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CASE REPORT

Frey's Syndrome after Surgery for Fracture of the Mandibular Condyle

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Abstract
This report is of a 55-year-old woman presenting with Frey's syndrome 6 months after surgical fixation of a fracture of the mandibular condyle. Treatment consisted of a fascia lata graft placed under the involved skin. No recurrence of gustatory sweating was observed.

Key words: Fascia lata, Sweating, gustatory, Transplants

Introduction
Frey's syndrome, also known as auriculotemporal syndrome,[1,2] is characterised by sweating, flushing, and a warm sensation in the skin of the preauricular region in the area of sensory distribution of the auriculotemporal nerve during eating. This condition often occurs after parotid surgery, trauma, or an abscess in this region. The primary mechanism for gustatory sweating is aberrant postoperative regeneration of the auriculotemporal nerve, which carries both parasympathetic secretomotor fibres to the parotid gland and sympathetic fibres to the sweat glands of the skin and subcutaneous blood vessels of the preauricular area.[3-6] This report is of a patient with Frey's syndrome occurring after a surgical operation for fracture of the right mandibular condyle.

Case Report
A 55-year-old woman underwent surgical fixation of a fracture of the right mandibular condyle after a road traffic accident. The procedure was performed through a preauricular incision and resulted in satisfactory recovery of occlusal function. However, 6 months after the surgery, the patient noticed that she was perspiring in the preauricular region during meals, and attended the Department of Oral and Maxillofacial Surgery, Toyama Medical and Pharmaceutical University, Toyama, Japan, in June 2003. The condition gradually became more severe.

General examination showed no abnormality. Regional examination showed good healing of the operated site and normal occlusal function, but the patient had diminished sensitivity in the preauricular area. Minor's starch-iodine test[7] was performed to document gustatory sweating. Tincture of iodine was painted onto the affected area and allowed to dry. The painted area was lightly powdered with cornstarch and, subsequently, the patient was given lemon candy to chew for observation of the cornstarch reaction to the tincture of iodine. After 2 minutes, the gustatory sweating was delineated by the appearance of a blue-black area where the sweating had caused a reaction between the starch and iodine. The area of sweating was largest after 2 minutes and 30 seconds, and no further extension was observed (Figure 1). The diagnosis of Frey's syndrome was confirmed.

Transplantation of a facsia lata graft was performed. Under general anaesthesia, a preauricular incision was made and a thin skin flap with a small amount of subcutaneous tissue attached was elevated. A piece of fascia lata was removed from the lateral aspect of the thigh, fashioned into a shape

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Figure 1. Minor's starch-iodine test showing the area of gustatory sweating.

corresponding to the extent of the affected skin, and sutured to the tissue bed (Figure 2). The patient had a good recovery and no symptoms of gustatory sweating were noted 18 months after treatment.

Discussion

Facial cervical gustatory sweating was first reported by Duphenix in 1757 in a patient who had been wounded in the parotid gland.[8] Other reports appeared in 1816[9] and 1853.[10] In 1897, Weber suggested that this syndrome was related to the auriculotemporal nerve in some manner.[11] Later, Frey[12] reported a patient with fascial perspiration when eating that had resulted from a bullet wound to the parotid.[12] Frey pointed out that the sweating was confined to the sensory distribution of the auriculotemporal nerve.[12] Since then, this condition has been called auriculotemporal syndrome or Frey's syndrome. This syndrome has been considered to be 1 of the 3 main postoperative complications of parotidectomy, along with facial palsy and salivary fistula.[6,13] The condition has also been reported to occur following surgical fixation for condylar fracture,[1,14] neck dissection,[15] and excision of the submandibular salivary gland.[16] The mechanisms thought to cause this syndrome include aberrant regeneration,[3,4,6] transaxonal excitation,[17] hypersensitivity,[2] diffusion of acetylcholine,[18] and irritation of the auriculotemporal nerve.[12]

Aberrant regeneration is the generally accepted explanation and has been substantially confirmed.[3,4,6] The auriculotemporal nerve carries the post-ganglionic parasympathetic fibres from the otic ganglion to the parotid gland and causes the gland to secrete. The auriculotemporal nerve also carries sympathetic fibres to sweat glands and blood vessels in the skin in the preauricular area (Figure 3). Trauma and surgical

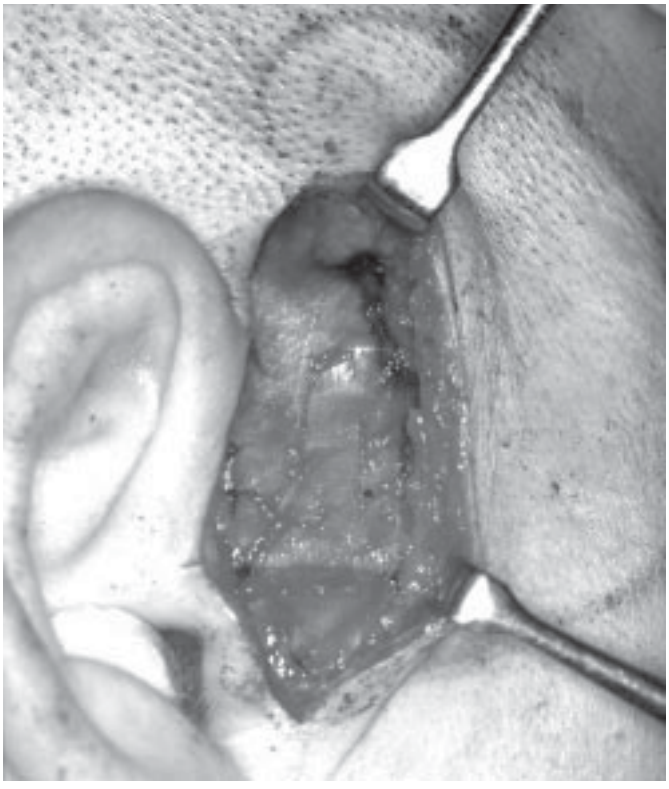

Figure 2. Fascia lata graft sutured in the tissue bed corresponding to the affected area.

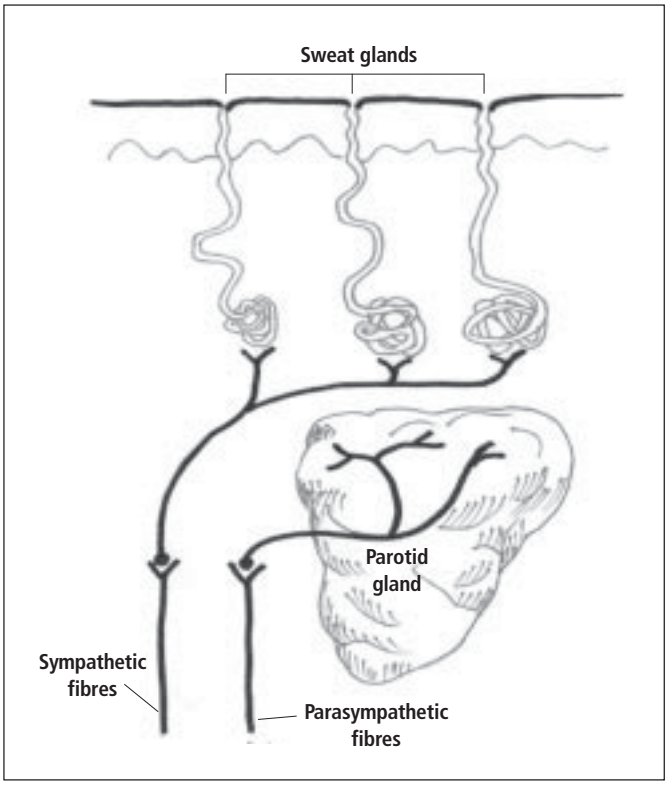

Figure 3. Normal innervations of parasympathetic fibres to the parotid gland and of sympathetic fibres to the sweat glands.