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MANAGEMENT OF IATROGENIC SALIVARY GLAND INJURY- A CASE REPORT

Dentistry

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ABSTRACT

Trauma to the submandibular and sublingual gland is very rare, because the body of mandible serves as an anatomic protection to both the submandibular and sublingual salivary glands. Mandibular body fractures, penetrating wounds and ballistic injury can lead to submandibular and sublingual salivary gland trauma. Blunt injuries often remain unnoticed and they are recognized by their complications which involve chronic obstruction of the excretory system of the glands and subsequent infection like sialadenitis. If trauma to the salivary gland is identified during exploration of the wound, removal of the gland is recommended as it is an easy procedure with a low complication rate. Injuries to the salivary gland duct should be treated with marsupialization of the gland in a more distal location to avoid stricture formation. This case report demonstrates the surgical management of an iatrogenic salivary gland injury.

KEYWORDS

Iatrogenic Salivary Gland Injury, Sialocele.

INTRODUCTION

Penetrating trauma to the floor of the mouth or behind the mandible can damage the submandibular and sublingual salivary gland. However, trauma to the submandibular and sublingual salivary gland is very rare because the glands are protected by the body of mandible. Penetrating injuries, gunshot injuries and mandibular fractures can traumatize the submandibular or sublingual salivary gland and its duct. Other causes of injury involve lacerations of the floor of the mouth that may involve Wharton duct and blunt trauma of the gland that is usually found in motor vehicle accidents. If trauma to the gland is identified during surgical wound exploration, removal of the gland is recommended as it is an easy procedure with relatively low complication rate. If trauma to the salivary gland is not diagnosed during wound exploration, a fistula or a slowly expanding sialocele is likely to appear later[1]. Sharp penetrating injuries to the glands, TMJ surgeries and infections are some of the common causes of a sialocele. Most of the cases can be managed conservatively by repeated aspirations, pressure dressing and administration of antisialogogues and intralesional botulinum toxin injections. Intraoral drainage of the sialocele along with stenting of the duct is done when the injury is in the distal part of the duct. If conservative measures prove unsuccessful, the surgical excision of the gland is done[2]. Here we present a case of mucocele in a 28-year old male, who was managed by complete excision of the mucocele.

Case Report

A 25 year old male patient reported to the department of oral and maxillofacial surgery with the chief complaint of swelling in the left side floor of the mouth. The history revealed patient was apparently normal until the patient had an iatrogenic penetrating injury to the floor of the mouth during prosthodontics rehabilitation by crown preparation in left lower back tooth region of the jaw (FIGURE 1). Clinical examination revealed the presence of well defined, swelling of approximately 3 x 3 cm in size. Extending anteriorly from the midline of floor of the mouth and posteriorly up to 37 region. The mucosa over the swelling was erythematous with apparently normal surrounding mucosa. No evidence of active bleeding with no pus discharge. On palpation the swelling was afebrile, tender, fluctuant and soft in consistency. Ultrasound scan shows a hypoechoic-anechoic cyst centered within the left sublingual salivary gland. A routine blood investigation was performed. Informed consent was obtained from the patient after explaining the complete treatment plan, then surgical excision of the mucocele of left sublingual salivary gland was performed under general anesthesia. After complete betadine wash, full thickness mucosal incision was placed over the swelling present in the left floor of the mouth (FIGURE 2), lesion was exposed (FIGURE 3) and the surgical excision of the lesion was performed followed by suturing using 3-0 vicryl and hemostasis was achieved (FIGURE 4). The excised specimen was sent for histopathological examination. Postoperative antibiotics and analgesics were prescribed for 5 post operative days. The patient was discharged from the ward and the post operative instructions were given. The histopathological report revealed mucocele with no evidence of inflammatory changes.

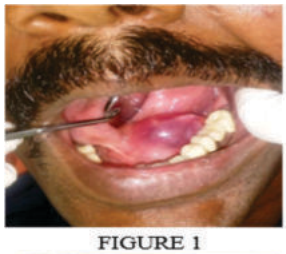

FIGURE 1

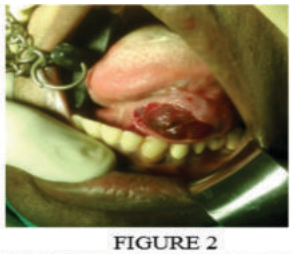

FIGURE 2

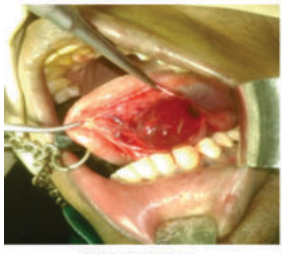

FIGURE 3

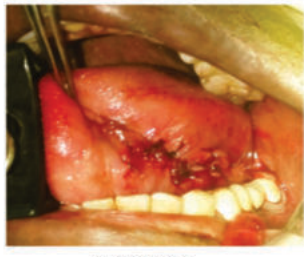

FIGURE 4

DISCUSSION

Trauma to the salivary glands results from soft tissue injury in the maxillofacial region. Initially, evaluation of salivary gland injury and associated structures should be performed. Recognizing injury to the parenchyma, ductal system and associated neurovascular structures is imperative to executing proper treatment. The clinician should assess the marginal mandibular branch of the facial nerve (in submandibular gland trauma) and lingual nerve injury (both sublingual and submandibular gland trauma). Parenchymal injury was managed conservatively with cleansing, gentile debridement, layered closure, and application of pressure dressings with good results. Ductal injuries should be explored and managed using the microsurgical techniques. The associated facial nerve injury should be treated primarily within

72 hours. Adjuncts such as botulinum toxin A, periods of NPO and antisialagogues, have been shown to be beneficial in treating injuries. Complications such as infection, sialocele and fistula may arise in treated and untreated salivary gland injury. Treatment of complications can range from conservative management to excision of the offending gland. Conservative, non-surgical management of the complications may take a protracted course. Minimally invasive techniques also have a role in management of the salivary gland injury. Currently, developing intrests in bioengineering and regenerative medicine may have a major impact in the management of salivary gland injuries in the future. Traiger et al (1963) reported an interesting case in which an acute sialocoele followed with laceration in the submandibular region. It was relieved by simple aspiration with the complication of fistula formation. Although excision of the gland seems as a simple procedure the, complication of damage to the cervical branch of the facial nerve should be kept in mind. There is therefore no indication to treat fistulas of the submandibular gland by any of the reparative and not always successful techniques designed for fistulas of the parotid gland with the aim of avoiding the much more hazardous operation of total excision of the gland[3].

DeGeus et al (1976) reported a case with sialocele of submandibular salivary gland. Excision of the sialocele along with the submandibular salivary gland was considered as the treatment of choice and was performed through submandibular incision. Histological sections showed the presence of a dilated duct beneath the dense scar tissue[4]. Singh and Shaha et al (1995) managed submandibular salivary gland injury in a 10-day period that resulted in spontaneous resolution. Similar results have been reported in cases of parotid injury, with resolution of symptoms occurring in 5 days for parenchymal injury alone and 14 days with duct involvement. However, if infection develops the healing will be uniformly delayed. A course of antimicromial therapy should be warranted in cases of submandibular salivary gland fistula associated with infection. Antisialagogues may also be considered in cases of excessive drainage. If resolution does not occur, or if infection progresses, excision of the submandibular gland can be performed with minimal risk[5].

CONCLUSION

Salivary gland injuries represent a small portion of soft tissue trauma but have dramatic sequelae if not diagnosed and treated. Salivary glands injuries can result from penetrating trauma to either the parenchyma or the duct and can range from self limiting contusions to open lacerations. The ductal injuries may not be immediately obvious and can develop stenosis and obstruction later. Therefore a proper diagnosis and meticulous management by conservative or surgical excision should be performed to prevent the complications. However prevention of such iatrogenic injuries can be prevented usage of rubber dam.

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