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Ranula and the Sublingual Salivary Glands
Review of 32 Cases

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Objective: Comparative study to evaluate various surgical methods for the treatment of ranula.

Method: Thirty two patients were retrospectively studied regarding treatment method namely, excision of the ranula, marsupialization, and excision of the ranula combined with sublingual gland removal, recurrence and complications. All available specimens were histologically studied.

Result: There were 25 female and 7 male patients. The mean age was 13.5 years. Six patients had ranula excision, 4 had marsupialization and 22 had excision of the ranula combined with sublingual gland removal. These treatment methods showed 18.7%, 80% and 0% recurrence rate respectively. There was no complication with any method employed.

Conclusion: The most reliable method for eradicating ranula of the floor of the mouth is by surgical excision of the ranula with the sublingual gland removal.

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Ranulas are mucoceles occurring on the floor of the mouth[1]. They develop from the extravasations or retentions of mucous following trauma to the sublingual gland or one of the minor salivary glands[2,3]. Plunging ranula may occur with cervical extension through the mylohyoid muscle[3]. There are controversies in the literature as to whether the ranula is an extravasation or retention phenomenon exhibiting epithelial lining[4-6]. There are wide range of treatment philosophies including excision of the ranula only, marsupialization, excision of the ranula and sublingual gland and excision of the ranula via a cervical approach sometimes combined with the sublingual gland excision[3-6].

Sublingual gland excision is usually done through an incision in the floor of the mouth while care being taken to avoid injury to the lingual nerve and

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submandibular salivary duct. Galloway et al described a safer approach from the lateral side by elevation of a mucoperiosteal flap from the lingual surface of the mandibular alveolar process[7].

This study compares the results of different treatment modalities for ranulas to validate the most dependable therapy.

METHOD

All patients treated at the Department of Oral and Maxillofacial Surgery, Salmaniya Medical Complex, Bahrain, between the period, January 1992 till June 1997 were entered into this study. There were 32 patients tested by two different surgeons. The surgical procedures selected were excision of the ranula only, marsupialization, or excision of the ranula combined with sublingual gland removal. Histological examination was undertaken for all specimens routinely. All cases were approached through an incision in the floor of the mouth.

RESULT

During the period of the study 32 patients presented with ranula of the floor of the mouth. Twenty five (78%) were women and 7 (22%) were men. The youngest was 11 and the oldest was 37 years old, the mean age was 13.5 years. The left side of the floor of mouth being affected in 13 (40.6%) patients and the right side in 19 (59.4%) patients. Six (18.7%) patients had ranula excision only, 4 (12.5%) had marsupialization, and 22 (68.8%) had excision of the ranula combined with sublingual gland. Recurrence was observed in 6 (18.7%) cases. Four (80%) cases involved in the excision of the lesion and only 2 (66.6%) had marsupialization. No recurrence for those patients who had sublingual gland removal combined with the ranula (0%). The six patients with the recurrent ranulas were re operated for sublingual gland excision and the ranula. No recurrence following the second operation. No reported cases of damage to the lingual nerve and the duct of submandibular gland. Histological examination showed focal chronic nonspecific sialadenitis with prominent periductal distribution and extravasated mucin.

DISCUSSION

Ranulas are defined as mucous extravasations from a traumatized sublingual gland or duct into the soft tissues of the floor of the mouth above the mylohyoid muscle[7]. Plunging ranula occur when ranula enlarge and extend inferiorly through the mylohyoid muscle allowing saliva to extravasate into the submandibular and cervical soft tissue planes[5,6]. Any treatment with the potential of injuring the excretory duct and the salivary gland parenchyma raise the possibility of recurrence. Several treatment methods have been advocated to eradicate ranulas including: exteriorization into the oral cavity with marsupialization; excision of the ranula alone; excision of the sublingual gland; excision of the ranula and the sublingual gland. Excision of the ranula alone without damaging the sublingual gland is almost impossible. Damaging sublingual gland will result in a catastrophic recurrence rate due to fast reepithelialization and closure of the wound edges5. Treatment by marsupialization also have high recurrence rate due to early closure[1-4]. Excision of the ranula with sublingual gland is the most reliable treatment method to eradicate the pathology and usually does not result in recurrence because saliva producing tissues no longer exist. From our experience, it is clearly obvious that excision of the ranula combined with sublingual gland removal, in spite of its aggressiveness is the most reliable and effective remedy.

CONCLUSION

Regardless of the procedure used for the removal of ranula, elimination of the underlying sublingual gland appears to be the most reliable and efficient means to eradicate a ranula and avoiding recurrence.

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