A healthy 6-year-old girl presented with an exophytic white lesion on the tip of her tongue. Past medical history was noncontributory, with no history of a traumatic event to the oral cavity. The lesion was asymptomatic, and there was no evidence of a recent febrile illness.

Physical examination was otherwise normal, except for a small, smooth surface and painless white nodule on the tip of her tongue (see Figure 1). Routine laboratory tests (complete blood cell count, C-reactive protein, blood chemistry panel, and urinalysis) were normal.

The lesion was completely excised, and the tissue was sent for pathological analysis, which revealed the diagnosis.

Editor’s note: Each month, this department features a discussion of an unusual diagnosis in genetics, radiology, or dermatology. A description and images are presented, followed by the diagnosis and an explanation of how the diagnosis was determined. As always, your comments are welcome via e-mail at editor@pediatricsupersite.com.
DISCUSSION

The macroscopic specimen revealed a small white tissue measuring 0.3x0.3x0.2 cm. Microscopic examination revealed hyperkeratinized and hyperplastic epithelium and a myxomatous stroma that contained abundant, large, stellate-shaped fibroblasts with delicate dendritic-like processes (see Figure 2 and Figure 3). The findings were compatible with a diagnosis of giant cell fibroma (GCF). Oral GCF, first described in 1974 by Weatherers and Callihan, is defined as a benign mesenchymal tumor within the oral cavity.

CLINICAL FEATURES

GCF occurs most commonly in whites and is unrelated to trauma. In children, most cases appear in the second decade of life, whereas in adults, it is seen around the third and fourth decades. Although two case studies reported an equal sex distribution, most agree that there is a slight female predominance (female-to-male ratio of 1.3:1.0). GCF usually occurs as a single lesion, although multiple lesions have been reported.

Kuo and associates conducted a study on 24 patients (adults and children) with GCF and noted that all 24 cases of GCF were misdiagnosed clinically on initial presentation and included either fibroma or papilloma. According to Braga, 5% to 15.5% of GCF cases were found in children 0 to 10 years. The youngest patient who presented with GCF was 3 years. Our findings after reviewing six studies (adults and children) and five case reports describing only children, including our case, showed that 34.63% of evaluated GCF cases appeared in children 0 to 20 years; 13.66% were in children 0 to 10 years; and 21.64% were in children 10 to 20 years (see Table, page 73).
GCF is found most frequently on the gingiva, followed by the tongue (tip and lateral border), palate, buccal mucosa, and lip, although Kuo demonstrated equal distribution between the tongue and gingiva. GCF is usually asymptomatic and, if left untreated, will reach its maximum size within a few months without further growth.

### PATHOLOGY

Macroscopically, GCF is typically a sessile or pedunculated smooth surfaced mass and is sometimes bosselated. Its color is similar to the surrounding normal mucosa and usually has an average size of less than 0.5 cm. The lesion may become secondarily ulcerated because of trauma.

The most characteristic histological feature of GCF is the presence of stellate- or spindle-shaped cells, staining positive only for vimentin, indicating that cells are derived from the fibroblastic lineage. Some other origin had been presumed, such as macrophage-monocyte cells (negative staining for CD68, LCA, and HLA-DR), mast-cell origin (negative reaction for tryptase), and dentrocyte phenotype (negative for factor 13a). Two other oral lesions demonstrating stellate-shaped cells are fibrous hyperplasia and fibroepithelial polyp (also called fibrous epulis). Fibrous hyperplasia shows microscopically a hyperplastic strati-

### DIFFERENTIAL DIAGNOSIS

GCF should be differentiated from other oral lesions that may affect the tongue, especially from fibroma (or irritation fibroma). Fibroma, like GCF, is a painless, pink, smooth-surfaced, usually sessile nodule. It is caused by irritation from chronic chewing of the area. Fibroma commonly appears in adults in the third through sixth decades without sex predilection. It appears anywhere in the oral cavity, and when affecting the tongue, is usually located in the lateral part.

Histologically, it is a collagenous connective tissue nodule with a vascular fibrous stroma, without capsule, atrophic epithelium, and a small number of lymphocytes in the stroma.

Two other oral lesions demonstrating stellate-shaped cells are fibrous hyperplasia and fibroepithelial polyp (also called fibrous epulis). Fibrous hyperplasia shows microscopically a hyperplastic strati-
ified squamous epithelium with a fibrous or loose pattern in the connective tissue and an inflammatory infiltrate. The fibroepithelial polyp demonstrates an atrophic stratified squamous epithelium, collagenized fibrous connective tissue without inflammatory infiltrate. 

Other lesions that may affect the tongue in children are pyogenic granuloma and papilloma. 

Pyogenic granuloma is a painless erythematous mass with a lobulated surface or covered by pseudo-membrane, often ulcerated, that may bleed. The lesion may be induced by local irritants, such as excessive plaque, sharp filling, and dental calculus. It is found most commonly on the gingiva, but also the tongue, lips, fingers, and nail beds; and occurs in any age, with a slight predilection in young females, especially those who are pregnant. Histologically, it presents as a mass of vascular granulation tissue, usually with an ulcerated surface epithelium surrounded by inflammatory cells. Recurrence is possible after excision, especially during pregnancy.

Papilloma is a benign epithelial proliferation induced by human papilloma virus, especially types 6 and 11, or may occur as a spontaneous mutation. It may appear at any age, but in most cases, it was described in adults 30 to 50 years.

It may appear anywhere in the oral cavity, including the tongue. Macroscopically, it appears as a sessile or pedunculated “cauliflower-like” keratotic lesion. Microscopically, it is seen as a fingerlike projection composed from proliferating epithelial cells supported by a fibrous connective tissue core.

**TREATMENT**

The treatment of GCF is surgical excision, usually without recurrences.

**CONCLUSIONS**

GCF is an oral lesion affecting mainly the tongue and gingiva with no relation to trauma, an almost equal sex distribution, and a unique histological feature demonstrating the stellate-shape fibroblasts.

GCF is not a rare lesion of the oral cavity in children, and almost 35% of evaluated GCF cases appear in children between 0 and 20 years. GCF of the tongue should be suspected clinically, especially if it appears on the tip of the tongue, has a diameter of 0.5 cm or less, and a color identical to that of the surrounding normal mucosa. GCF should be differentiated especially from irritation fibroma that affects mainly adults; when affecting the tongue, irritation fibroma is located almost always in the lateral border and is related to trauma.

The retrocuspid papilla is almost identical histologically to GCF and is distinguished from GCF mainly on a clinical basis. It is located on the gingiva, lingual to the mandibular cusp, and is usually bilateral.

Pediatricians should be familiar with relative frequent oral lesions affecting mainly the tongue and lips in children because the patient usually presents to the pediatrician first and not to the dentist or oral surgeon.

**REFERENCES**