

## A Rare Case of Parotid Abscess Associated with Facial Nerve Palsy

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Parotid infection/abscess leading to facial nerve palsy is an extremely rare complication. Normally, malignant parotid mass is associated with facial nerve palsy. We present a case of parotid abscess which was complicated by facial nerve dysfunction and had very late recovery.

**Keywords:** Parotid Mass; Facial Nerve Palsy; Parotid Abscess**Introduction**

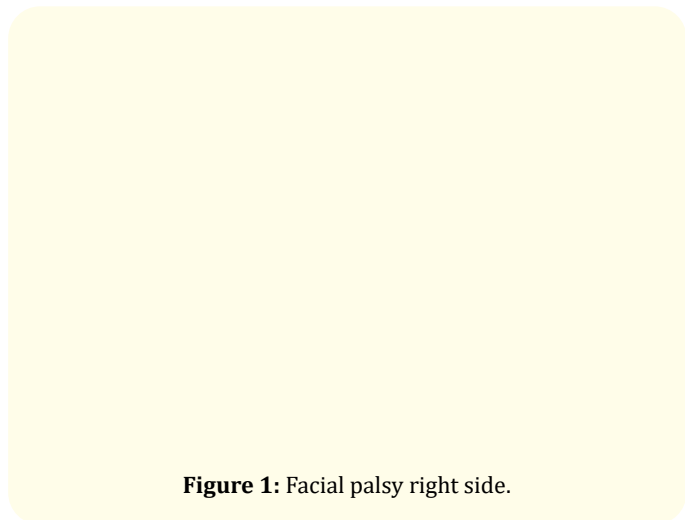
Peripheral lower motor neuron type facial nerve palsy of one side may have an obvious cause (secondary facial nerve palsy) or may be idiopathic without an obvious cause (Bell's palsy). Facial nerve palsy associated with parotid gland pathology generally suggests malignancy. Facial nerve palsy in association with infection of parotid gland is rare. In literature, a few cases of benign lesions of the parotid gland, causing facial nerve palsy have been mentioned. Such lesions can be benign parotid masses (pleomorphic adenomas, Warthin's tumor and benign cysts) or infections involving parotid glands, such as parotitis and parotid abscess [1,2]. Conservative management with high doses of broad-spectrum antibiotics should be tried first. In the most of cases, facial paralysis recovers with such measures. However, the persistence of a parotid mass with continued facial palsy requires further investigations and surgical exploration to rule out the presence of any neoplasm. In this article, we are describing a case of parotid abscess with associated facial nerve dysfunction and it was not associated with

any neoplasm.

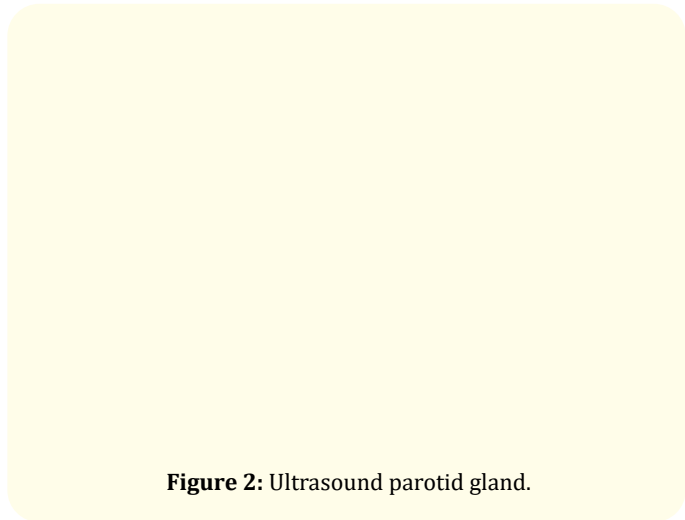
**Case History**

A young male aged 19 years presented with a history of swelling Rt side of the face for 7 days. To begin with, it was involving the infra-auricular area and was tender. He took treatment from local doctors. After 3 days, he started to have a deviation of angle of mouth to left and was unable to close his right eye. After 4 days of it, the patient presented to our OPD. A brief history and examination were done. The rest of ENT examinations was normal. The patient was admitted and his routine blood investigations came out to be consistent with acute inflammation except for his ESR which was 40 mm. An ultrasound scan of his right parotid demonstrated diffuse swelling with abscess formation in relation to the posterior part of it. The size of the abscess was 2.0 x 1.8 cm. FNAC was done and frank pus was aspirated (around 7cc). It was sent for C&S and CV NAT. C V NAT test was negative. Patient was put on broad spectrum intravenous antibiotic, while waiting for the results culture

and sensitivity test of the pus. The pus was sterile as the patient was already taking antibiotics. The pus was recollected again and on next day I and D was done using a standard parotidectomy incision, and the abscess was drained by opening the fascia of the gland taking care not to injure the branches of the facial nerve. The daily dressing was done and the swelling reduced in the next 7 days. The patient was put on standard treatment for facial palsy (prednisolone, methylcobalamin and physiotherapy), but showed little improvement. The patient was reviewed after a month, but still, there was residual facial palsy. His MRI brain and parotid gland was done. Except for reduced parotid mass, the rest of the MRI was normal. The patient was again put on methylcobalamin and physiotherapy. His facial nerve recovered in the next 20 days.



**Figure 1:** Facial palsy right side.



**Figure 2:** Ultrasound parotid gland.

## Discussion

The parotid gland is prone to infection and the factors implicated in the development of parotitis may include calculi, duct stricture, dehydration, autoimmune disorders and congenital sialectasis. The saliva produced by the parotid gland has weak bacteriostatic activity and there is less concentration of lysozymes and IgA in it, as compared to the saliva of the mandibular gland. This fact explains the commoner suppuration and abscess formation within parotid glands. Other contributing factors include poor oral hygiene, immunosuppression, diabetes mellitus, reduced resistance to pathogens, and lack of mastication as a stimulus to saliva production.

Hajjiannou JK, *et al.* [3] have suggested that the scanning of gland should be done in patients who shows no response to medical therapy in 2 - 3 days. Ultrasound scan (US) is the initial scanning investigation of choice for the assessment of palpable mass of the parotid gland. In our case as the patient already presented late for treatment and has facial nerve palsy, an ultrasound scan was done at the time of admission. It helped in deciding the mode of further management.

An ultrasound scan can differentiate a solid lesion from a cystic one, a diffuse parotid swelling from lymph nodes or an abscess. It can determine malignant features of the examined lesions quite fairly. In acute inflammatory conditions, an ultrasound scan can help to differentiate between obstructive or non-obstructive sialadenitis. It can also show abscess formation within the gland and the measurement of the collection may be assessed.

As the ESR of the patient was increased and in India, tubercular infections are common, initially aspiration of pus was done and it was sent for CB Nat test. Reaccumulation of pus and increasing facial palsy led to the decision for incision and drainage. Care was taken to avoid injury to the facial nerve during this procedure.

Zimmermann J, *et al.* [4] found that the use of MRI does not provide any additional diagnostic advantage as compared to ultrasound scanning on the day of hospital admission. It is a costly investigation also. In the present case, the persistence of facial nerve palsy for more than a month even after recovery of parotid lesion dictated the need for an MRI scan assessment.

Palsy of the peripheral part of the facial nerve is a very rare clinical presentation in inflammatory processes and benign lesions, as compared to the intracranial part. Inflammation and abscess of the parotid gland are also extremely rare causes of facial nerve palsy and very few cases have been reported [5].

Makeham TP, *et al.* [6] found in their study regarding infective causes of facial nerve palsy that only one of the 29 patients with 30 facial nerve paralyzes was due to suppurative parotitis. The rest were due to otologic diseases.

Facial nerve involvement can also be explained based on compression, especially in association with local inflammation [7]. However, the etiology of paralysis remains largely unknown. Streppel, *et al.* [8] have suggested that other causes, like the virulence of the offending organisms or perineuritis, may play some role in development of facial nerve paralysis.

Time period of recovery of facial nerve paralysis may range from six weeks [9] to twelve weeks [10].

## Conclusion

Facial nerve paralysis accompanying benign parotid lesions or acute infections is a rare condition. A parotid abscess leading to facial nerve paralysis is even less common. The presence of a malignant lesion must always be ruled out by appropriate tests like scanning and FNAC. Ultrasonography is the initial modality of choice for evaluating palpable abnormalities of the parotid gland, as it is cheap, easily available.

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