

Distribution of mast cells in benign odontogenic tumors

Francisco de Assis Caldas Pereira · Clarissa Araújo Silva Gurgel ·
Eduardo Antônio Gonçalves Ramos · Manuela Torres Andion Vidal ·
Antônio Luiz Barbosa Pinheiro · Vladimir Jurisic · Caroline Brandi Schlaepfer Sales ·
Patrícia Ramos Cury · Jean Nunes dos Santos

Received: 15 September 2011 / Accepted: 9 November 2011 / Published online: 30 November 2011
© International Society of Oncology and BioMarkers (ISOBM) 2011

Abstract The aim of this study was to investigate the presence of mast cells in a series of odontogenic tumors. Forty-five cases of odontogenic tumors were investigated using immunohistochemistry for mast cell triptase, and differences between groups were statistically evaluated. Mast cells were present in 96% of odontogenic tumors. Mast cells present in solid ameloblastoma were observed in the tumor stroma surrounding more solid and follicular epithelial islands, with or without squamous metaplasia.

The odontogenic mixoma showed few mast cells. In odontogenic tumors with a cystic structure, the mast cells were distributed throughout all areas of the lesions, mainly in keratocystic odontogenic tumor. In addition, the total density of mast cells between all odontogenic tumors showed no significant difference ($p>0.05$). A greater mast cells distribution was found in keratocystic odontogenic tumor in relation to adenomatoid odontogenic tumor ($p<0.01$), and when the unicystic ameloblastoma and keratocystic odontogenic tumor were compared to the odontogenic myxoma ($p<0.05$). Syndrome keratocystic odontogenic tumor showed a higher mean of mast cells when compared with the other tumors of the sample. Mast cells values presented by syndrome keratocystic odontogenic tumor were significantly greater than those of the sporadic keratocystic odontogenic tumor that were not associated with the syndrome ($p=0.03$). Mast cells are probably one of the major components of the stromal scaffold in odontogenic tumors. We found significant differences of mast cells between syndrome nonsyndrome keratocystic odontogenic tumors, although their distribution did not seem to have any influence on the biologic behavior of benign odontogenic tumors.

F. de Assis Caldas Pereira · C. A. S. Gurgel · M. T. A. Vidal ·
J. N. dos Santos
Department of Oral Pathology, Laboratory of Surgical Pathology,
School of Dentistry, Federal University of Bahia,
Salvador, Bahia, Brazil

E. A. G. Ramos · C. B. S. Sales
Gonçalo Moniz Research Center, Oswaldo Cruz Foundation,
Salvador, Bahia, Brazil

A. L. B. Pinheiro
Center of Biophotonic, School of Dentistry,
Federal University of Bahia,
Salvador, Bahia, Brazil

V. Jurisic
School of Medicine, University of Kragujevac,
Belgrade, Serbia

P. R. Cury
Department of Periodontics, School of Dentistry,
Federal University of Bahia,
Salvador, Bahia, Brazil

J. N. dos Santos (✉)
Faculdade de odontologia, Laboratório de Patologia Cirúrgica,
Universidade Federal da Bahia,
Avenida Araújo Pinho, 62, Canela,
Salvador, Bahia 40110-150, Brazil
e-mail: jeanunes@ufba.br

Keywords Mast cell · Immunohistochemistry ·
Odontogenic tumors · Ameloblastomas

Introduction

Odontogenic tumors (OTs) are derived from epithelial and/or ectomesenchymal cells of either the forming dental organ or associated structures. They are considered to be important for both oral and maxillofacial surgery and pathology as they cause extensive bone destruction [1–4].

