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REVIEW ARTICLE

Clinical, diagnostic and therapeutic features of keratocystic odontogenic tumors: a review

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Summary

Keratocystic odontogenic tumors (KCOTs) are benign but locally aggressive lesions of the gnathic skeleton with high propensity to recur following surgical treatment. High proliferative activity of KCOTs epithelial cells is considered as one of the factors contributing to their aggressive clinical behavior. Aggressive growth within the jaws, tendency to invade surrounding anatomical structures and occasional malignant alteration are the features that distinguish KCOTs from other types of odontogenic tumors. Due to their unique clinical and biological features, KCOTs still present an important problem in oral and maxillofacial surgery. This is especially true when a choice of the most appropriate treatment modality should be made. Establishing balance between effective reduction of recurrence risk and selection of a less aggressive surgical procedure is an issue that should be carefully considered for each individual patient.

Key words: clinical features, diagnosis, odontogenic tumors, surgery

Introduction

Keratocystic odontogenic tumors are benign but locally aggressive lesions of the gnathic skeleton with high propensity to recur following surgical treatment. Aggressive growth within the jaws, tendency to invade surrounding anatomical structures and occasional malignant alteration are the features that distinguish KCOTs from other types of odontogenic tumors. Further more, KCOTs are among the most prominent features of nevoid basal cell carcinoma (NBCC) syndrome (Gorlin-Goltz syndrome), a hereditary condition characterized by a wide range of developmental abnormalities and a predisposition to different types of neoplasms [1], clearly indicating strong involvement of genetic factors in their development. Besides this, uncertain etiology and pathogenesis were subjects of extensive research but numerous important issues regarding their etiopathogenesis are still unresolved.

These kind of lesions were first described by Philipsen in 1956 as odontogenic keratocysts (OKCs). Regarding their specific histopathological features (such as keratinization of the epithelium) and clinical behavior, he distinguished them from cholesteatomas occurring in cranial areas. Traditionally, these lesions, under the term of OKCs, were considered to be developmental jaw cysts [2], but due to their unique clinical and molecular features, they were recently reclassified as keratocystic odontogenic tumors (KCOTs). They are defined as benign, odontogenic, uni- or multicystic tumors, having a potential for aggressive and infiltrative growth [3]. Still, despite this new classification (Table 1), the tumorous nature of these lesions remains a subject of debate among investigators.

Etiology and pathogenesis

It is widely accepted that KCOTs originate from the odontogenic epithelium. Remnants of dental lamina and proliferations of basal cell layer of oral epithelium are considered as possible sources of epithelial

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