

## Facial Palsy due to Parotid Abscess: An Unusual Complication

### Case Report

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### Abstract

Facial nerve palsy is usually associated with a malignant parotid neoplasm; it is highly unusual for it to result from a benign situation, such as inflammation or infection of the parotid gland. Surgery along with prompt medical treatment is the mainstay, and in the majority of the patients, nerve paralysis recovers in the follow-up period. We report a case of a 50-year-old non-diabetic non-hy-

pertensive female who presented with odynophagia, left-sided parotid swelling, and left facial nerve palsy. The diagnosis of facial nerve palsy due to a parotid abscess extending to the parapharyngeal space was made. Facial palsy fully recovered within 2 months.

**Keywords:** Facial palsy, parotid abscess, parapharyngeal extension

### Introduction

Facial nerve paralysis due to parotid pathology is almost always caused by malignant neoplasm of the gland. Though the benign conditions of the parotid gland, such as benign mixed tumors, Warthin's tumor, sarcoidosis, and parotid cysts can affect the facial nerve, occurrence of facial nerve palsy as a result of a parotid abscess is exceedingly rare, with only nine previously reported cases (1). Parotid abscesses may arise from ductal ectasia, primary parenchymal involvement, or infection of the intra-parotid lymph nodes. Although a conservative treatment with hydration and administration of broad-spectrum antibiotics are the first choice, surgical intervention may be required in patients with no response to medical treatment (2).

### Case Report

A 50-year-old non-diabetic non-hypertensive female was admitted to the emergency department of our hospital with complaints of diffuse swelling in the left parotid region and pain during mastication and swallowing for the past 5 days. Symptoms of left facial nerve palsy started just 3 hours before admission, which forced her to seek

medical help; she had not taken any medication till then. There was no history of dental pain or ear discharge.

On examination, she was febrile and the general appearance of the patient was not good. There was a diffuse, non-fluctuant, tense, and tender swelling of about 6-7 cm in the left parotid region. The ear lobule was pushed forward. There was facial nerve paralysis of grade 4 (House-Brackmann classification), as the patient was having incomplete eye closure, asymmetry of the mouth, and no motion in the forehead (Figure 1). Restricted mouth opening due to trismus was present, and examination of oral cavity showed medial bulge of the left lateral pharyngeal wall, displacing the uvula and tonsillar pillar (Figure 2). Complete blood count revealed leukocytosis (16500/ $\mu$ L.) with predominant neutrophils (91%).

An urgent contrast-enhanced computed tomography (CT) scan of the parotid region was performed, which was suggestive of a left parotid abscess with parapharyngeal extension (Figure 3, 4). Broad-spectrum intravenous antibiotics (IV co-amoxiclav 1.2 g three times over 24 hours, ami-



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kacin 500 mg twice daily, and metronidazole 500 mg/100 mL three time daily) were started immediately along with intravenous rehydration.

Incision and drainage of the abscess was performed under general anesthesia, evacuating around 80 cc of pus, the culture of which showed mixed growth comprising of *Fusobacterium*, *Bacteroides fragilis*, *Staphylococcus aureus*, and *Klebsiella*. Antibiogram results showed *Fusobacterium* and *Bacteroides fragilis* sensitive to metronidazole and amoxycillin, and both *Staphylococcus aureus* and *Klebsiella* were found to be sensitive to amikacin. In the immediate post-operative period, the patient's symptoms were partially relieved, except for facial palsy. Daily dressing was done for 10 days, and on the 11<sup>th</sup> day, she was discharged with closure of the wound, which was done using non-absorbable sutures; she had slight improvement in the facial paresis at the time of discharge (Figure 5). The patient was called for regular follow-up visits, and within 2 months, her facial nerve palsy showed complete recovery.

Written informed consent was taken from the patient who participated in this study.

### Discussion

Parotid abscess usually occurs in elderly immunocompromised persons who are debilitated with systemic illness (3). Tan and Goh (4), in a series of 15 patients with parotid abscess, revealed that the mean age of presentation was 51 years and that six of them were diabetic. Even in neonates and infants, suppurative parotitis with facial nerve palsy has been described (2, 5). The predisposing factors can be poor oral hygiene, dehydration, and obstruction of Stenson's duct. The most likely route for the entry of the causative organism is ascending migration from the oral cavity to the salivary duct.



Figure 2. Parapharyngeal extension of parotid abscess as evident by the medial push of the uvula and tonsillar pillar



Figure 3. CT image showing left-sided parotid abscess



Figure 1. Left-sided parotid swelling with signs of facial nerve palsy



Figure 4. CT image showing left-sided parotid abscess



Figure 5. Clinical image on the 11<sup>th</sup> post-operative (discharge) day showing slight improvement in facial paresis

It is extremely rare to have facial nerve palsy due to a parotid abscess. In total, there are around 16 reported cases of involvement of the facial nerve in benign and inflammatory conditions of the parotid gland, and only nine of them are due to a parotid abscess (1, 6). The nerve is either partially or completely affected resulting in varied degrees of paralysis.

Most of the parotid abscesses resulting in facial palsy are because of bacteria, with *S. aureus* being the commonest, but there is a report mentioning *Candida albicans* parotid abscess with facial nerve dysfunction (7). Even viral parotitis (mumps) can cause facial palsy (8).

The exact mechanism for involvement of the facial nerve in non-malignant conditions of the parotid gland, as in this case, remains unclear. It had been postulated that the nerve is affected due to perineuritis and local toxic effects along with ischemic neuropathy because of rapidly increasing swelling causing pressure over the nerve (9).

The CT scan is the imaging modality of choice, as there may be difficulty in differentiating between acute parotitis and parotid abscess because of the tense parotid fascia. Sometimes, an underlying malignancy is detected on CT, which causes facial nerve palsy (10). Contrast-enhanced CT in our patient showed parotid abscess with parapharyngeal extension.

In the pre-antibiotic era, parotid abscesses were known for poor outcomes with a high mortality, which has dramatically come down nowadays due to use of proper antibiotics (11).

Once the diagnosis of parotid abscess is established, surgical treatment (incision and drainage) along with broad-spectrum antibiotics should always be taken up and is the treatment of choice (1).

The Blair technique is used for incision and drainage (12). A pre-auricular retromandibular incision is given; flaps of skin and subcutaneous tissue are reflected superficial to the parotid fascia; and then, using a hemostat, multiple openings are made always parallel to the branches of the facial nerve.

Facial nerve palsy in our patient recovered fully within 2 months, although there have been cases with residual paralysis even after 6 months (3).

### Conclusion

Facial nerve palsy as a complication of parotid abscess is very rare. Radiological imaging, such as the CT scan, greatly helps in making an early diagnosis after which the treatment is initiated, with surgery being the mainstay along with broad-spectrum antibiotics. In most of the cases, there is complete recovery of facial nerve dysfunction.

**Informed Consent:** Written informed consent was obtained from patient who participated in this study.

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