequels such as mandibular fractures, paresthesia and/or permanent anesthesia from the lesion itself or their treatment may arise. A conservative surgical approach such as the one presented in this work has the disadvantage of 2 surgical procedures (although the first one being rather simple and less invasive) and a longer total duration of treatment. On the other hand, might significantly decrease the final post-op morbidity, facilitate the final surgery and prevent serious iatrogenic complications when compared with direct enucleation or aggressive curettage.

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