Accessory Tragus: A Report of 2 Cases

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ABSTRACT

The purpose of this article was to review the embryology of the external ear, as related to the clinical finding of accessory tragus (ear tags). Medical management of the accessory tragus is discussed, as well as differential diagnoses and associated syndromes. A general clinical description of accessory tragus is described, and 2 specific cases in pediatric patients are presented. (J Dent Child 2006;73:42-44)

KEYWORDS: ACCESSORY TRAGUS, FIRST BRANCHIAL ARCH DEFECTS, SECOND BRANCHIAL ARCH DEFECTS, PEDIATRIC, HEAD AND NECK EXAM, EAR TAGS

The tragus is the cartilaginous projection anterior to the external opening of the ear. An accessory tragus is a small elevation of skin that contains a bar of elastic cartilage and is usually found along an imaginary line drawn from the tragus to the angle of the mouth. These uncommon malformations are present at birth and may remain throughout childhood if not removed.

Dental practitioners who perform a thorough head and neck exam will eventually observe an accessory tragus. Detecting and documenting this anomaly may lead to the discovery of other congenital defects of the first branchial arch, some of which have facial and oral implications.

The purposes of this article are to:

1. review the embryology of the external ear;
2. present 2 clinical examples of accessory tragus; and
3. discuss the implications, diagnosis, and management of such findings.

EMBRYOLOGY OF THE EXTERNAL EAR

During the fourth week of embryonic life, the auricle begins to develop around the first branchial groove from tissue contributed by the first (mandibular) and second (hyoid) branchial arches. During the fifth week, 3 hillocks or surface irregularities appear on each arch. These 6 tubercles are often referred to as the "hillocks of His." As the embryo grows, these hillocks move dorsally and develop into the auricle's structures.[1]

The first hillock forms the tragus, the second and third contribute to the helix's anterior crus, the fourth and the fifth become the helix and the anthelix crura, and the sixth forms the antitragus. Until the end of the sixth embryonic week, the contributions of the mandibular and hyoid arches are almost equal. During the subsequent 2 weeks, the mandibular arch mesenchyme gradually decreases, and by birth this arch has contributed approximately 15% of the external ear. The remaining 85% comes from the hyoid arch.[2]

Accessory tragi may occur along the migratory line, as the auricle ascends from the neck area and their origin is the mandibular branchial arch.[2]

CASE 1

A 5-year-old boy came to a private pediatric dental office for his first examination. As part of the new patient examination, the head and neck were observed for any abnormalities or asymmetries. The exam revealed a nodule in front of each ear. The patient's mother stated that they were present at birth and there was no family history of similar nodules. She indicated that his pediatrician had informed her of the nodules and that she would probably have them removed at some future time.

A physical exam of the left ear (Figure 1) revealed a skin-colored, firm, nontender nodule 1 mm x 2 mm in size slightly forward and superior to the tragus. The right ear (Figure 2) had a similar nodule, but it was only 0.5mm x 1mm. No other physical abnormalities were reported by the parent or pediatrician. Intraorally, no abnormalities were found.

CASE 2

A 4-year-old girl presented for her first dental examination. During the normal head and neck examination, 2 raised

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firm nodules were noted anterior to the tragus of the right ear (Figure 3). The nodules were not tender to palpation, had been present since birth, and were located on an imaginary line from the tragus to the corner of the mouth. There were no other physical or developmental symptoms reported by the mother or the pediatrician. As in the first case, no intraoral changes were noted.

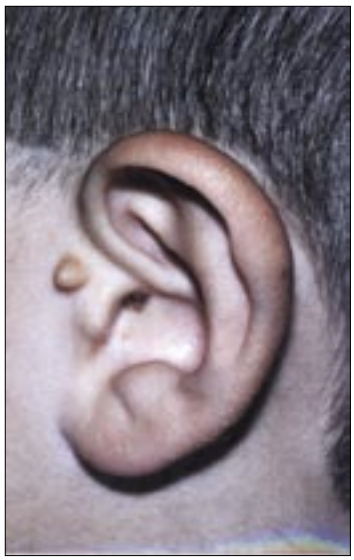

Figure 1. Preauricular nodule on patient's left side (case 1).

The "skin elevations" were not removed because the child's mother felt they did not present a cosmetic or hygiene problem at this time and she had no plans to have them removed.

DISCUSSION

Since the late 1800s, the accessory tragus has been described by numerous names, among them: (1) supernumerary auricle[3]; (2) accessory external ear[4]; (3) skin papillus[5]; (4) polyotia[6]; and (5) ear tag.[7] The term "accessory tragus" is probably a more precise description of this lesion because it represents a minor abnormality of the first branchial arch and the tragus is the only part of the external ear that develops from that structure.[8]

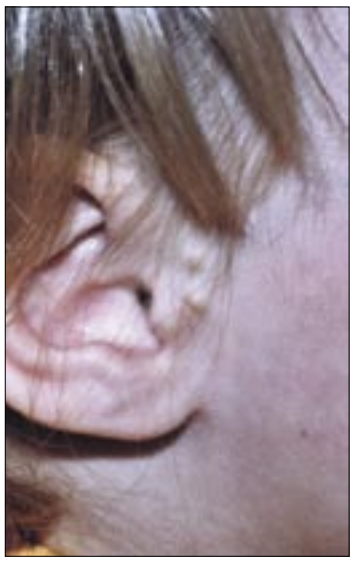

Figure 3. Two preauricular nodules on patient's right side (case 2).

The exact incidence of accessory tragus is unknown, but it has been estimated to be approximately 1.7:1,000.[9] Bilateral lesions are present in about 6% of cases, for a prevalence of between 9:1,000 and 10:100,000.[10] No concrete evidence of a familial connection was found in the reported cases, but there have been several case reports in the literature suggesting familial tendencies.[5,10,11]

Clinically, accessory tragi present as congenital nodules that typically appear singly or in multiples, soft or firm, and skin-colored, and are located in the pre-auricular region, anterior to the tragus. Histologic examination demonstrates mild orthokeratosis overlying the epidermis and numerous vellus hair-containing follicles with accompanying sebaceous glands in the papillary dermis. There is usually cartilage in the center surrounded by adipose tissue.[12]

Several conditions may clinically mimic an accessory tragus: (1) achrocordon (skin tag); (2) auricular fistula; (3) fibroma; (4) polyp; (5) epidermoid cyst; and (6) wattles (fleshy appendage of the neck).[7,12,13] A definitive diagnosis can readily be established after histologic evaluation.

Although most deformities anterior to the tragus occur as limited abnormalities, a small group of patients have coexisting congenital defects principally related to the first branchial arch. Two major conditions are commonly associated with accessory tragus: (1) Goldenhar's syndrome; and (2) Treacher Collins' syndrome. Both of these conditions can have dental implications.

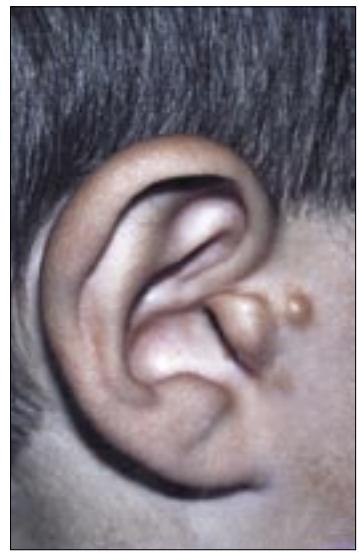

Figure 2. Preauricular nodule on patient's right side (case 1).

Oculo-auriculo-vertebral dysplasia (Goldenhar's syndrome) is probably the only disorder in which at least one accessory tragus is a constant finding. Goldenhar's syndrome is one entity in a family of conditions of hemifacial microsomia, which is a common birth defect involving derivatives of the first and second branchial arches. The clinical features are characterized by: (1) lipodermoids; (2) vertebral abnormalities; and (3) auricular disorders. Facially, the child may have: (1) maxillary and mandibular hypoplasia; (2) antimongoloid slant to the eyelids; and (3) fistulae in front of the tragi.[14] Several other physical findings have been observed, and mental retardation is occasionally noted.[15]

Mandibulofacial dysostosis (Treacher Collins syndrome) is an inherited disorder characterized by multiple disorders of the ear, eye, maxilla, and mandible. This syndrome has several potential dental implications including: (1) hypoplastic maxilla and mandible; (2) high or cleft palate; and (3) macrostomia. It occasionally will have associated accessory tragus.[16,17]

After ruling out any associated syndromes, removal of the nodule may be considered. Esthetics and localized irritation are usually the 2 factors which prompt excision. Most often, the excision occurs shortly after birth. If care is taken to adequately remove the underlying cartilage, healing is unremarkable.[8]

In summary, every patient's dental examination should include an overview of the head and neck. It is inevitable that practitioners will see nodules anterior to the tragus of the ear, and it is important to inform parents of their origin

and significance. Dental health professionals should be cognizant that these accessory tragi may be linked to syndromes related to maldevelopment of the first and second branchial arches. In addition to these syndromes, other abnormalities such as maxillary and mandibular hypoplasia, high or cleft palate, and macrostomia may be found.

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