Parotid Abscess with Involvement of Facial Nerve Branches

Adile Ozkan1, Ceyda Hayretdag Ors1, Sule Kosar2 and Handan Isin Ozisik Karaman1

ABSTRACT
Facial nerve paresis is only rarely seen with benign diseases of the parotid gland. A 22-year male had muscle loss in the preauricular region of the right side of his face that extended towards the mandibular angle for the last 6 months. The neurological examination did not reveal any pathology other than right preauricular region muscle atrophy that was limited by the mandibular angle. The Electroneuronography (EnoG) provided a ratio of 55.38%, compared the affected side to left side. Ultrasonography of the defined region showed two mass lesions 13.5 x 7 mm and 10 x 5 mm in size in the anteromedial section of the right parotid gland that were close to each other, without internal calcific foci, and heterogenous hyperechogenic structure without internal vascularization. Fine needle aspiration obtained many polymorphonuclear leukocytes, cell debris, a few mononuclear inflammatory cells and many crystalloid structures. The lesion was diagnosed as a parotid abscess. Antibiotic treatment was started for the parotid gland abscess.

Key Words: Parotid abscess, Facial nerve involvement, Muscle atrophy.

INTRODUCTION
Facial nerve paralysis is very common, characterized paralysis of muscles innervated by the facial nerve.1 It is usually idiopathic and diagnosed by exclusion, however, Bell's palsy, iatrogenic injury during a surgical intervention, bacterial or viral infections such as herpes zoster, mumps, are well known etiologic factors.1-3 Facial nerve paresis associated with benign diseases of the parotid gland such as parotid abscess is a very rare condition.2 Approximately 17 cases with facial nerve involvement due to suppurative parotitis or parotid abscess have been reported in the literature.4,5 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.2,6 In this report, we present a case of parotid abscess with involvement of facial nerve branches with right preauricular region muscle atrophy that was limited by the mandibular angle who was successfully managed by conservative approach.

CASE REPORT
A 22-year male presented at the Neurology Outpatients Department of Canakkale Onsekiz Mart University Training and Application Hospital, Turkey, with muscle loss in the preauricular region of the right side of his face that extended towards the mandibular angle for the last 6 months (Figure 1). The neurological examination did not reveal any pathology other than right preauricular region muscle atrophy that was limited by the mandibular angle. The full blood count, routine biochemistry tests, ASO, CRP and sedimentation values were normal. EnoG to evaluate facial nerve integrity revealed 55.38% value when compared response of the unaffected left side to the abnormal right side (Figure 2). Ultrasonography of the defined region showed two mass lesions 13.5 x 7 mm and 10 x 5 mm in size in the anteromedial section of the right parotid gland that were close to each other, contained internal calcific foci, had a heterogenous hyperechogenic structure and no internal vascularization (Figure 3). Ultrasound guided fine needle aspiration and biopsy from the lesion was aspirated. The lesion size reduced to 7 x 3 mm following needle aspiration. The smear preparations were evaluated at the microbiology and pathology laboratory and many polymorphonuclear leukocytes, cell debris, a few mononuclear inflammatory cells and many crystalloid structures were observed, indicating an abscess. The histopathological examination was negative for malignancy. *Staphylococcus aureus* was detected in the culture of aspiration material. No additional pathology was found during consultation by the Otorhinolaryngology Department. Patient was prescribed oral antibiotic therapy (Metronidazole thrice a day, Amoxicillin 1000 mg twice a day) for the parotid abscess. The patient was then followed up. After one month, blood tests and control ultrasonography were normal. Six months later, the atrophic muscle had markedly recovered with physiotherapy.

DISCUSSION
Acute suppurative parotitis is usually seen in patients with diabetes or an immunosuppressive disorder.3,7
Parotid gland lesions that accompany facial nerve paralysis are usually malignant. So far, limited number of cases less than 20 in the English language literature are published where suppurative parotitis and parotid gland abscess have been noted together with facial paralysis. Approximately half of these patients had a parotid abscess. In literature, cases with parotid abscess leads to facial nerve paralysis have been diagnosed in more females rather than males and can be seen at any age from infancy to old age.

Facial nerve dysfunction may develop due to a virulent microorganism, perineuritis or nerve compression. The management of parotid abscess includes administration of broad spectrum antibiotics, hydration and puncture of abscess under ultrasound guidance. During ultrasonography, a fine needle biopsy can be planned to rule out parotid malignancy. Surgical drainage is recommended if clinical condition does not improve and there is no response to medical treatment. This case had no facial paralysis but limited muscle atrophy conforming to the facial nerve branch innervation. The facial nerve ENoG showed pathology on the affected side. Although the present abscess did not cause direct pressure on the facial nerve with a mass effect, it is possible that one of the branches coursing through the parotid gland was injured. This may also be due to the inflammation process and infection around the mass. The treatment approach for this case was medically successful after 3 days and prevented the surgical drainage.

REFERENCES