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Case Report

Recurrent Mucocele of the Accessory Parotid Gland Managed via Extraoral Approach: A Rare Case Report

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Abstract

Background: Mucoceles of the accessory parotid gland are rare, and recurrent cases pose a significant surgical challenge due to the risk of facial nerve injury and incomplete excision. **Case Presentation**: An 18-year-old male presented with a recurrent left mid-cheek swelling after two failed intraoral excisions. Magnetic resonance imaging revealed a 4.2 cm cystic lesion superficial to the masseter. Complete excision was achieved via an extraoral face-lift incision, with careful dissection and preservation of facial nerve branches. Histopathology confirmed a mucocele. Temporary facial nerve weakness and salivary fistula were managed conservatively with continued drainage, pressure dressing, and antisialagogue medication. **Conclusion:** Complete surgical excision via an extraoral approach offers a reliable management strategy for recurrent accessory parotid mucoceles, reducing recurrence risk and facilitating safe dissection around facial nerve branches.

Keywords: accessory parotid gland, mucocele, recurrent, extraoral approach, facial nerve, salivary fistula

Introduction

The accessory parotid gland (APG) is a distinct ectopic salivary tissue separate from the main parotid gland, typically located along the anterior border of the masseter muscle in the path of Stensen's duct [1]. Anatomically, the APG is situated superficial to the masseter and deep to the subcutaneous tissue, with its own ductal drainage system that usually communicates with the main parotid duct [2]. Cadaveric and radiographic studies have demonstrated that the APG has a prevalence ranging from 21% to 56% in the general population, though clinically significant pathology arising from the APG is exceedingly rare [1-4].

Mucoceles of the APG are among the most unusual pathologies in this region. These cystic lesions result from either ductal obstruction (retention cyst) or ductal rupture (extravasation pseudocyst) [5]. When mucoceles occur in the APG, their location anterior to the main parotid gland overlying the masseter muscle leads to a clinical presentation that overlaps with numerous other mid-cheek swellings, including dermoid cysts, lymphadenopathy, salivary neoplasms, and vascular malformations [2,4,7]. Magnetic resonance imaging (MRI) is the diagnostic modality of choice, typically demonstrating a well-circumscribed, T2-hyperintense cystic lesion with no solid components [4,8].While surgical excision is definitive treatment for symptomatic or recurrent APG mucoceles, the choice of surgical approach remains debated. The intraoral approach offers the advantage of no external scar but is technically demanding due to limited visualization and the difficulty of identifying and preserving facial nerve branches from a medial-to-lateral perspective [9,10]. Consequently, incomplete excision and recurrence are well-documented pitfalls of this approach [5,7]. In the present case, the patient experienced two separate recurrences following intraoral excisions, underscoring these limitations.In contrast, the extraoral approach,typically a modified preauricular face-lift incision,provides direct, magnified visualization of the entire surgical field from a lateral perspective [11]. This approach allows definitive identification and preservation of facial nerve branches, complete excision of the mucocele along with its accessory gland of origin, and protection of the main Stensen's duct [10,11]. Although the extraoral approach carries risks of visible scarring, temporary facial nerve weakness, and salivary fistula, these complications are generally manageable with conservative measures [12,13]. This case report describes the successful management of a recurrent APG mucocele in an 18-year-old male using an extraoral approach and advocates for this strategy in recurrent or large lesions.

Case Presentation

An 18-year-old Libyan male with no significant medical or surgical history presented to the Oral and Maxillofacial

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Surgery clinic with a recurrent, painless swelling in his left cheek. The initial swelling had been excised via an intraoral approach by an ear, nose, and throat (ENT) surgeon 18 months prior to presentation, with recurrence noted within 4 months. A second intraoral excision was performed by a maxillofacial surgeon 10 months prior to the current presentation, followed again by recurrence after 3 months. The patient denied any history of trauma, sialolithiasis, or xerostomia. He reported no pain, no fluctuation in size with meals, and no associated fever or **systemic symptoms.**

Clinical examination revealed a 4 x 3 cm, well-defined, fluctuant, non-tender, and freely mobile swelling in the left mid-cheek, approximately 2 cm anterior to the tragus and overlying the anterior border of the masseter muscle (Figure 1). The overlying skin was normal in color and texture, with no signs of inflammation or sinus tract formation. Intraoral examination showed a healed scar in the left buccal mucosa from the prior surgeries, but no intraoral mass, ulceration, or palpable ductal abnormality. The left Stensen's duct orifice appeared normal, and clear saliva could be expressed with massage over the main parotid gland. No cervical lymphadenopathy was appreciated. Facial nerve function was intact bilaterally prior to surgery, with symmetrical forehead movement, eye closure, nasolabial fold depth, and lip excursion.

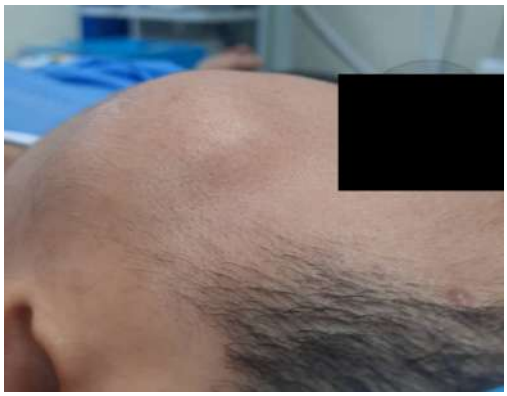

Figure 1: Pre-operative clinical photograph showing the well-defined, fluctuant swelling in the left mid-cheek region, approximately 2 cm anterior to the tragus.

Magnetic resonance imaging (MRI) of the face was performed using a 1.5 Tesla scanner with axial, coronal, and sagittal T1-weighted, T2-weighted, and post-contrast sequences. The MRI demonstrated a well-defined, unilocular cystic lesion measuring 4.2 cm in the anteroposterior dimension and 2.8 cm in the transverse dimension (Figure 2). The lesion was T1-hypointense and T2-hyperintense, with a thin, smooth, enhancing wall and no internal solid components, septations, or mural nodules. The lesion was located superficial to the left masseter muscle, deep to the subcutaneous fat, and anterior to the main parotid gland. No communication with the main parotid duct could be definitively identified on imaging. The imaging findings were most consistent with a benign mucous cyst (mucocele or retention cyst) arising from accessory parotid tissue.

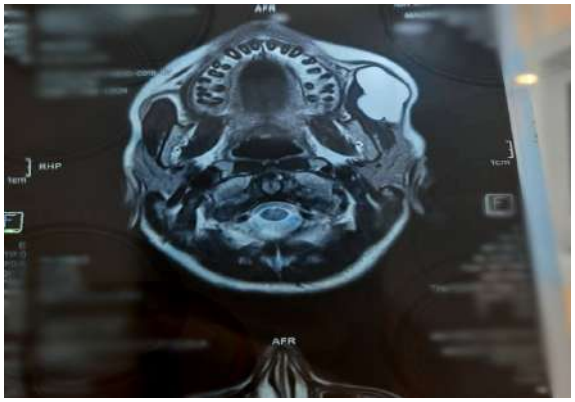

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Figure 2: Axial T2-weighted MRI image showing a well-defined, hyperintense cystic lesion (arrow) measuring 4.2 x 2.8 cm, located superficial to the left masseter muscle and anterior to the main parotid gland.

Surgical Intervention:

Following informed consent, the surgery was performed by the Oral and Maxillofacial Surgery team under general anesthesia with nasotracheal intubation. Given the two prior intraoral failures and the size of the lesion (4.2 cm), an extraoral approach was selected. A modified preauricular face-lift incision was made, beginning in the preauricular crease, extending inferiorly around the earlobe, and then curving posteriorly into the postauricular sulcus, with a short temporal extension superiorly to improve exposure. A sub-superficial musculoaponeurotic system (sub-SMAS) dissection was carried out under magnified vision using 2.5x surgical loupes.The zygomatic and buccal branches of the facial nerve were identified using blunt dissection with a combination of fine hemostats and a nerve stimulator. Both branches were found to be displaced superficially and anteriorly by the underlying cyst. The branches were carefully dissected free from the cyst capsule and retracted using vessel loops. The lesion was found to be well-encapsulated, with a smooth, glistening surface, originating from a distinct nodule of accessory parotid glandular tissue measuring approximately 1.5 cm in greatest dimension. The cyst, along with the associated accessory gland tissue and its 0.5 cm communicating duct that joined the main Stensen's duct, was meticulously dissected and excised en bloc (Figure 3 A, B). The main Stensen's duct was probed using a lacrimal probe and preserved in its entirety. Hemostasis was achieved with bipolar cautery. The surgical field was irrigated with warm saline, and a 7-French suction drain was placed deep to the SMAS layer exiting through a separate postauricular stab incision. Closure was performed in layers: SMAS with 3-0 Vicryl, deep dermis with 4-0 Monocryl, and skin with 5-0 Prolene.

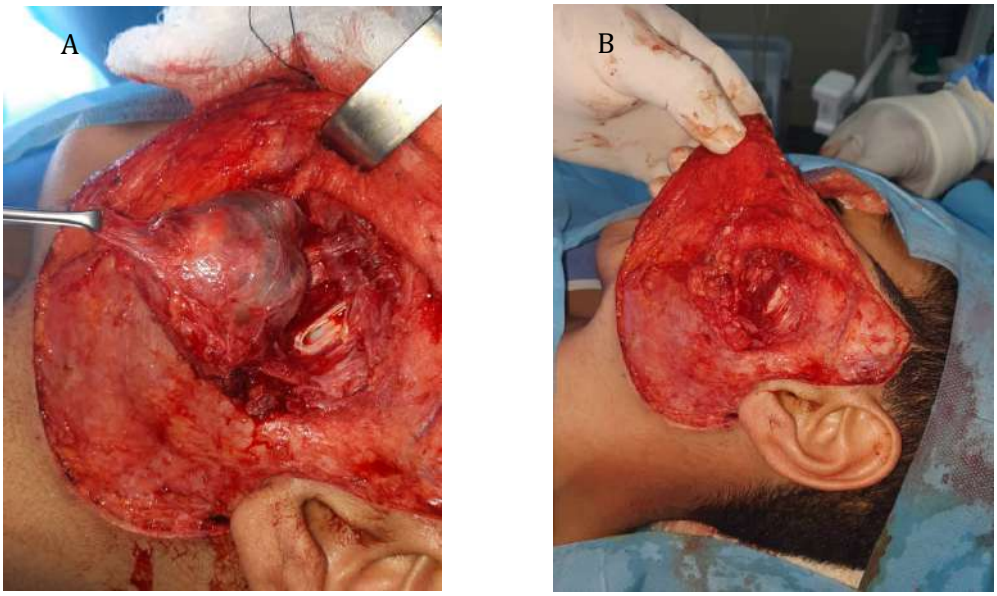

Figure 3: A: Intraoperative view through the extraoral face-lift approach showing the well-encapsulated, glistening mucocele prior to excision. The zygomatic and buccal branches of the facial nerve (retracted with vessel loops) are visible superficial to the cyst capsule. B: Surgical field after complete en bloc excision of the lesion, demonstrating preserved facial nerve branches and intact main Stensen's duct.

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Postoperative Course and Follow-up:
Histopathological examination confirmed the diagnosis of a mucocele. Gross examination revealed a thin-walled cystic structure containing thick, clear, mucoid fluid. Microscopic examination (Figure 4) showed a fibrous capsule with a lining of thin, benign squamous and simple cuboidal epithelium, surrounding large dilated mucous-filled spaces with surrounding mild chronic inflammatory infiltration (lymphocytes and plasma cells). No epithelial atypia, dysplasia, or malignancy was identified. The findings were consistent with a mucus retention cyst (true cyst) rather than an extravasation pseudocyst.

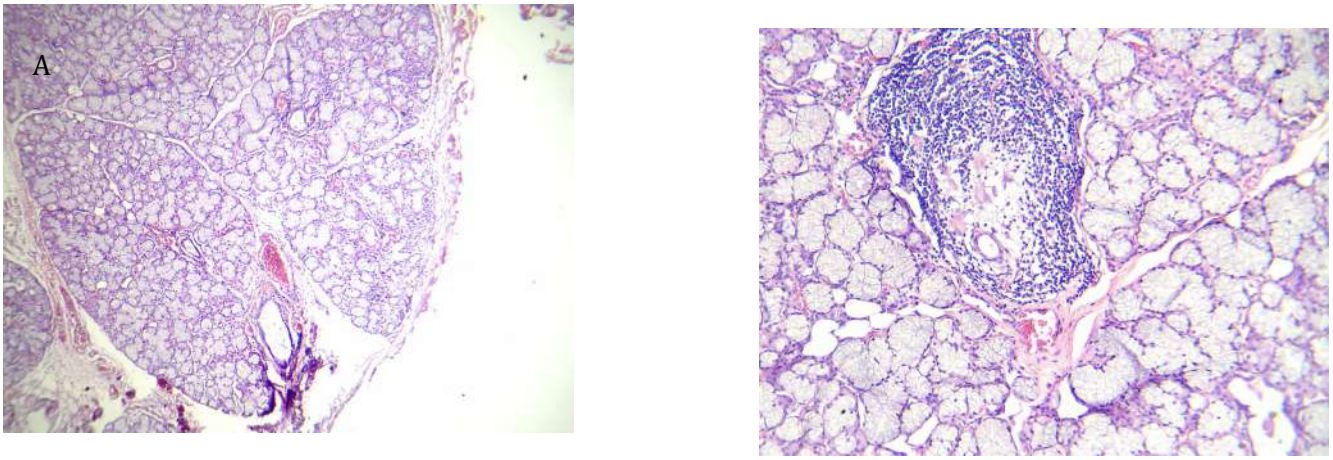

Figure 4: Histopathological photomicrographs (H&E stain). A: Low power (x40) showing the cystic architecture, fibrous capsule, and adjacent accessory parotid gland tissue. B: High power (x200) showing the lining of thin, benign squamous and simple cuboidal epithelium (arrow) and underlying mucous-filled spaces with chronic inflammatory infiltration.

The immediate postoperative period was complicated by two expected but nonetheless concerning complications. First, the patient developed a temporary neuropraxia of the buccal branch of the facial nerve, manifesting as mild asymmetry of the upper lip with weakness of lip elevation and smile (Figure 5).

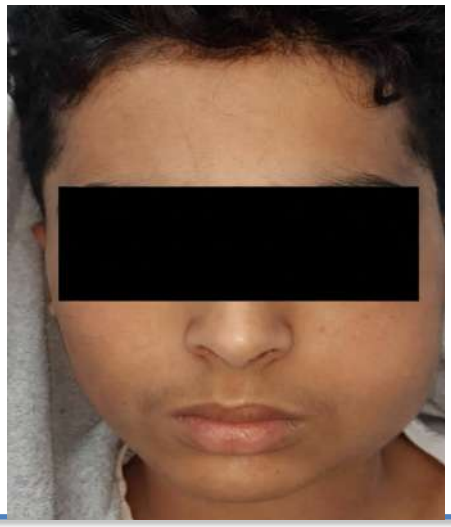

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***Figure 5**: Postoperative photograph at 1 week showing mild weakness of the left buccal branch of the facial nerve, manifested as asymmetry of the upper lip during smile.*

Second, on postoperative day 3, the patient developed a salivary fistula, with persistent drainage of clear, yellow, saliva-like fluid through the surgical drain site, measuring approximately 30-50 mL per day initially (Figure 6). Cultures of the fluid were negative for infection.

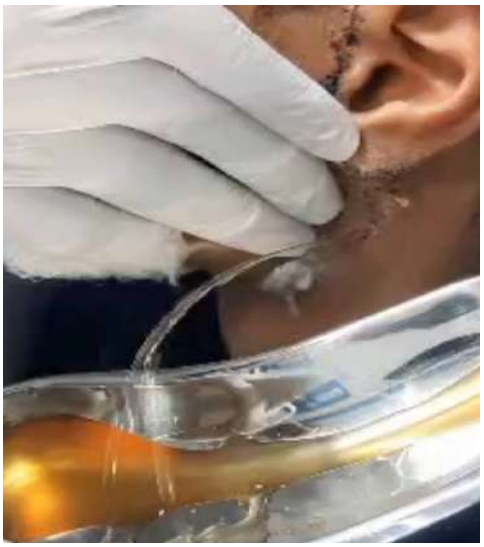

Figure 6: Postoperative clinical photograph showing drainage of clear, yellow salivary fluid from the surgical drain site on postoperative day 3, indicative of a salivary fistula.

Both complications were managed conservatively. The facial weakness was monitored with serial photographs and physical examinations; no pharmacologic intervention was provided. The patient showed gradual improvement beginning at 3 weeks, with near-complete return of symmetric smile by 8 weeks, and complete resolution by the 3-month follow-up visit. The salivary fistula was managed by leaving the suction drain in place on continuous low-pressure suction for an extended duration (removed on postoperative day 10), applying a gentle pressure dressing over the cheek, and initiating antisialagogue medication (glycopyrrolate 1 mg orally twice daily for 10 days). Fistula output gradually decreased to zero by postoperative day 14, and the drain site healed without further intervention. No sialocele formation, wound infection, hematoma, or seroma occurred.The patient was followed clinically at regular intervals. There was no evidence of clinical or radiographic recurrence at the 6-month, 12-month, and most recently, 18-month follow-up visits. The patient was satisfied with the aesthetic outcome of the face-lift incision, which healed to a thin, well-concealed scar in the preauricular and postauricular creases.

Discussion

This case illustrates a classic diagnostic and therapeutic challenge in the management of recurrent APG mucoceles. The accessory parotid gland, present in up to 56% of the population, is located along the course of the parotid duct, making lesions in this area prone to misdiagnosis as other cystic or neoplastic entities [1,3,4]. The recurrence in this case was almost certainly due to incomplete excision of the cystic lining and the associated accessory glandular tissue during the previous intraoral procedures, a pitfall highlighted in the literature [5,7]. Histopathologically, the finding of an epithelial lining in our case confirmed this to be a mucus retention cyst (true cyst) rather than a classical extravasation mucocele, which lacks a true epithelial lining [5]. This distinction, while academically relevant to pathogenesis (ductal obstruction vs. ductal rupture), does not alter the surgical principle that complete excision of the

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cyst, its gland of origin, and any communicating duct is required to prevent recurrence.

The choice of surgical approach is critical. The intraoral route, while aesthetically appealing because it avoids an external scar, offers limited visualization in a confined surgical field, especially when the lesion is large (>3 cm) or located laterally [9]. This restricted exposure increases the risk of leaving behind microscopic or macroscopic residual pathologic tissue. Furthermore, the intraoral approach poses a greater, often partially blind, risk to the zygomatic and buccal branches of the facial nerve, which are dissected from a medial-to-lateral perspective without the same level of direct visualization afforded by the extraoral route [9,10]. In contrast, the extraoral (modified face-lift) approach adopted here provided direct, magnified visualization of the entire lesion, the facial nerve branches, and the parotid duct system. This allowed for definitive identification and complete en bloc excision of the mucocele sac, its gland of origin, and the distal communicating duct, which is the cornerstone of preventing recurrence [10,11].

The complications encountered in this case, transient facial nerve weakness and salivary fistula, are well-recognized risks of parotid region surgery and are consistently reported in large surgical series [12,13]. A recent retrospective analysis of 554 parotid surgeries for benign lesions reported temporary facial nerve paresis in 4.5% to 17.7% of cases and postoperative salivary fistula in 6.2% to 8.6% of cases [12]. Another large series (n=418) found transient facial nerve dysfunction in 49% of patients and salivary fistula in 56 out of 418 patients (13.4%), noting that these complications typically resolve with conservative management [13]. In our case, the buccal branch weakness resolved completely within 3 months, consistent with neuropraxia secondary to retraction rather than transection. The salivary fistula resolved with extended suction drainage, pressure dressings, and short-term antisialagogue therapy (glycopyrrolate), without need for surgical re-exploration or botulinum toxin injection. These outcomes underscore the safety of the extraoral approach when executed meticulously, with appropriate intraoperative nerve identification and postoperative complication management protocols in place [10,12].

The limitations of this report include its single-case nature, which precludes generalizability, and the lack of preoperative sialography or sialoendoscopy to definitively map the ductal anatomy. However, given the recurrent nature and prior surgical failures, we believe the extraoral approach was justified and successful. Future studies should consider prospective case series comparing intraoral versus extraoral outcomes for APG mucoceles, including validated quality-of-life measures, scar assessment scales, and long-term recurrence rates.

Conclusion

Complete surgical excision via an extraoral (modified face-lift) approach offers a reliable and effective management strategy for recurrent or large accessory parotid mucoceles. This approach reduces recurrence risk by enabling complete en bloc resection of the cyst, its accessory gland of origin, and its ductal communication. Additionally, it facilitates safe dissection and functional preservation of the facial nerve branches under direct visualization. While temporary complications such as neuropraxia and salivary fistula can occur, they are typically manageable with conservative measures and resolve completely. For patients who have failed prior intraoral excisions, the extraoral approach should be considered the preferred surgical strategy.

Patient Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.]The case report was approved by the University Medical Centre ethics committee.

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