

A surgeons perspective on the treatment of cystic tumors of the jaws

Cystic tumors of the jaws, that is, the odontogenic keratocyst and unicystic ameloblastoma have drawn lot of attention owing to their unique characteristics and lack of agreement in their management.

The odontogenic keratocyst is known for its typical occurrence most often in the third molar ramus region of the mandible with or without an associated impacted tooth, most commonly in the third decade of life. It may have a unilocular or multilocular radiographic appearance with the characteristic of antero-posterior spread within the cancellous bone causing displacement of teeth. Clinical signs and symptoms appear late after the cyst has reached a large size. Histologically it is recognized to be either parakeratinized or orthokeratinized. Being classified as a cyst, it has been treated like other cysts, that is either by marsupialization or enucleation. However, it has shown a propensity to recur because of its thin and fragile lining which cannot many a times be eliminated from inaccessible areas; and the presence of multiple locules or daughter/satellite cysts which has caused difficulty in complete removal. Therefore, more aggressive treatments involving peripheral osteotomy (mechanical, wherein 2-3mm of bone rimming the cavity was removed; or chemical, wherein Carnoys solution was used for cauterization), removal of adjacent teeth, enbloc and segmental resections have been resorted to. Eventually, it was classified as a tumor and renamed the keratocystic odontogenic tumor. Proponents of aggressive treatment got an additional boost with this reclassification to defend their line of treatment. However, many surgeons using conservative treatment methods have continued to treat it by marsupialization, decompression, enucleation with open packing, enucleation with excision of overlying mucosa, enucleation with chemical cauterization, and so on. The recurrent lesions were also treated conservatively. The argument in favor of conservative treatment is that the lesion is benign and amenable to conservative treatment with minimum morbidity and no risk of malignant transformation.

In my experience of 20 years treating this cyst, decompression followed by enucleation has worked very well with a handful of recurrences in about 60 odd cases treated. The recurrent lesions were again decompressed and enucleated with favorable results. Decompression for a period of 6-9 months depending on the size of the lesion will cause regression in the size of the lesion; allowing cortical perforations to heal, relieving it of adjacent soft tissues, tooth roots, neurovascular bundle, maxillary sinus or nasal cavity

depending on its location. Also, it causes the thin lining of the keratocyst to thicken over the period of decompression and makes it more amenable to enucleation. The chances of leaving behind any remnants of the lining which is one of the main causes of recurrence, therefore gets taken care of. At the time of enucleation, the final radiographic evaluation is made and any additional locules which are present are connected to the main cystic cavity and complete enucleation is carried out. Application of Carnoys solution is carried out with adequate protection of the inferior alveolar nerve if exposed. If the lining is adherent to any adjacent tooth root, currently, we extract the tooth and ensure complete removal of the lining to prevent any chance of recurrence. (Earlier, we have had recurrences near the roots of the tooth adjacent to the cystic cavity in our enthusiasm to save the tooth). Impacted teeth associated with the cystic cavity are removed after 3-4 months of decompression, once the tooth gets up righted and there is adequate bone present at the lower border, so that the tooth can be extracted without fracturing the jaw. Leaving it for longer will cause the impacted tooth to get embedded in the regenerated bone, which will warrant removal of some of the regenerated bone to remove it. The sensation of the lips and teeth has been preserved for every patient. Of late, we are grafting the cystic cavity after enucleation for hastening the bone regeneration process and getting a better ridge form for prosthetic rehabilitation. The patients have been very compliant with this treatment as they are saved from the option of having to go for a jaw resection. They come for followup regularly, have their stents modified and are completely capable of irrigating their cystic cavity themselves after every meal and maintain good oral hygiene. These patients have influenced patients from other centers and states to seek this mode of treatment at our center. We are also presently completing a funded molecular study involving the study of biomarkers before and after decompression which will further add more evidence for this line of treatment. We already have histological evidence of the keratocyst lining getting transformed to normal epithelium. The fact that the keratocyst has been reclassified as a cyst again and the promising results with decompression followed by enucleation has made us more confident that more surgeons will be conservative in treating these cysts. These cysts do not warrant resection in my opinion as they respond very favorably to decompression. The morbidity caused by resections and the extensive rehabilitations which have a guarded success should be reserved only for malignant tumors which cannot otherwise be treated.

For Unicystic ameloblastomas, there is a consensus for conservative management of the luminal and intraluminal variants. However, resection is preferred for the mural variant as it invades the connective tissue and can therefore recur. We have been following the same protocol of decompression followed by enucleation for unicystic ameloblastomas, for all variants, with complete resolution. Histologically, although unicystic ameloblastomas still retain their features of identification after the period of decompression, they show signs of healing. We only have to ensure complete removal of the pathology with our treatment. Resection is not the only way to achieve this. It maybe true for persistent solid tumors, but not for cystic tumors. Even for solid tumors; Dredging, a procedure which involves repeated enucleation has been used to avoid resection. It only goes to show that treatment options which allow preservation of the jaw are always preferred when there is sufficient evidence to show that it is successful. Decompression makes the lesion smaller, and enucleation with peripheral osteotomy or chemical cauterization ensures complete removal. Recurrence is a chance occurrence and we should not resort to resection and its associated morbidities to prevent recurrence. A recurrent lesion should be enucleated again! Please don't sacrifice jaws to prevent recurrences of benign cysts. The quality of life of the patients should be on top of our minds when we are treating these cysts. Only malignancy leaves us with no

option but to resect. When we can eliminate these benign cystic lesions completely, conservatively; even though the treatment stretches for a period of 1 or 2 years, it is truly worthwhile to the patients, as the integrity of their jaws and most of their teeth, their appearance and their social standing is intact and they are grateful for that.

We, as surgeons should take the call judiciously as we are the ones who can influence patient choices in treatment. Where we can preserve, where just making a window into the cystic cavity can allow the course of the disease to change for the better, one should try it. Tomorrow it could be us or our children with these cysts.

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doi: 10.15713/ins.jcri.193

How to cite this article: Prasad K. A surgeon's perspective on the treatment of cystic tumors of the jaws. J Adv Clin Res Insights 2018;5:1-2.

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