

## Parotid sialocele: A case report

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### Abstract

Sialocele, a subcutaneous cavity containing saliva, is an uncommonly encountered clinical entity in surgical practice. It presents as asymptomatic soft and mobile swelling which usually enlarges while eating. It is caused by infection or trauma in and around the duct of salivary gland and can be managed by various surgical and nonsurgical modalities. Imaging studies and fine needle aspiration cytology are useful for establishing diagnosis. We are reporting a case of parotid sialocele in a young female patient managed with minimal surgical intervention.

**Key words:** Intravenous (IV) cannula, Parotid gland, Sialocele

### Introduction

Sialocele is a subcutaneous cavity containing saliva which usually results from infection or trauma in the oral cavity or face<sup>1,2</sup>. It is characterized by a soft, mobile swelling in the region of salivary gland with normal overlying skin. There is usually no associated history of fever or pain unless secondarily infected. Diagnosis is complex and involves combination of thorough history and clinical assessment of the patient, fine needle aspiration and imaging such as sialography, ultrasonography or MRI. Fine needle aspiration is a standard technique which permits to sampling and the fluid can be sent for further investigations<sup>3</sup>.

It can be managed by various treatment modalities. They basically consist of conservative or surgical approach. A conservative modality is based on regular aspiration of the content, compression dressing and administration of anti sialogogue. Radiotherapy and toxins are other modalities. Administration of botulinum toxin which causes temporary chemical denervation of cholinergic nerve fibers is another option available<sup>(4)</sup>. When conservative management fails, or when overlying skin becomes so thin that there is imminent risk of rupture, surgical treatment is indicated. Surgery may be performed by repair or reconstruction of the duct, creation of controlled internal fistula, superficial or total parotidectomy, parasymphathetic denervation or ductal

ligation. If the sialocele is left untreated, it may develop into a significant large facial swelling, fistulae formation and may drain extraorally.

### Case report

A 23-year old female patient presented to Department of OMFS with the chief complaint of swelling in left side of face since 1 week. There was a history of physical assault and cut injury on left side of face which was sutured. There was no history of fever or pain. No alteration of facial function and no sensory or motor deficit was noted.

On extra oral examination, there was a soft, fluctuant swelling present in left preauricular region measuring approximately 4cm X 3cm in size. Overlying skin was normal with no discharge. There was no lymphadenopathy detected. A sutured lacerated wound measuring approx 7 cm was present in left side of the face extending from left parasymphysis region of mandible to left temporal area (Fig 1). Intraoral examination was not remarkable.

A percutaneous needle aspiration of the swelling yielded 2 ml of clear viscous fluid which was sent for biochemical analysis. The reports revealed high amylase content suggestive of saliva. The aspiration procedure was sufficient to decrease the size of the swelling. A diagnosis of parotid sialocele was made.

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The swelling was then approached intraorally using 16 G intravenous (IV) cannula. Once the cannula reached the sialoceles and saliva started draining through it (Fig 2), the stylet of the cannula was removed, hub was cut and rubber tubing (stent) was fixed to mucosa using 3-0 non resorbable suture (Fig 3). Patient was advised to regularly massage the swelling to facilitate drainage. After 3 weeks, the swelling subsided uneventfully and the stent was removed and a normal salivary drainage through the new tract was ensured.



Fig 1: Swelling with sutured wound over parotid duct region



Fig 2: Intraoral drainage of saliva through cannula



Fig 3: Stent fixed with non resorbable suture in position

### Discussion

Mucocele are round and well defined lesion that contain mucin. When they occur in major salivary gland they are called sialoceles. Mucocele are of two types: extravasation and retention. Mucous extravasation phenomenon is when mucous is extruded into the connective tissue and is surrounded by granulation tissue. Mucous retention phenomenon is used to describe a cyst with retained

mucin lined with ductal epithelium<sup>5, 6</sup>. Parotid sialoceles are the lesion that occur after the trauma or injury to the parenchyma or duct of parotid gland causing accumulation of saliva in the area<sup>7,8,9</sup>.

The management of patient with swelling in the preauricular region requires careful clinical evaluation. Fine needle aspiration or biopsy helps in definitive diagnosis of the lesion<sup>3</sup>. Parotid secretion has high amylase content, usually around 10,000 units/l<sup>10</sup>. Imaging studies such as sialography, ultrasonography, computed tomography, MRI also aid in establishing the diagnosis. Sialography may increase internal pressure of sialoceles causing rupture or fistulae of the lesion. USG, CT scan, MRI scan are better alternatives because they show details of the area such as single or multiloculated cystic lesion with regular margins and lower density of the surrounding tissue.

Varieties of treatment modalities have been proposed in management of sialoceles which can be divided into those ablating parotid secretion such as anticholinergic drugs, radiotherapy and those restoring an intraoral drainage route for parotid saliva<sup>11</sup>.

Drugs act by blocking acetylcholine release, thereby inhibiting neurotransmission at secretomotor parasympathetic autonomic nerve ending responsible for salivation. Anticholinergic drugs or antisialagogues such as atropine, glycopyrrolate are proposed in treatment of sialoceles but not commonly used because of depressing side effects. The use of propantheline bromide was first reported by Burch<sup>1</sup> in 1953. Landau and Stewart (1985)<sup>12</sup> conducted a prospective trial of conservative management in all cases of traumatically induced parotid fistulae or sialoceles presented to their department over a 4 month period. They were successful in closing glandular and ductal fistulae but with unpleasant side effect.

Use of low dose radiation in an attempt to fibrose the gland has been tried at some centers but it is associated with potential long term risk for development of benign condition, skin and salivary gland tumors<sup>11,13</sup>.

Botulinum toxins act by causing temporary chemical denervation of the cholinergic fibers<sup>4</sup>. Marchese Ragona et al<sup>14</sup> and Vargas et al<sup>15</sup> asserted that botulinum toxin is highly effective, safe and non invasive therapy. The clinical effect starts after 3 days of administration of first dose. However, muscle weakness has been reported in the literature with its use<sup>4</sup>.

Some patients can be managed with repeated aspiration and compression with or without intraductal catheter<sup>16</sup>. This requires good patient compliance and regular follow

up which may not be feasible with all the patients. Use of temporary cannula via intraoral route allows saliva to enter into oral cavity and also causes scarring of tissues around cannula when left over a period of time. This will result in re-routing of duct or creation of controlled internal fistula<sup>3,11</sup>. In cases where conservative approach fails, an extensive invasive procedure such as superficial parotidectomy with excision of duct along with sialoceles is advised.

In the above mentioned case, there was a soft, fluctuant swelling in left pre auricular region suggestive of more superficial lesion. It was not fixed to underlying structure or overlying skin. She did not present with fever or any other signs of inflammation. An important key to diagnosis in our case was fine needle aspiration which yielded material for biochemical analysis and revealed high amylase content. Aspiration also decreased the size of the swelling.

So a decision to create a controlled internal fistula was made using 16 gauge IV cannula. On regular follow up, the patient did not develop pain, swelling or any other signs of inflammation. As the sialoceles subsided with no adverse events and minimal intervention, we found this technique to be effective in management of parotid sialoceles.

### Conclusion

As various conservative and radical surgical management techniques have their own drawbacks, we found that minimal intervention using IV cannula to create controlled internal fistula to be effective in management of parotid sialoceles.

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