

# A Giant Sialocele Caused By a Stab Wound: Case Report

## Kesici Alet Yaralanmasına Bağlı Dev Bir Sialosel

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**ABSTRACT** Sialocele is characterized by accumulation of the salivary gland secretions into the surrounding tissue without an epithelial capsule around. It is usually encountered in the parotid gland and occurs due to trauma. Common causes of parotid gland injuries are penetrating injuries caused by sharp instruments, perforating injuries caused by gunshot and secondary damages due to surgical procedures. Diagnosis is based on a clinical evaluation with physical examination and imaging techniques. Computerized tomography, ultrasonography, magnetic resonance imaging are the most valuable tools to diagnose salivary gland lesions and sialocele. In the literature various surgical and conservative treatments are reported about sialocele cases. In this case report, it was aimed to discuss a giant sialocele in the parotid gland occurred due to knife injury to Stensen duct on the right side of the face and a novel way of treatment.

**Keywords:** Wounds, stab; salivary ducts; parotid gland; salivary gland diseases; salivary gland fistula

**ÖZET** Sialosel, epiteliyal bir kapsül olmaksızın tükürük bezi salgısının çevre dokular içine ekstrasvaze olarak birikmesiyle karakterize bir durumdur ve genellikle travma sonucu parotiste görülür. Parotis yaralanmalarının yaygın nedenleri keskin aletlerle oluşan penetran yaralanmalar, ateşli silahlarla oluşan perforan yaralanmalar ve cerrahi prosedürlere bağlı sekonder hasarlardır. Tanı, uygun fiziksel muayene ve görüntüleme yöntemleriyle birlikte yapılacak bir klinik değerlendirme sonucu konur. Bilgisayarlı tomografi, ultrasonografi ve manyetik rezonans görüntüleme gibi yöntemler tükürük bezi lezyonları ve sialoselin tanısı için yaygın olarak başvurulan en iyi yöntemlerdir. Literatürde sialosel tedavisi ile ilgili birçok konservatif ve cerrahi tedaviler rapor edilmiştir. Bu olgu raporunda, literatürde dökümante edilen sialosel olgularıyla ilgili bilgiler gözden geçirilerek, sağ fasiyal bölgede stenson kanalı kesisine bağlı dev bir parotis sialoseli ve uyguladığımız cerrahi tedavi yönteminin tartışılması amaçlanmıştır.

**Anahtar Kelimeler:** Yaralar, kesici alet; tükürük kanalları; parotid bez; tükürük bezi hastalıkları; tükürük bezi fistülü

Sialocele is a rare, asymptomatic, mobile and soft swelling at the parotid and submandibular area. It is characterized by accumulation of the salivary gland secretions into the surrounding tissue without epithelial capsule around.<sup>1-3</sup> Sialocele may have idiopathic, posttraumatic or iatrogenic origin.<sup>2,4</sup> Common causes of parotid gland injuries are penetrating injuries caused by sharp instruments, perforating injuries caused by gunshot and secondary damages due to surgical procedures and parotidectomy.<sup>5-8</sup> The

most common causes of parotid sialocele are reported as parotid region surgery and facial trauma.<sup>9</sup> In this report, a rare giant sialocele of the face caused by a knife injury and the treatment we have achieved via silicon catheter of angiocath, was reported.

## CASE REPORT

Young male patient admitted to our department 3 months after a knife injury localized on the right side of the face with complaining of an increasing and painless swelling, which appeared 1 week after the injury on this area. Clinical examination revealed two scar tissues of vertical incision in the parotid and infraorbital area and painless fluctuant swelling between tragus and angulus (Figure 1).

As a result of assessment of the patient's history, type of injury, location and consistency of swelling, FNA biopsy was made with initial diagnosis as sialocele. Biopsy material was viscous and transparent, in the light of this finding it was thought that the fluid was secretion of parotid gland. Final diagnosis of swelling on the parotid gland area was made as sialocele occurred due to incision of Stensen duct, so invasive diagnostic procedures were not needed.

After 1 cm wide horizontal incision to the center of swelling and the blunt dissection of skin and subcutaneous tissues, the parotid region was reached. During the operation, the drainage of saliva on the sialocele area was observed. Proximal and distal endings of Stensen duct were detected with silver lacrimal duct probe (Figure 2). On the



FIGURE 1: Preoperative and Follow-up (24 months) images of the patient.



FIGURE 2: Extraoral detection of stensen duct with silver lacrimal duct probe and placement of silicon catheter of angiocath to distal end of the duct.



**FIGURE 3:** Removal of silicon catheter of angiocath intraorally from the duct orifice.

other hand, by entering lacrimal probe to Stensen duct orifice with intraoral approach, the tip of the probe was removed from the incision area by following the duct.

Proximal and distal end of duct was determined by the probe and silicon catheter of angiocath was placed to distal end of duct then intraorally removed from the duct orifice and sutured to buccal mucosa (Figure 3). Opposite end of catheter on the operation side was placed to proximal end of duct and operation area was sutured with 4/0 resorbable and 5/0 silk suture. Pressured dressing were also placed. Placed catheter was removed intraorally 2 weeks after operation. There were no postoperative complications.

During the postoperative controls normal saliva flow was seen from the duct orifice. Patient was followed with 3 months intervals. Relapse was not seen in 12th month control and follow-up was ended (Figure 1).

## DISCUSSION

Sialocele is a clinical condition resulting from a duct laceration or stenosis due to a trauma to the parotid gland parenchyma with dilatation of salivary filled subcutaneous cavity in time. When sialocele takes longer than two weeks, a capsule may be formed which can be viewed on CT.<sup>3</sup>

Parotid gland diseases, which cause swelling in the parotid area, are parotiditis, aneurism and abscess formation resulting from sialolithiasis, hematoma and neoplasms.<sup>10</sup> These clinical conditions show the importance of accurate diagnosis

and treatment of traumatic parotid injuries to prevent cutaneous fistulas and salivary gland duct cysts formation.<sup>6</sup>

To make accurate diagnosis, CT and FNA biopsy are valuable options. In our case, diagnosis of the sialocele was achieved with the light of clinical findings, type of injury and result of FNA. Using different diagnostic techniques can usually make diagnosis. These techniques are physical evaluation, FNA biopsy, analysis of saliva amylase and different imagining techniques (USG, CT, MR).<sup>11</sup>

Acute inflammatory parotid diseases like retrograde and viral parotiditis show rapid growth in parotid region so give the impression of mass development with similar clinical symptoms with sialocele. Clinical evaluation with trauma history and imagining techniques can provide benefit to make differential diagnosis. Computerized tomography (CT), ultrasonography, magnetic resonance imagining (MR) are the best methods to determine the lesions of salivary gland duct.

Various conservative and surgical therapies have been reported for the treatment of sialocele. If conservative treatment options and subsequent surgical methods get unsuccessful results, drain placement can be an assessable option.<sup>6,9</sup> Conservative approaches are percutaneous aspiration, compress application and antisialogogue medication.<sup>10</sup> As an adjuvant treatment; parenteral nutrition treatment is reported to reduce the stimulation of salivary gland. Aspiration can be made in these conditions; excessive salivary secretions (sialorrhea), salivary gland fistulae, Frey's Syndrome.<sup>12</sup> Therefore conservative approaches are reported as effective to parotid gland injuries.<sup>13</sup> But some cases are unresponsive to the treatment.

Botulinum toxin injection is defined, as a safe, effective and noninvasive treatment.<sup>4,8,14</sup> A single Botulinum toxin A injection to sialocele which occurred after parotidectomy is reported as a successful treatment.<sup>15</sup> Cappacio et al. have suggested that the traditional treatment methods such as aspiration, sclerosing injections, radiation, marsupialization, incision and drainage often fail to treat the sialocele.<sup>4</sup> In such cases, the insertion of drains

to create a new salivary duct, low-level radiation to stop the secretion of saliva and induce the glandular start fibrosis, tympanic neurectomy to stop the parotid gland secretion and partial or total parotidectomy are suggested.<sup>16</sup>

Monfared et al. have described intraoral sialoceles marsupialization with leaving a drain in the mouth.<sup>5</sup> Treatment of sialoceles with intraoral parotid duct catheterization as reported in the present case, has been also reported with successful results without recurrence in several articles.<sup>6,9,17</sup> The drain is left in place for ten days to one month after catheterization or marsupialization.<sup>9,17</sup>

In our case, Stensen duct was reconstructed with catheter through intra and extra oral approaches. The drains were well tolerated by the patients and remained in its place for 15 days. Considering long-term follow-up of the patient with no recurrence or complications, it can be concluded that this method is effective, successful and inexpensive.

### **Ethical Approval**

*All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.*

### **Informed Consent**

*Informed consent was obtained from all individual participants included in the study.*

### **Conflict of Interest**

*Authors declared no conflict of interest or financial support.*

### **Authorship Contributions**

**Treatment of Patient:** Behçet Erol, Seda Yılmaz, **Follow-ups:** Behçet Erol, Seda Yılmaz, Sercan Küçük Kurt, **Preparation of manuscript:** Sercan Küçük Kurt, Tuğçe Biçer Aytuğar, **Critical revision:** Behçet Erol.

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