Our first case is the first report of RSM associated with cutaneous lichen planus and suggests that a cutaneous examination is indicated in this setting.

In most published cases, a wait-and-see attitude was adopted because of the short duration, benignity, and painlessness of the RSM. It is always important to reassure the patient. Laser treatment was tested with good results in 1 case,[8] but the tendency to recurrence makes laser surgery of no benefit. Because inflammation is considered as the main etiology in RSM, anti-inflammatory treatment should be efficient. However, our experience with immunosuppressives in GVHD seems to contradict this hypothesis.

The diagnosis of superficial mucocele is mainly clinical, and a biopsy is rarely indicated. The present lack of knowledge concerning etiology does not offer an effective approach in avoiding recurrences.

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# Removal of a Large Odontoma by Sagittal Split Osteotomy

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Odontomas are the most common odontogenic tumors and are usually incidental findings in radiographic examination.[1] When the odontoma is small or average size, the acceptable treatment is enucleation. The problem arises with large odontomas, the removal of which involves sacrifice of large amounts of bone, potential of mandibular fracture and damage to the inferior alveolar nerve. To avoid these complications on removing large tumors in the mandible, the use of the sagittal split osteotomy (SSO) technique was introduced in 1979 by Rittersma and van Gool.[2]

The purpose of this presentation is to describe a case of a large odontoma in the molar area of the mandible that was removed via sagittal split of the mandible and to discuss the implications compared with other surgical approaches.

## Report of a Case

A 24-year-old man was referred to the Oral and Maxillofacial Surgery clinic at the Hadassah Medical Center because of recurrent pain and swelling in the right lower third molar region and right submandibular swelling. Because there were no symptoms involved until recently, the patient was not aware of the problem and had never visited his dentist.

The past medical history was within normal limits. Extraoral examination showed right submandibular lymphadenopathy, with tenderness to palpation. The intraoral examination showed inflamed soft tissue distal to the right mandibular second molar surrounding a calcified mass. The

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**FIGURE 1.** PA (*A*) and panoramic (*B*) x-ray views of the right mandibular side show an irregular calcified mass extending distal to the right mandibular second molar towards the right mandibular ramus and the lower border of the mandible.

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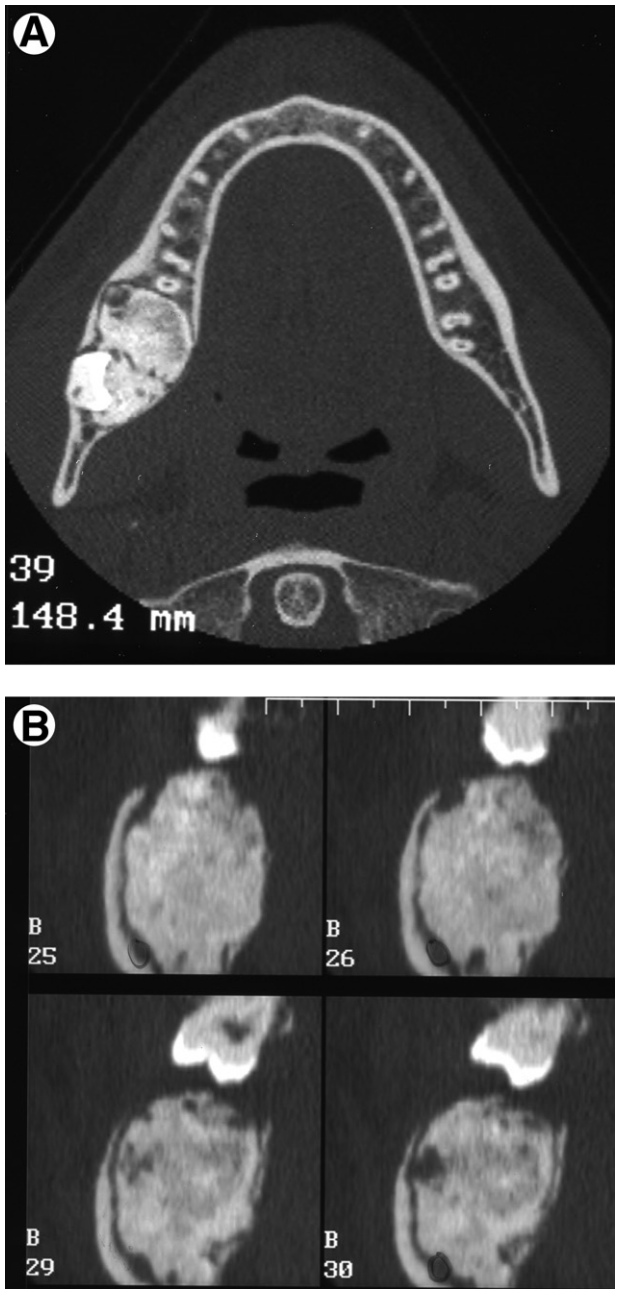


**FIGURE 2.** Axial CT (*A*) showed a radiopaque lesion located in the third molar region with bone expansion and thinning of the cortices. (*B*) Denta Scan shows the exact location of the inferior dental nerve in relation to the lesion.

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tentative diagnosis was acute pericoronitis around an impacted right third molar.

Radiographic examination showed a large, irregular, calcified mass extending distal to the right mandibular second molar toward the right mandibular ramus and the lower border of the mandible. The third molar was located in the distal part of the calcified mass (Fig 1). The axial computed tomography scan showed thinning of the buccal and lingual cortical plates, and the dental scan showed the inferior

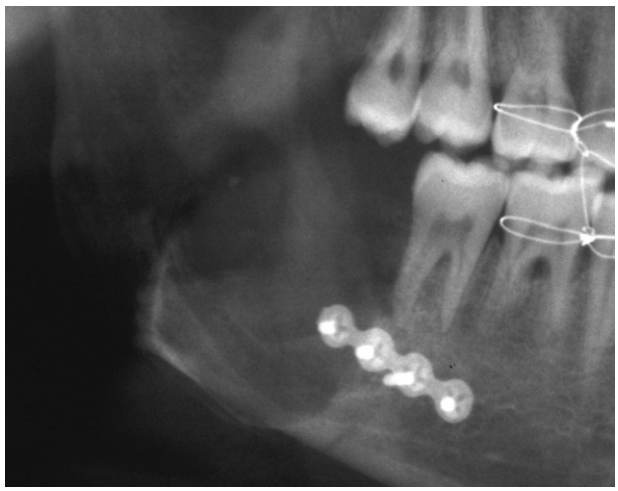

**FIGURE 3.** Postoperative panoramic x-ray view demonstrating reduction of the SSO fragments with AO miniplate and intermaxillary Ivy loops.

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dental nerve depressed inferiorly and buccally close to the lower border of the mandible (Fig 2).

Based on the clinical signs and symptoms and the radiographic evidence, the final diagnosis was pericoronitis around a complex odontoma.

### TREATMENT

Control of infection was done with amoxicillin 1.5 g/day and local irrigations. Reduction of symptoms was noted a week after this initial treatment. The patient was scheduled for removal of the odontoma, using the sagittal split osteotomy approach.

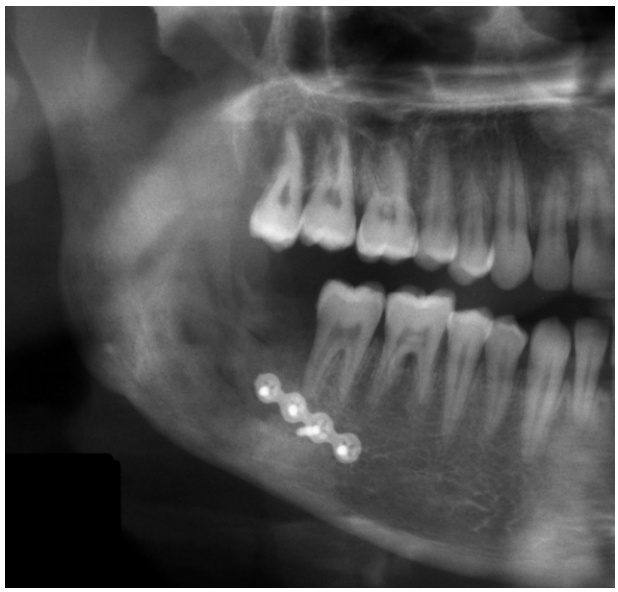

**FIGURE 4.** Four months postoperative panoramic x-ray view demonstrating advanced bone healing of the operated area.

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**TABLE 1. REMOVAL OF LARGE TUMORS IN THE MANDIBLE USING THE SSO TECHNIQUE**

| Reference | Author(s) | Year | Tumor |
|---|---|---|---|
| 2 | Rittersma and van Gool | 1979 | Keratocyst |
| 9 | Barnard | 1983 | Odontoma |
| 3 | Frame | 1986 | Odontoma |
| 17 | Petti et al | 1987 | Myxoma |
| 7 | Wong | 1989 | Odontoma |
| 19 | Wong | 1992 | Myxoma |
| 10 | Guven | 1999 | Odontoma |

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The SSO was performed under general anesthesia and the odontoma was removed, preserving the inferior dental nerve without intraoperative complications. Osteosynthesis was achieved by using a miniplate and maxillomandibular fixation with Ivy loops for 5 weeks (Fig 3). A mild hypoesthesia of the inferior dental nerve was observed for the first 4 weeks after surgery, which was diminished with time. The postoperative course was uneventful. Clinical and radiographic examination 4 months after surgery showed good results (Fig 4).

## Discussion

The accepted treatment of odontomas is enucleation. However, whenever the size and location of the odontoma may endanger the inferior mandibular nerve or adjacent teeth, a different approach must be considered to avoid any complications. Large complex odontomas in the mandible are rare; thus, little information is available concerning the preferred surgical approach for these lesions.[3-10] However, there are 4 possible surgical approaches to remove large benign tumors in the mandibular angle:

- Intraoral, by removal of the buccal cortex
- Lingual approach, by removal of the thin lingual cortex
- Segmental osteotomy via an extraoral submandibular approach, which requires partial resection of the mandible and reconstruction with a bone graft
- Unilateral sagittal split osteotomy

Blinder et al[8] described an intraoral buccal and lingual approach and discussed the advantages for removal of large odontomas. They indicated the risks of removal of an odontoma whenever a thick buccal cortex is found may involve a fracture of the mandible and exposure of the lingual aspect of the ramus, resulting in dysesthesia of the homolateral tongue. Savitha and Cariappa[11] recommended a bony lid technique for enucleation of a large ameloblastic fibro-odontoma, encroaching on the left ramus of the man-

dible in a 5-year-old boy, using an extraoral approach. Sagittal splitting of the ramus or body of the mandible is an established procedure[12-16] that also can be used to remove large odontomas.

Reviewing the literature, we have found 7 instances in which the procedure was used for removal of large masses in the mandible (Table 1).

Rittersma and van Gool[2] initially described the use of the sagittal split osteotomy technique to gain access for removal of a large, multinucleated keratocyst, thus avoiding morbidity associated with resection and bone loss followed by bone grafting of a nonmalignant lesion. A similar approach has been described by Petti et al[17] for resection of a mandibular myxoma. Removal of large mandibular myxomas may cause tremendous bone loss, potential mandibular fractures, and damage to the inferior dental nerve. The use of SSO for removal of large myxomas also has been described by several other authors in the English-language literature.[3,9,18,19] Toffanin et al[20] used the SSO for removal of a mandibular third molar tightly connected to the inferior alveolar nerve, thus reducing the risk of damaging the inferior alveolar nerve.

The advantages of SSO to gain access to large lesions in the mandible rather than using the usual technique of creating a large bony defect include less risk of intra- or postoperative fracture of the mandible and the possibility of attaining primary wound healing.

The size of the odontoma described in this report made it an ideal indication for using the SSO approach. By this approach we managed to avoid sacrificing a large amount of bone and damaging the inferior alveolar nerve.

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## Erratum

In the November 2006 issue of the *Journal of Oral and Maxillofacial Surgery* (Volume 64, Number 11), in the article entitled, "Staged Surgical Treatment for Temporomandibular Joint Ankylosis: Intraoral Distraction After Temporalis Muscle Flap Reconstruction," by Kwon et al (J Oral Maxillofac Surg 64:1680-1683, 2006), incorrect figure identification tags appear under the figures in the printed issue. The correct tags should read:

*Kwon et al. Staged Surgical Treatment for TMJ Ankylosis. J Oral Maxillofac Surg 2006.*

The printer regrets the error.