

CLINICAL IMAGES

Pediatric auriculotemporal nerve (Frey) syndrome

Lisa Caulley MD, Paul Hong MD

Competing interests: None declared.

This article has been peer reviewed.

Affiliations: From the Faculty of Medicine (Caulley), University of Toronto, Toronto, Ont.; the IWK Health Centre (Hong), Division of Otolaryngology — Head and Neck Surgery; and the School of Human Communication Disorders (Hong), Department of Surgery, Dalhousie University, Halifax, NS

Correspondence to: Paul Hong, paul.hong@iwk.nshealth.ca

CMAJ 2013, DOI:10.1503/cmaj.120443



Figure 1: Photograph of a 14-month-old boy showing unilateral facial flushing that occurred a few seconds after ingesting solid foods.

A 14-month-old boy was referred to the pediatric otolaryngology clinic with recurrent episodes of redness and warmth over his right cheek. The patient had been born at term by an induced vaginal delivery with the assistance of forceps. Shortly after birth, a 5-mm hematoma was seen in front of his right ear, which subsequently resolved. The episodes of facial flushing, each of which lasted for a few minutes, began when the patient was 6 months old and were always triggered by chewing solid foods. There was no history of pruritis, urticaria or other complaints to suggest a food allergy.

On examination, we noted a warm erythematous area in front of the patient's right ear and over his cheek (Figure 1). After consultations with pediatric dermatology and allergy, auriculotemporal nerve syndrome was diagnosed.

Auriculotemporal nerve syndrome, also known as Frey syndrome, is an uncommon clinical entity in children. It is widely thought to be the result of aberrant cross-innervation of auriculotemporal nerve fibres following injury to this region.¹⁻³ Because both the parasympathetic and sympathetic nerve fibres use acetylcholine neurotransmitters, they can undergo cross regeneration such that impulses to the salivary gland paradoxically stimu-

late the sweat glands and subcutaneous vessels in the distribution of the auriculotemporal nerve.¹⁻³

Pediatric auriculotemporal nerve syndrome can be characterized clinically as facial erythema and warmth; it is less commonly associated with the production of tears, as is seen in adults.^{1,3}

Because the syndrome is believed to be associated with local trauma,¹ operative vaginal deliveries, particularly with the assistance of forceps, may be implicated in the cause of this condition.² The condition has also been reported following trauma (e.g., condylar fracture, post-seizure) and infection (e.g., herpes zoster).^{1,3}

Although long-term follow-up is not well documented in the literature, no proven treatments exist, and spontaneous remission or a dramatic reduction in symptoms has been reported to occur with growth.^{1,3} For this reason, no specific therapy is recommended.^{1,3}

References

1. Dizon MV, Fischer G, Jopp-McKay A, et al. Localized facial flushing in infancy. Auriculotemporal nerve (Frey) syndrome. *Arch Dermatol* 1997;133:1143-5.
2. Karunanathan CG, Kim HL, Kim JH. An unusual case of bilateral auriculotemporal syndrome presenting to an allergist. *Ann Allergy Asthma Immunol* 2002;89:104-5.
3. Cantarella G, Berlusconi A, Mele V, et al. Treatment of Frey's syndrome with botulinum toxin type B. *Otolaryngol Head Neck Surg* 2010;143:214-8.