Giant-cell Fibroma: case report

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Abstract

We present a case of a 21-year-old woman who had an asymptomatic nodular injury located on the lingual gums at the height of the second upper left premolar. Histological findings showed a benign giant-cell fibroma.

Introduction

The giant-cell fibroma (GCF) was described for the first time by Weathers and Callihan in 1974 while conducting a study where 2000 samples of gingival hyperplastic changes were examined. The authors found 108 injuries with unique characteristics. They called this new injury GCF. According to them, the nomenclature was used because the characteristic cells of the injury were large mono or multinucleated distributed in fibrous stroma.

The GCF has been considered by some authors as a non neoplastic and benign injury, representing a focal reactive growth of oral cavity (ODELL; LOCK; LOMBARDI, 1994; CAMPOS; GOMEZ, 1999; MIGUELL et al., 2003). It is a fibrous neoplasia with different clinicopathological characteristics, representing 2 to 5% of all fibrous proliferations of the mouth submitted to biopsy (NEVILLE et al. 2010).

Clinically, it presents itself as a sessile or pedunculated asymptomatic nodule, usually less than 1 cm of size, which often acquires a papillary surface that can be confused with a papiloma. It is usually found in young patients in nearly 50% of the cases. They are located in the gums and with no gender predilection (WEATHERS; CAMPBELL, 1974; HOUSTON, 1982; SAVAGE; MONSOUR, 1985; LUKES; KUHNERT; MANGELS, 2005; NEVILLE et al. 2010).

Microscopically, GCF shows peculiar characteristics, being composed of a fibrous connective tissue generally loosely arranged with absence of inflammation, and coated by hyperplastic stratified squamous epithelium. The giant mono or multinucleated, stellate and fusiform cells (remarkable histological feature) are predominantly located in its own papilar blade and superficial submucosa (MAGNUSSON; RASMUSSON, 1995; CAMPOS; GOMEZ, 1999; ALBUQUERQUE et al. 2001; NEVILLE et al. 2010; REGEZZI; SCIUBBA; JORDAN, 2013). The presence of epithelial atrophy due to fibrosis adjacent mass can be usually found (NEVILLE et al. 2010).

Some authors have undertaken immunohistochemical studies with the objective of understanding the origin of the giant cells in the GCF. Panels containing different kinds of antibodies were used. The results obtained were always positivity only for vimentin, pointing to the conclusion that giant cells had the phenotype of fibroblasts (ODELL; LOCK; LOMBARDI, 1994; MAGNUSSON; RASMUSSON, 1995; CAMPOS; GOMEZ, 1999). GCF makes differential diagnosis mainly of fibroma (NEVILLE et al. 2010; REGEZZI; SCIUBBA; JORDAN, 2013) or even of the neurofibroma (WANG; LEVY, 1995).

The fibroma, also known as traumatic fibroma or focal fibrous hyperplasia, more often affects the 4th to 6th decades of life, being more common in the oral mucosa with etiology associated to trauma. Microscopically, it shows a nodular mass composed of connective dense tissue, randomly arranged in its own blade and submucosa (NEVILLE et al. 2010; REGEZZI; SCIUBBA; JORDAN, 2013).

The neurofibroma is a tumor of the peripheral nerves originated from a mix of cell types, including Schwann cells and perineural fibroblasts. They vary from small nodules to large masses of soft consistency, occurring most commonly in the skin and unusually in the oral cavity. The oral lesions are mainly seen on the tongue and buccal mucosa. The tumor is composed of interwoven bundles of spindle cells with wavy nuclei associated with delicate collagen bundles. Numerous mast cells are often present and they are the auxialiary characteristics for the differential diagnosis of the submocosa injury (NEVILLE et al. 2010; COSTA et al., 2014). The GCF is treated with conservative surgical excision, being rare the relapses (LUKES; KUHNERT; MANGELS, 2005; TOLENTINO; CENTURION; DAMANTE, 2009; NEVILLE et al. 2010; REGEZZI; SCIUBBA; JORDAN, 2013).

Case Report(s)

Female patient, melanoderm, 21 years, presented an asymptomatic nodular injury, pink in color, rough surface with 2mm diameter, located on the lingual gums at the height of the second upper left premolar,
with reports of approximately 9 months of duration (Figure 1A).

Having the excisional biopsy performed, the submitted material for examination consisted of a fragment of soft tissue, white in color, fibrous consistency, rounded shape, rough surface, measuring 2mmX2mmX1mm.

Histological sections revealed a mucosal fragment coated by stratified squamous epithelium with either hyperplastic parakeratinized areas, showing formation of elongated buds toward connective adjacent, or atrophic (Figure 1A, B and C). In its own lamina, it was observed bundles of collagen fibers in a loose arrangement, randomly arranged in the specimen and free of inflammatory cells (Figure 1B and C). Even in highlight, we observed numerous large fibroblasts, fusiform and stellate, some of them multinucleated, located between the papillae in the just-epithelial region (Figure 1D).

The histopathological diagnosis was a giant cell fibroma. After 1 year of follow up, no recurrence of the injury.

Discussion

The GCF has been considered as a focal reaction injury of the oral mucosa (ODELL; LOCK; LOMBARDI, 1994; FIELDS; GOMEZ, 1999; MIGUELL et al, 2003). It is a particular entity due to its clinical features, anatomical distribution and histopathology aspect (WEATHERS; CALLIHAN, 1974).

This case was observed in a young patient and presented itself as a nodular injury with gum location and in agreement with most of the clinical features described in the literature studied here (WEATHERS; CALLIHAN, 1974; HOUSTON, 1982; SAVAGE; MONSOUR, 1985; LUKES; KUHNERT; MANGELS, 2005; NEVILLE et al. 2010). However, it differed from the assertion that it frequently gets papillary surface (NEVILLE et al 2010; REGEZZI; SCIUBBA, JORDAN, 2013), similar to those found in GCF, but not showing the giant multinucleated fibroblasts, which differentiate it from the same.

The neurofibroma is a tumor of the peripheral nerves, which, unlike the GCF, features soft consistency. It occurs most commonly in the skin, being unusual in oral lesions and mostly seen on the tongue and buccal mucosa. Microscopically the difference is big in relation to GCF. The tumor is composed of interwoven bundles of spindle cells with wavy nuclei, associated with delicate collagen bundles and it has the presence of numerous mast cells, auxiliary characteristic in the differential diagnosis of the lesion (NEVILLE et al 2010; COSTA et al, 2014). The distinction becomes even clearer when the starry giant fibroblasts, commonly found in GCF are not observed either.

This case was treated with excisional biopsy and showed no recurrence, corroborating the reports of Lukes, Kuhnert and Mangels (2005), Tolentino, Centurion and Damante (2009), Neville et al. (2010) and Regezzi, Sciubba and Jordan (2013).

Conclusion

The GCF is a benign fibrous neoplasms with distinct histological features, not associated with trauma or local irritation. It's an easily removable injury of accurate diagnosis and commonly without recurrence. Its striking histological characteristic is the presence of star shaped giant fibroblasts.

References

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Illustrations

Illustration 1

Nodular injury, pink in color, rough surface with 2mm diameter (A). Epithelial hyperplasia exhibiting elongated buds toward the adjacent connective composed of beams randomly arranged (H&E - B). Bundles of collagen fibers in a loose arrangement and free of inflammatory cells (H&E - C). Area of epithelial atrophy showing in its own blade starry giant fibroblasts (H&E - D)