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Parotid Surgery & its Complications & Challenges (Case Report)

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Abstract **Case Report**

Pleomorphic adenoma is the most common benign salivary gland tumor, predominantly affecting the parotid gland. Despite its benign nature, surgical excision carries significant risks, notably facial nerve injury and postoperative complications such as Frey's syndrome. This case report discusses the presentation, diagnosis, surgical management, and postoperative challenges of a long-standing parotid tumor in a male patient, emphasizing the delicate balance between complete tumor removal and preservation of facial nerve function. A 58-year-old male, Mr. Toslim Ali, presented with a ten-year history of a slowly enlarging, painless left parotid swelling extending from the preauricular region to the upper neck. Clinical and imaging findings were consistent with a parotid mass. Fine needle aspiration cytology (FNAC) suggested a benign lesion. A superficial parotidectomy was performed under general anesthesia. Intraoperative findings revealed a well-encapsulated mass adherent to the parotid fascia but without evidence of deep lobe invasion. Facial nerve branches were carefully dissected and preserved. Histopathology confirmed pleomorphic adenoma. Postoperatively, the patient recovered without major complications, experiencing only mild transient facial weakness that resolved within four weeks. This case underscores the clinical importance of early surgical intervention in pleomorphic adenoma, meticulous intraoperative dissection for facial nerve preservation, and the need for patient counseling regarding potential complications. The discussion integrates literature on surgical approaches, risk factors, and preventive techniques for parotidectomy-related complications such as facial nerve injury and Frey's syndrome.

Keywords: Pleomorphic adenoma, Parotidectomy, Facial nerve preservation, Frey's syndrome, Surgical complications.

INTRODUCTION

Pleomorphic adenoma, also known as a benign mixed tumor, is the most common salivary gland neoplasm, accounting for approximately 60–70% of all parotid gland tumors and about 80% of all benign salivary gland neoplasms (Guntinas-Lichius *et al*., 2006). The tumor is characterized by a slow-growing, firm, and painless mass, usually located in the preauricular or infra-auricular region. It typically affects individuals between the third and fifth decades of life, with a slight female predominance. Histologically, pleomorphic adenoma exhibits a biphasic composition, containing both epithelial and myoepithelial components embedded within a chondromyxoid or fibrous stroma, reflecting its diverse histopathological architecture.

Although pleomorphic adenoma is benign, its clinical significance lies in its recurrence potential and risk of malignant transformation if not completely excised. Incomplete removal or capsular rupture during surgery may result in tumor seeding and local recurrence rates of up to 45%, while carcinoma ex pleomorphic adenoma can occur in 2–10% of long-standing cases (Witt, 2000). Hence, achieving complete excision with adequate margins remains the cornerstone of effective management.

The parotid gland's complex anatomy adds considerable difficulty to surgical intervention. The gland is divided into superficial and deep lobes by the facial nerve, which branches into five major divisions—temporal, zygomatic, buccal, marginal mandibular, and cervical—that supply motor innervation to the muscles of facial expression. Preservation of these branches during surgery is of paramount importance, as injury may lead to temporary or permanent facial paralysis,

significantly impacting a patient's aesthetic appearance, speech, mastication, and psychological well-being.

Furthermore, several postoperative complications can occur following parotidectomy, including Frey's syndrome (gustatory sweating), sialocele formation, salivary fistula, hematoma, and cosmetic deformity. Among these, Frey's syndrome remains particularly distressing for patients, manifesting as sweating and flushing of the preauricular skin during eating, caused by aberrant regeneration of parasympathetic fibers. Advances such as intraoperative facial nerve monitoring, interpositional tissue flaps (e.g., sternocleidomastoid or SMAS flap), and minimally invasive approaches have significantly reduced morbidity and improved postoperative outcomes (Clayman *et al*., 2006; Chiesa-Estomba *et al*., 2021).

This case study presents the clinical course of Mr. Toslim Ali, a patient with a long-standing pleomorphic adenoma of the left parotid gland, who experienced delayed medical consultation resulting in significant tumor enlargement. The report discusses the diagnostic evaluation, surgical challenges, intraoperative decision-making, and postoperative management, along with a review of relevant literature. The case emphasizes the critical balance between complete tumor excision and preservation of facial nerve function, reflecting the complexities commonly encountered in parotid surgery, particularly in resource-limited healthcare settings.

CASE

Patient Description

The patient, Mr. Toslim Ali, a 58-year-old male from a rural district of Bangladesh, presented in Malleus Ent Specialized Hospital with the chief complaint of a gradually enlarging swelling on the left side of his face. The swelling was located near the angle of the mandible, extending upward toward the preauricular area and inferiorly to the upper part of the neck. The patient reported a long-standing history of this mass, which had caused noticeable facial asymmetry and cosmetic disfigurement but no significant pain. He was of average build and nutrition, appeared alert and cooperative, and was in no acute distress at presentation.

The patient denied any history of tobacco smoking, betel nut chewing, or alcohol consumption, and there was no family history of salivary gland tumors, head and neck malignancy, or autoimmune disease. His primary concern was the progressive increase in tumor size and the psychosocial impact of the facial deformity, as he worked in a social environment that required daily interactions with others. He expressed significant anxiety about the possibility of cancer, particularly due to the visible deformity and gradual enlargement over many years.

Case History

According to the patient's account, the swelling was first noticed approximately ten years ago as a small, pea-sized, painless lump in front of his left ear. Over time, the mass increased slowly but steadily in size. There was no associated pain, discharge, ulceration, or facial weakness during the initial years of progression. The growth remained insidious, without any acute inflammatory episodes or fluctuation in size. The patient occasionally experienced a sensation of heaviness and mild discomfort on the affected side but denied any trismus, dysphagia, or altered taste sensation.

Due to limited access to specialized healthcare and financial constraints, Mr. Ali initially sought advice from local practitioners and traditional healers who reassured him that the lump was benign. Consequently, he did not pursue further diagnostic evaluation or imaging. However, during the past two years, the swelling expanded noticeably, extending from the preauricular region to the upper neck, causing significant cosmetic concern. He began to experience psychological distress, fearing malignancy and social embarrassment, which ultimately prompted him to seek medical evaluation in Malleus Ent Specialized Hospital.

There was no prior history of radiation exposure, trauma to the parotid region, or chronic infection. His past medical history was unremarkable, with no known hypertension, diabetes, or systemic illness.

Physical Examination Results

On general physical examination, Mr. Ali was afebrile, hemodynamically stable, and appeared clinically well. There were no signs of cachexia, weight loss, or systemic illness, which further suggested a benign process.

Local examination of the parotid region revealed a firm, lobulated mass measuring approximately 6 × 5 cm situated over the left parotid area. The swelling extended superiorly to the zygomatic arch, inferiorly to the angle of the mandible, anteriorly up to 2 cm in front of the tragus, and posteriorly towards the upper part of the sternocleidomastoid muscle. The surface of the swelling was smooth but slightly irregular, and the overlying skin was normal in color and texture without any ulceration, erythema, or local warmth.

On palpation, the mass was non-tender, firm in consistency, and mobile over the underlying structures. It was not fixed to the skin or deeper tissues and did not move with mastication, indicating that the lesion was confined to the parotid gland and did not involve the masseter or pterygoid muscles. No pulsation, bruit, or fluctuation was noted. The Stenson's duct orifice appeared normal on intraoral inspection, with no evidence of discharge or secondary infection. The

mucosa of the oral cavity and the parapharyngeal space were unremarkable.

Facial nerve examination was performed meticulously to assess motor function in all five branches: temporal, zygomatic, buccal, marginal mandibular, and cervical. All branches were found to be functionally intact, with symmetrical facial expressions and no deviation of the mouth or lagophthalmos. Cervical lymph nodes were not palpable, indicating an absence of regional lymphadenopathy or metastatic spread.

Investigations

To establish a definitive diagnosis and plan appropriate management, a comprehensive set of investigations was carried out.

1. **Fine Needle Aspiration Cytology (FNAC):** FNAC of the parotid mass revealed clusters of epithelial and myoepithelial cells arranged within a chondromyxoid stroma, consistent with the cytomorphologic pattern of pleomorphic adenoma. There was no cytological atypia, necrosis, or mitotic activity, ruling out malignancy.
2. **Imaging Studies:** A high-resolution ultrasound of the left parotid gland demonstrated a well-circumscribed, hypoechoic lesion localized to the superficial lobe of the parotid gland. The internal echotexture was heterogeneous but encapsulated, without cystic degeneration or calcification. To further delineate the extent and relationship with adjacent structures, a contrast-enhanced computed tomography (CT) scan of the head and neck was performed. The CT scan confirmed a 6.2 × 4.8 cm encapsulated soft tissue mass confined to the superficial lobe of the parotid gland. The deep lobe, mandible, and parapharyngeal space were normal, and no invasion of adjacent structures or lymphadenopathy was observed.
3. **Laboratory Tests:** Routine preoperative laboratory investigations, including complete blood count (CBC), serum electrolytes, renal and liver function tests, and blood glucose, were within normal physiological limits. A chest X-ray and ECG showed no abnormalities, confirming the patient's fitness for general anesthesia.

Treatment Plan

Considering the benign nature, superficial location, and size of the lesion, a decision was made to perform a left superficial parotidectomy under general anesthesia. The surgical objective was to achieve complete excision of the tumor with a clear margin of normal tissue while ensuring preservation of the facial nerve.

Prior to surgery, comprehensive preoperative counseling was conducted with the patient and his family. The nature of pleomorphic adenoma, its benign yet recurrent potential, and the importance of total excision were clearly explained. The patient was informed of possible surgical risks, including temporary or permanent facial nerve paralysis, Frey's syndrome, salivary fistula, hematoma formation, and tumor recurrence. Informed written consent was obtained following this discussion.

Surgical Procedure

The patient was placed under general anesthesia with endotracheal intubation. The surgical field was prepared and draped aseptically. A modified Blair incision was marked and made, extending from the preauricular crease, curving around the lobule of the ear, and descending into a natural neck crease below the angle of the mandible. Skin flaps were raised in the subcutaneous plane to expose the parotid fascia.

The main trunk of the facial nerve was identified at its emergence from the stylomastoid foramen, using key anatomical landmarks including the tragal pointer, posterior belly of the digastric muscle, and the tympanomastoid suture line. A nerve stimulator was used to confirm the identification. Subsequent dissection was carried out meticulously under loupe magnification to expose and preserve all five major branches of the facial nerve — temporal, zygomatic, buccal, marginal mandibular, and cervical.

A well-encapsulated tumor within the superficial lobe of the parotid gland was exposed and excised en bloc, including a thin rim of normal parotid tissue to ensure complete removal and prevent recurrence. The sternocleidomastoid muscle flap was rotated and sutured into the defect to restore facial contour and reduce the risk of Frey's syndrome, in line with the technique described by Filho *et al*. (2004).

Hemostasis was carefully achieved, and a negative pressure suction drain was placed in the wound bed. The incision was closed in three layers — subcutaneous, platysma, and skin — using absorbable and non-absorbable sutures.

- Intraoperative Duration: 2 hours 40 minutes
- Estimated Blood Loss: 120 mL
- Intraoperative Complications: None reported

Expected Outcome

The expected postoperative outcome was complete tumor excision with intact facial nerve function, a low risk of recurrence, and minimal cosmetic deformity. The use of a muscle flap was anticipated to reduce postoperative contour depression and Frey's syndrome incidence.

Postoperative Course and Actual Outcome

The postoperative course was uneventful. The patient remained hemodynamically stable with no immediate complications such as bleeding or hematoma. The drain output was minimal and was removed after 48 hours. Analgesics and antibiotics were administered prophylactically. The wound healed primarily without infection, and sutures were removed on the seventh postoperative day.

During early postoperative evaluation, the patient exhibited a mild transient weakness of the marginal mandibular branch of the facial nerve, observed as slight asymmetry of the lower lip during smiling. However, this deficit was temporary and resolved completely within four weeks. No evidence of Frey's syndrome**,** sialocele, or salivary fistula developed during the follow-up period.

The final histopathological examination confirmed the diagnosis of pleomorphic adenoma (benign) with clear surgical margins, verifying complete excision of the tumor. The patient was discharged in good condition on the seventh postoperative day, with advice for regular follow-up every three months for the first year to monitor for recurrence.

At the most recent follow-up, facial symmetry was fully restored, nerve function was normal, and the cosmetic outcome was satisfactory to the patient. He expressed psychological relief and improved self-confidence post-surgery.

Figure 1A: Doctor carefully examining a patient gradually enlarging swelling on the left side of his face

Figure 1A: After clinical assessment patient without beard

DISCUSSION

Overview and Significance

This case highlights the complex balance between achieving complete tumor excision and preserving facial nerve integrity in parotid gland surgery. The surgical management of pleomorphic adenoma of the parotid gland remains a well-recognized challenge because of the gland's intricate anatomical relationship with the facial nerve and its branches. In the case of Mr. Toslim Ali, the situation was further complicated by a

prolonged delay in medical consultation, which allowed the tumor to enlarge significantly before treatment was sought. Such delays are frequently observed in resource-limited settings like rural Bangladesh, where limited access to specialized healthcare, financial constraints, and lack of awareness often lead to late presentation and larger, technically demanding tumors.

Pleomorphic adenoma is the most common benign neoplasm of the parotid gland, representing approximately 60–70% of all parotid tumors. It typically presents in middle-aged adults, with a slight female predominance, and progresses slowly and painlessly over several years. Due to its indolent course and absence of early symptoms, patients often underestimate its significance, resulting in delayed presentation and surgical management, as seen in this case. Early recognition and timely surgical intervention are critical to minimizing both operative difficulty and postoperative morbidity.

Surgical Complications and Challenges

Parotidectomy presents unique surgical challenges due to the close anatomical proximity of the facial nerve and its branches to the tumor-bearing glandular tissue. Preservation of nerve function requires a delicate balance between adequate oncologic resection and meticulous microsurgical dissection. Any inadvertent injury or traction can lead to temporary or permanent facial nerve dysfunction, which profoundly affects both cosmetic appearance and psychosocial well-being.

In this case, careful dissection using anatomical landmarks and intraoperative nerve stimulation successfully prevented major nerve injury. The patient experienced only a transient weakness of the marginal mandibular branch, which resolved spontaneously within four weeks. This outcome aligns with published data, where the incidence of temporary paresis following superficial parotidectomy ranges between 16% and 38%, and permanent paralysis occurs in less than 4% of cases (Guntinas-Lichius *et al*., 2006). The preservation of function in this patient demonstrates the importance of surgeon experience, detailed anatomical knowledge, and careful intraoperative technique.

Another major challenge following parotid surgery is the potential development of Frey's syndrome (gustatory sweating). This condition arises from the aberrant reinnervation of parasympathetic fibers to the sweat glands, causing sweating and flushing over the preauricular area during mastication. The reported incidence varies widely, from 10% to 60%, depending on the surgical technique and method of detection (Li *et al*., 2015; Clayman *et al*., 2006). Several strategies have been introduced to reduce the risk of Frey's syndrome, including the use of interpositional tissue flaps such as the sternocleidomastoid muscle flap, temporoparietal fascia flap, and superficial musculoaponeurotic system (SMAS) flap, as well as fat grafting techniques (Torretta *et al*., 2012). In symptomatic cases, botulinum toxin injections have also shown efficacy for temporary relief (Mantelakis *et al*., 2021).

In this case, the sternocleidomastoid muscle flap was used to fill the surgical defect, serving a dual purpose: it provided cosmetic contour restoration and reduced the risk of Frey's syndrome by acting as a biological barrier between the parotid bed and the overlying skin. This approach is consistent with findings from Filho *et al*. (2004) and Curry *et al*. (2009), both of whom demonstrated significant reductions in postoperative Frey's syndrome incidence when interpositional flaps were employed.

Role of Intraoperative Nerve Monitoring

Modern advancements in surgical technology have introduced intraoperative facial nerve monitoring (IFNM) as a valuable adjunct to enhance nerve identification and preservation. Although anatomical identification of the facial nerve trunk remains the gold standard, the use of nerve stimulators and electrophysiologic monitoring provides real-time feedback, helping to minimize traction and thermal injury during dissection. A meta-analysis by Chiesa-Estomba *et al*., (2021) reported that intraoperative monitoring significantly reduces the incidence of postoperative facial nerve dysfunction, particularly in revision or deep lobe surgeries.

In this case, both anatomical landmarks—including the tragal pointer, posterior belly of the digastric muscle, and tympanomastoid suture—and nerve stimulation were used to accurately identify the facial nerve trunk. This combination approach allowed for safe and effective dissection, resulting in complete tumor excision without permanent nerve deficit. The successful outcome emphasizes that while intraoperative nerve monitoring enhances surgical safety, it should complement—not replace—comprehensive anatomical understanding.

Histopathological Considerations

Histopathologically, pleomorphic adenoma is characterized by a mixture of epithelial and myoepithelial cells embedded within a chondromyxoid or mucoid stroma. The tumor typically exhibits a well-formed capsule, although incomplete encapsulation may occur, predisposing to microscopic extensions into surrounding parotid tissue. These extensions, if left behind, are the main cause of local recurrence following excision. Recurrence rates have been reported as 1–5% after formal parotidectomy but may rise to up to 45% following enucleation or incomplete excision.

In this patient, histopathology confirmed a benign pleomorphic adenoma with no capsular breach, perineural invasion, or evidence of malignant transformation. The presence of clear surgical margins

validated the adequacy of excision and confirmed the curative intent of the procedure. Given the tumor's benign nature but known potential for recurrence or malignant change if incompletely excised, long-term follow-up remains essential to ensure durable disease control.

Psychological and Socioeconomic Aspects

Beyond the clinical and technical dimensions, this case underscores significant psychological and socioeconomic implications of delayed medical care. Mr. Ali's ten-year delay in seeking professional evaluation was primarily due to limited financial resources, lack of awareness, and inadequate healthcare accessibility in his rural community. Such systemic barriers are common in developing countries and often lead to advanced disease presentation that requires more complex surgical intervention.

The psychological burden of living with a large facial tumor was considerable for the patient, manifesting as social withdrawal, embarrassment, and anxiety regarding malignancy. Successful surgery not only restored his facial symmetry but also significantly improved his self-esteem and mental well-being. This aspect highlights the broader impact of reconstructive head and neck surgery on quality of life, beyond mere tumor removal.

From a public health perspective, this case emphasizes the importance of community-level awareness programs, encouraging early evaluation of facial or neck masses, and improving access to specialized otolaryngology and head and neck surgical services in peripheral regions.

The clinical management and outcomes in this case correspond closely with findings from several key studies in the literature. Filho *et al*. (2004) demonstrated that the use of the sternocleidomastoid flap significantly reduces the risk of postoperative Frey's syndrome while improving cosmetic contour. Similarly, Curry *et al*. (2009) confirmed through a meta-analysis that interpositional tissue barriers, including local muscle or fascia flaps, substantially lower postoperative morbidity. Moeller *et al*. (2024) reviewed contemporary advancements in parotidectomy, emphasizing that reconstructive strategies tailored to defect size and location enhance both functional recovery and aesthetic outcomes. Witt (2000) also reported that soft-tissue reconstruction correlates with improved facial contour and decreased Frey's syndrome incidence, supporting the reconstructive approach applied in this case.

Thus, the surgical management and outcomes in this patient are consistent with the current best practices in parotid surgery. The combination of nerve preservation, anatomic precision, flap reconstruction, and comprehensive follow-up aligns with global standards aimed at optimizing patient safety and long-term satisfaction.

This case provides several instructive lessons for clinical practice. Firstly, early diagnosis and intervention are crucial, as delayed presentation increases tumor size, surgical complexity, and risk of nerve injury. Secondly, preoperative counseling should be comprehensive, ensuring that patients understand both the nature of their disease and potential postoperative complications. Thirdly, facial nerve preservation remains the cornerstone of successful parotid surgery, requiring precise anatomical dissection and, when possible, adjunctive nerve monitoring. Fourthly, the use of interpositional flaps or fat grafts effectively reduces the risk of Frey's syndrome and improves aesthetic outcomes. Finally, long-term postoperative surveillance is indispensable to detect recurrence, assess nerve recovery, and address late complications such as Frey's syndrome or contour deformities.

CONCLUSION

This case of pleomorphic adenoma of the left parotid gland in a 58-year-old male highlights the surgical precision and multidisciplinary approach required for optimal management. The successful outcome, with complete tumor excision and preserved facial function, reflects adherence to established surgical principles.

While benign, pleomorphic adenomas demand timely surgical intervention, meticulous nerve dissection, and patient-centered care. Preventive techniques, such as interpositional muscle flaps, remain vital in reducing complications like Frey's syndrome.

Ongoing clinical audits, public awareness, and training in advanced parotidectomy methods are essential to improve patient outcomes and reduce surgical morbidity in resource-constrained settings like Bangladesh.

REFERENCES

- Li, C., Wu, F., Zhang, Q., Gao, Q., Shi, Z., & Li, L. (2015). Interventions for the treatment of Frey's syndrome. *Cochrane Database of Systematic Reviews*, *2015*(2), CD009959.
- Clayman, M. A., Clayman, S. M., & Seagle, M. B. (2006). A review of the surgical and medical treatment of Frey syndrome. *Annals of Plastic Surgery*, *57*(5), 581–584.
- Mantelakis, A., Lafford, G., Lee, C. W., Spencer, H., Deval, J.-L., & Joshi, A. (2021). Frey's Syndrome: A review of aetiology and treatment. *Cureus*, *13*(12), e20107.
- Guntinas-Lichius, O., Gabriel, B., & Klussmann, J. P. (2006). Risk of facial palsy and severe Frey's

syndrome after conservative parotidectomy for benign disease: analysis of 610 operations. *Acta Oto-Laryngologica*, *126*(10), 1104-1109.

- Curry, J. M., King, N., Reiter, D., Fisher, K., Heffelfinger, R. N., & Pribitkin, E. A. (2009). Meta-analysis of surgical techniques for preventing parotidectomy sequelae. *Archives of Facial Plastic Surgery*, *11*(5), 327-331.
- Filho, W. Q., Dedivitis, R. A., Rapoport, A., & Guimarães, A. V. (2004). Sternocleidomastoid muscle flap preventing Frey syndrome following parotidectomy. *World Journal of Surgery*, *28*(4), 361-364.
- Moeller, K., Esser, D., & Dietz, K. (2024). Surgical approach to Frey's syndrome: A scoping review of techniques and outcomes. *Journal of Clinical Medicine*, *14*(2), 415.
- Witt, R. L. (2000). Frey's syndrome and parotidectomy flaps: A retrospective cohort study. *Otolaryngology—Head and Neck Surgery*, *122*(2), 201–203.
- Torretta, S., Pignataro, L., Capaccio, P., Brevi, A., & Mazzola, R. (2012). Fat injections for the management of post-parotidectomy Frey syndrome: A technical note. *Journal of Cranio-Maxillofacial Surgery*, *40*(2), 173–176.
- Chiesa-Estomba, C. M., Larruscain-Sarasola, E., Lechien, J. R., *et al*. (2021). Facial nerve monitoring during parotid gland surgery: A systematic review and meta-analysis. *European Archives of Oto-Rhino-Laryngology*, *278*(3), 933-943.