



UNUSUAL NODULAR LESION OF THE TONGUE: clinical report of chondroid metaplasia

Lesão incomum de língua: relato clínico de metaplasia condroide

Lucyana Conceição Farias^[a], Paulo Rogério Ferreti Bonan^[b], Hercílio Martelli Júnior^[c],
Luís Antônio Nogueira Santos^[d], Alfredo Maurício Batista De-Paula^[e], André Luiz Sena Guimarães^[f]

- ^[a] DDS, MS, PhD, Department of Oral Diagnosis, Universidade Estadual de Montes Claros (Unimontes), Montes Claros, MG, Brazil.
^[b] DDS, PhD, Universidade Estadual de Campinas (Unicamp), professor of Universidade Estadual de Montes Claros (Unimontes), Montes Claros, MG - Brasil, e-mail: andreluizguimaraes@gmail.com
^[c] DDS, PhD, Universidade Estadual de Campinas (Unicamp), professor of Estomatology, Universidade Estadual de Montes Claros (Unimontes), Montes Claros, MG - Brasil.
^[d] DDS, MS, Graduate student of Dental Radiology, Universidade Estadual de Campinas (Unicamp), Assistant Professor, Universidade Estadual de Montes Claros (Unimontes), Montes Claros, MG - Brasil.
^[e] DDS, PhD, Universidade Federal de Minas Gerais (UFMG), professor of Universidade Estadual de Montes Claros (Unimontes), Montes Claros, MG - Brasil.
^[f] DDS, PhD, Universidade Federal de Minas Gerais (UFMG), professor of Universidade Federal de Minas Gerais (UFMG), MG - Brasil, e-mail: andreluizguimaraes@gmail.com

Abstract

OBJECTIVES: To review the concepts of chondroid metaplasia and to report an unusual case of this rare condition, presenting as a nodular soft tissue mass in the lateral border of the tongue in an adolescent. **DISCUSSION AND CONCLUSION:** Metaplasia means the conversion, in postnatal life, of one cell type to another. It could be caused by some abnormal stimuli. The origin of cartilage in the oral soft tissues is unknown but several hypotheses have been postulated. Although the etiopathogenesis is unclear, it has been suggested that chondroid metaplasia may occur as a defensive reaction and it is originated from multipotential mesenchymal cells. Chondroid metaplasia is a benign change that occurs as a response to chronic physical or chemical irritation. The differentiation between cartilaginous choristoma and chondroid metaplasia could be very difficult and sometimes a matter of concept. Considering the findings of the current case, the lesion was diagnosed as chondroid metaplasia of the tongue.

Keywords: Chondroid metaplasia. Tongue. Hyaline cartilage. Cartilaginous choristoma.

Resumo

OBJETIVOS: Revisar os conceitos de metaplasia condroide e relatar um caso incomum desta rara condição que se apresentou como uma massa nodular na borda lateral da língua em um paciente adolescente. **DISCUSSÃO E CONCLUSÃO:** Metaplasia é a conversão, na vida pós-natal, de um tipo de célula para outra. Pode ser causada por algum estímulo anormal. A origem de cartilagem em tecidos moles bucais é desconhecida, mas várias hipóteses foram postuladas. Embora a etiopatogênese seja incerta, sugeriu-se que a metaplasia condroide ocorre como uma reação defensiva e originada de células mesenquimais multipotentes. A metaplasia condroide é uma alteração benigna que ocorre como resposta à irritação crônica física ou química. A diferenciação entre coristoma cartilaginoso e metaplasia condroide pode ser difícil e, muitas vezes, uma questão de conceito. Considerando os achados do presente caso, a condição foi diagnosticada como metaplasia condroide de língua.

Palavras-chave: Metaplasia condroide. Língua. Cartilagem hialina. Coristoma cartilaginoso.

INTRODUCTION

Metaplasia means the conversion of one cell type to another during postnatal life and includes the conversion of tissue specific stem cells (1). The explanation for metaplasia lies in understanding the normal developmental biology of the cells that interconvert. Adult stem cells originating from the same germ layer (endoderm, mesoderm or ectoderm) generate characteristic differentiated cell types that are restricted to their own tissue (1-3). Studying metaplasia is very important for a number of reasons. First, metaplasia will tell us something about the normal development of the two tissues that interconvert. Second, identification of the transcription factors that induce trans differentiation could be used to reprogram stem cells for therapeutic transplantation. Third, understanding the steps in metaplasia will tell us something about regeneration. Regenerating cells can arise from mature differentiated cells or from undifferentiated reserves of cells (4). The aim of the present study is to report an unusual case of chondroid metaplasia presenting as a nodular soft tissue mass in the lateral border of the tongue in an adolescent.

Case report

A 14-year-old girl was referred to the oral medicine service for evaluation of a small nodule on the tongue. She related that not only it was frequently bitten, but also presented progressive growth of the lesion. The main symptom of the lesion was

as a slight pain when touched. Although the patient and the parents did not have any information about the time of the lesion, it was not perceived at birth. Her medical history was noncontributory. Extra-oral examination did not show any alteration. During the intra-oral examination it was noted a whitish nodule in the left lateral border of tongue measuring approximately 5mm in its largest dimension (Figure 1, A).

The lesion was well-defined, with rough surface and firm consistency on palpation. The overlying mucosa did not exhibit any alteration. No lymphadenopathy was perceived. An excisional biopsy was performed under local anesthesia.

Macroscopic and microscopic findings

On gross pathologic examination, the lesion was a firm tissue mass, rubbery, well circumscribed and measuring 0.5 x 0.3 x 0.3 cm (Figure 1B). Microscopic examination revealed a specimen covered by hyperplastic parakeratinized stratified squamous epithelium. Hyaline cartilage in fibrovascular connective stroma was identified (Figure 1C, 1D and 1E).

The nodular lesion was diagnosed as chondroid metaplasia of the tongue. No recurrence in follow-up period of one year was noted.

DISCUSSION AND CONCLUSION

Metaplasia is defined as an abnormal change from one type of differentiated tissue to another. This change could occur as a response to chronic physical

or chemical irritation (1). Although the origin of cartilage in the oral soft tissues is unknown, several hypotheses have been considered to explain these features: 1) metaplastic formation, 2) cartilaginous embryonic rests, 3) pluripotential cell derivation, 4) mixed tumor with predominance of cartilage, 5) neoplasms and 6) teratomas with preponderance of cartilage (2, 3, 5, 6). The first two theories are the most widely accepted according to some authors (6, 7).

In the current case report, the diagnosis hypothesis should include cartilaginous choristoma and chondroid metaplasia. Although cartilaginous lesions tend to be painless (8), the patient related slight sensitivity to touch and progressive growth of the lesion. Chronic irritation could be the cause that led to increased tissue and mild pain. It is important to note that the presence of cartilaginous islands in the soft tissues could represent hyperplasia of

existing embryonic cartilaginous rests, stimulated by inflammatory factors (9). However, the occurrence of mechanic irritation suggests that the cartilaginous tissue was originated by metaplastic formation (6, 7). Moreover, embryonic cartilaginous rests are not present on the lateral border of the tongue. Proliferation of heterotopic embryonic remnants of Meckel's cartilage within the first branchial arch has been suggested as being responsible for lesions in the foramen cecum region (10).

More than 27 cases of Cartilaginous Coristomas on the dorsum of the tongue were described without past history of trauma or histopathological presence of inflammation (11). Another important consideration is that coristomas in head and neck region are described as congenital anomalies (12) or developmental malformation presented since birth (13, 14).

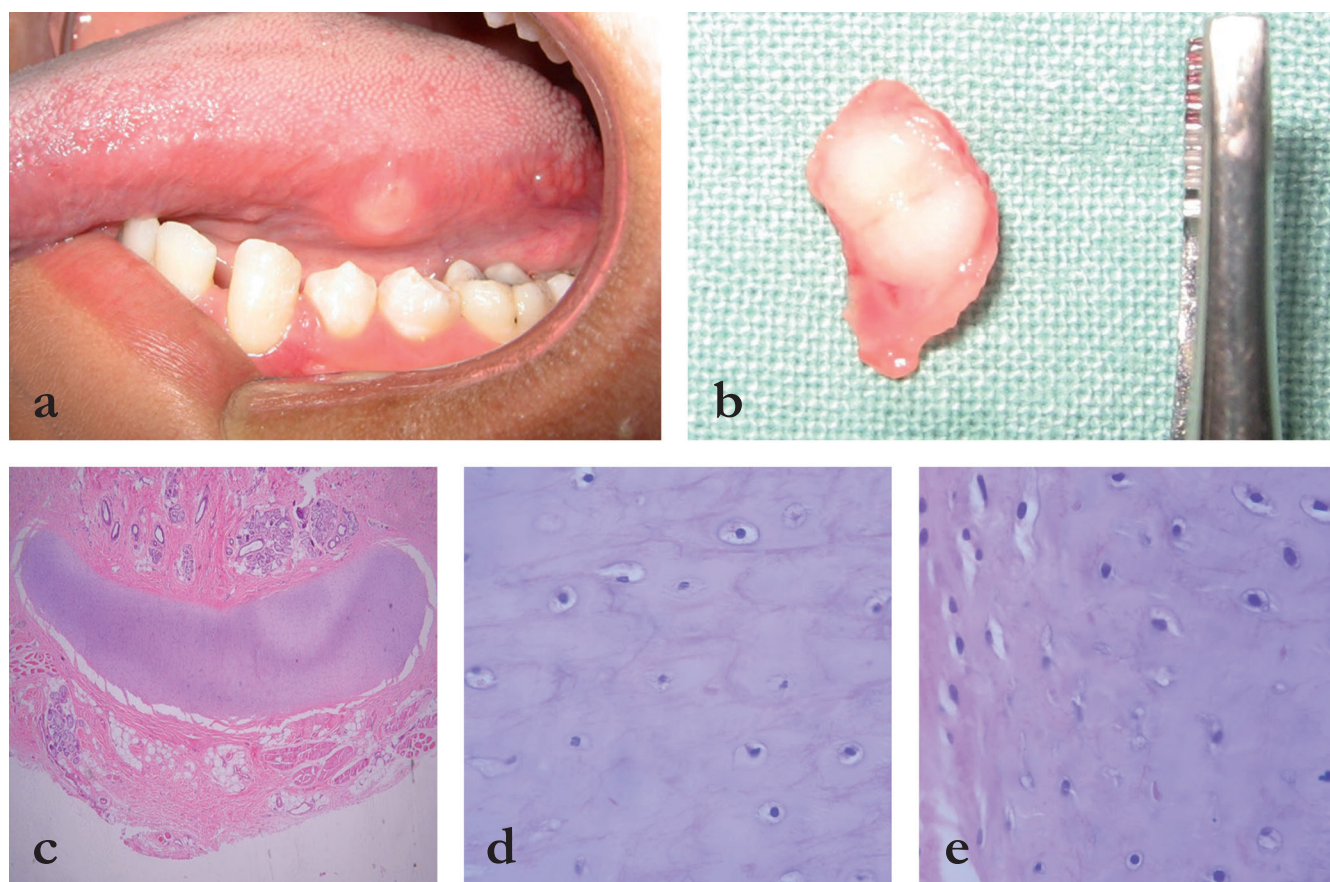


Figure 1 - (a) Intraoral view demonstrating whitish nodule in the left lateral border of tongue; (b) Specimen obtained by excisional biopsy; (c) Hyperplastic parakeratinized stratified squamous epithelium showing islands of hyaline cartilage in a fibrovascular connective stroma (HE - 20X); (d) Evidence of various stages of maturation in single or clustered *foci* (HE - 40X); (e) Distinct stages of maturation of the chondrocytes (HE - 40X)

Evidences suggest that cartilaginous choristoma should be distinguished from Chondroid metaplasia, particularly through the histological findings. The latter is characterised by cartilaginous cells in various stages of maturation in single or clustered foci. Contrariwise, cartilaginous choristoma is most entirely composed of mature hyaline cartilage (15). Moreover, metaplasias usually occur in the postnatal life (1). Clinic and histopathologic must be careful analyzed to establish an accurate diagnosis of the oral chondroid metaplasia.

CONFLICT OF INTEREST STATEMENT

The authors formally declare that there is no conflict of interest in the present manuscript.

INFORMED CONSENT STATEMENT

The patient signed an informed consent, kept in the records in the archives of the Institution.

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Received: 10/15/2009

Recebido: 15/10/2009

Accepted: 01/26/2010

Aceito: 26/01/2010