

## Parotid Sialocele: A Literature Review

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### **Abstract:**

*A post traumatic parotid sialocele is an acquired lesion that arises from extravasation of saliva into glandular or periglandular tissues secondary to disruption of the parotid duct or parenchyma. Facial trauma and surgery in the parotid region are the most common causes of this rare condition. This paper presents an overview of parotidsialocele and its management by various possible ways.*

**Keywords:** Sialocele, parotid sialocele, parotid injuries, parotid fistula

### **I. Introduction**

A parotid fistula is a communication between the skin and a salivary duct or gland, through which saliva is discharged.<sup>1</sup>The most common causes of parotid duct injury are penetrating trauma from stab wounds, motor vehicle accidents, and gunshot wounds. Other causes include injury during tumor resection, ulceration due to large calculi, and injury during drainage of parotid abscesses.<sup>2,3</sup>

Parotid gland and duct injuries are rare complications following surgery of parotid gland and temporomandibular joint. Parotid effusion, sialocele are some of its complications.<sup>4</sup>Flow through the fistula increases during meals, particularly during mastication. Injury to the parotid duct may be difficult to diagnose; therefore, the initial examining physician must have a high index of suspicion for injuries occurring in the parotid region. If not recognized, it will lead to salivary fistula and sialocele formation which will not heal spontaneously because of continuous flow of saliva. Successful treatment depends on early recognition and appropriate early intervention. Fistulography or sialography is an investigation to confirm the diagnosis.

### **II. Clinical features**

Salivary extravasations into the tissues causing swelling over or adjacent to parotid gland (sialocele), expanding neck mass and cutaneous fistula formation. In glandular fistulas, discharge is less and tends to heal spontaneously with conservative treatment; whereas ductal fistulas continuously discharge saliva and spontaneous healing is very rare.

### **III. Classification of parotid injuries**

An injury classification system has been devised by Van Sickels.<sup>5</sup> This system divides the parotid injuries into three regions: 1. Posterior to the masseter or intraglandular (site A), 2. Overlying the masseter (site B), and 3. Anterior to the masseter (site C).

### **IV. Diagnosis**

Examination of parotid injuries should include assessment of location, size, shape, type (e.g., puncture, laceration, avulsion, crush, abrasion), asymmetry, drainage (i.e., quality, character, odor) tenderness, surrounding erythema, edema, cellulitis, or crepitation and facial nerve status. The most straightforward way to diagnose a parotid duct injury is to cannulate the intraoral parotid duct papilla with a small silastic tube and observe if the tube is visible in the wound. This test does not require patient cooperation; therefore, it may be difficult or impossible in children, individuals with intoxication, or individuals with mental disabilities. If any question regarding the diagnosis remains, a small amount of saline may be injected through the tube and observed for flow through the wound. Methylene blue probably should not be injected through the tube because it terribly discolors tissues and makes subsequent operation even more challenging.<sup>1</sup>

## V. Investigations

Investigations performed may include fistulography. It is a radiographic procedure that demonstrates the origin and extent of fistulae (abnormal passages, usually between two internal organs). In this method, the tract is filled with a radiopaque contrast medium, usually under fluoroscopic control. Right angle and oblique projections are occasionally required to demonstrate the full extent of a sinus tract.<sup>6</sup>

Sialography may be performed but is usually not necessary to establish the diagnosis of parotid duct injury.<sup>7,8,9</sup> If performed, water-soluble contrast material should be employed because it is more easily drained and absorbed, and it does not remain as an irritant to the gland. In doubtful cases fluid can be sent for laboratory analysis; raised salivary amylase levels confirm the diagnosis.<sup>7</sup> Computed tomography fistulography can be performed to look for the extent of the fistula.<sup>10</sup>

## VI. Management

Nicoladoni reported the first primary anastomosis of the parotid duct in 1896. Morestin reported ligation of the proximal stump in 1917, and formation of an oral fistula was described in 1918. Acute parotid injuries should be explored & repaired primarily. Patients with wounds that involve the oral cavity or require manipulation of the parotid duct through the oral cavity should probably receive prophylactic antibiotics after primary closure.<sup>11</sup>

### Treatment options

- Aspiration and pressure dressings
- Antisialagogues
- Radiation therapy
- Parasympathetic Denervation (Tympanic Denervation)
- Cauterization of the Fistula
- Reconstruction of the duct
- Superficial or Total Parotidectomy tract

The surgical techniques can be classified as those that divert parotid secretions into the mouth and those that depress parotid secretion either by duct ligation or nerve sectioning. Conservative approaches include attempts to depress parotid secretion by antisialagogues or radiotherapy. The techniques that attempt to divert secretion into the oral cavity can be broadly classified as 1) Methods to reconstruct the duct to restore passage for the internal drainage of parotid secretion. This is carried out by using vein grafts. Distal duct injury can be repaired by buccal mucosa flaps and anastomosis of the proximal duct to buccal mucosa. 2) Methods to create a controlled internal fistula into the oral cavity. It is held open by means of a polyethylene catheter into the proximal duct or T-tube or catheter drainage of the cavity of sialocele into the mouth. Parotidectomy, local therapy to the fistula by excision and cauterisation are other options.

The techniques to depress parotid secretion include surgical and conservative approaches. Duct ligation leads to "physiologic death" of the gland.<sup>12</sup> Early oedema of the gland with pain due to stretching of the capsule occurs which resolves spontaneously within 1-2 weeks due to glandular atrophy. Sectioning of the auriculotemporal nerve or Jacobson's nerve leads to loss of parasympathetic innervations of the gland. Atrophy occurs at 6 months. High failure rates due to varied nerve anatomy are seen.<sup>13, 14</sup> Botulinum toxin type A injections have been described to diminish parotid secretion by presynaptic inhibition of acetylcholine release.<sup>15</sup> Conservative methods include administration of antisialagogues, radiotherapy and pressure dressing can be carried out. Radiotherapy causes fibrosis and atrophy of the gland.

## VII. Conclusion

Although parotid gland and duct injuries represent a small percentage of overall soft tissue traumas, dentist must be aware of such injury because failure to recognize it will permit the onset of number of different complications, some of which are difficult to resolve. In addition care must be taken when making incisions in the depth of the upper buccal sulcus to avoid cutting the stenson's duct. Surgeries in the midfacial region should be meticulous enough to avoid injury to the duct or gland in course of making incision and dissection. Based on the experience in managing such case we believe intraoral drainage with scalp vein cannula should be considered as a minimally invasive and cost-effective option for the treatment of sialocele.

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