

Original Article

Clinico-pathological study of odontomas in 19 Libyan patients

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ABSTRACT

Background: Odontomas are among the most common benign odontogenic tumors, which are mostly discovered in the first and second decades of life with no clear sex predilection.

Materials and Methods: The present retrospective study reviews the clinical, radiological, and the histopathological characteristics of odontomas in 19 Libyan patients seen during the last 18 years in our department.

Results: Most odontomas in our study were discovered when they obstruct a tooth from an eruption at its normal eruption time although a few cases were noticed on routine radiological examination of the region. Panoramic radiographs computed Tomography Scan of the area and the histopathological examination are helpful to elicit the diagnosis. Two cases in this series were found associating with dentigerous cyst and in another two cases the odontomas were seen erupting intraorally.

Conclusion: Odontomas should be considered in the differential diagnosis of the mixed radioopaque radiolucent lesions, especially if they found obstructing the teeth from eruption.

Key Words: Benign tumors, clinical study, Libyan patients, odontomas

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INTRODUCTION

Odontomas are benign tumors of odontogenic origin characterized by their slow growth and consist of a mixture of enamel, dentine, cementum, and pulpal tissue arranged in an unorganized way.^[1,2] They are the most common benign odontogenic tumors as they constitute for 22-26% of all odontogenic tumors.^[3,4] Two types of odontoma are recognized; compound and complex varieties. The compound odontomas are approximately twice as common as the complex odontomas.^[2,3] Different types of studies were carried out on different world populations to reveal the different aspects of odontomas, but there are no previous studies about the clinical and histological features of odontomas from Libya. Thus,

this study evaluates the clinicopathological features of odontomas in a number of Libyan patients.

MATERIALS AND METHODS

The clinical records and histopathological slides of the cases diagnosed as odontoma in the period (1993-2011) were retrieved from archives in the department of oral pathology and oral medicine of the faculty of dentistry, Benghazi University, Libya to evaluate their clinical, radiological, and histological features. All cases were diagnosed clinically and histopathologically by the academic staff of the department. Data pertinent to demographic details, clinical presentation, and radiographic features of odontomas were tabulated and analyzed. The slides of the previously diagnosed cases were retrieved for re-evaluation of their histopathological features under the light microscope.

RESULTS

This study comprised 19 cases of odontomas (10 females and 9 males). Their mean age at the time of diagnosis was 16.6 years with the majority of

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odontomas diagnosed in the first and second decades of life [Tables 1 and 2]. Twelve cases were associated with unerupted permanent teeth, supernumerary teeth or retained deciduous teeth. The most commonly impacted permanent tooth found to be associating with odontomas in this group of patients was the maxillary central incisor followed by maxillary canine and to a lesser extent the mandibular canine.

There were nine cases of complex odontomas (four patients were females) six of them occurred at the

posterior areas of the mandible. The remainder occurred at the anterior regions of maxilla [Table 1]. There were 10 compound odontomas (six of them are females). The lesions were equally distributed at either jaw [Table 2].

No pain symptoms were reported in any case; however, the most common presentation was a failure of the tooth to erupt at its normal eruption time, mostly due to obstruction by a pathosis. In two cases odontoma was seen erupting intraorally [Figure 1].

On radiological examination odontomas generally appeared as small, solitary or multiple radio-opaque lesions, which were discovered on routine radiographic examinations in seven cases [Figure 2]. Computed tomography-scans were helpful in establishing the diagnosis and for the assessment of the lesion extent in many cases of this study.

Histopathological features of complex odontomas revealed enamel matrix intermingled with dentin, cementum and pulpal tissue in a disorganized distribution of these dental tissues, which are surrounded by a fibrous capsule. A number of ghost cells and reduced enamel epithelium and nests of odontogenic epithelium could be seen in few slides [Figure 3]. Likewise, the picture in compound odontomas is basically similar, but shows small denticles surrounded by loose connective tissue stroma [Figure 4].

A dentigerous cyst was associated with odontoma in two cases of this series. In both cases, there was noticeable swelling of the area of involvement. All cases of odontomas included in this study were surgically treated and subjected to histopathological examination.

Table 1: Complex odontoma

Case no.	Site	Region (teeth) involved	Age	Sex
1	Mandible	Molar	20	F
2		Molar	26	M
3		Molar	18	M
4		Premolar	19	M
5		Molar	16	F
6		Molar	11	M
7	Maxilla	Incisor	12	F
8		Canine	19	F
9		Incisor	17	M

Table 2: Compound odontoma

Case no.	Site	Region (teeth) involved	Age	Sex
1	Mandible	Incisor-premolar	10	F
2		Incisor-premolar	22	M
3		Incisor-premolar	25	F
4		Incisor-premolar	10	M
5		Incisor-canine	13	F
6	Maxilla	Incisor	12	F
7		Incisor	9	F
8		Incisor	15	F
9		Canine	40	M
10		Incisor	12	M



Figure 1: Multiple compound odontomas erupting labially to the upper right central incisor



Figure 2: Radiological view of odontoma in the maxillary molar area

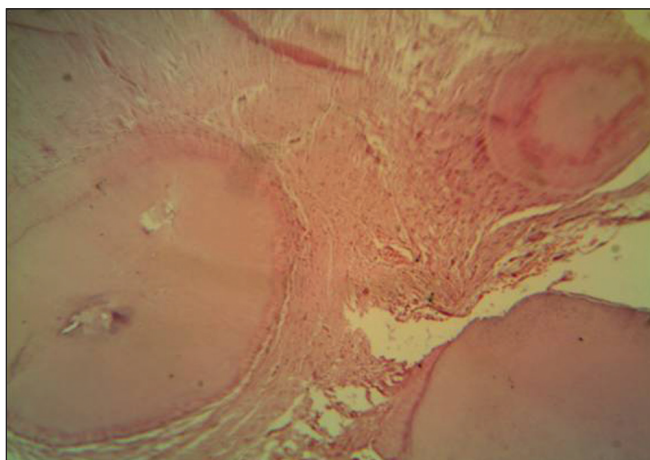


Figure 3: Histopathological picture of a compound odontoma

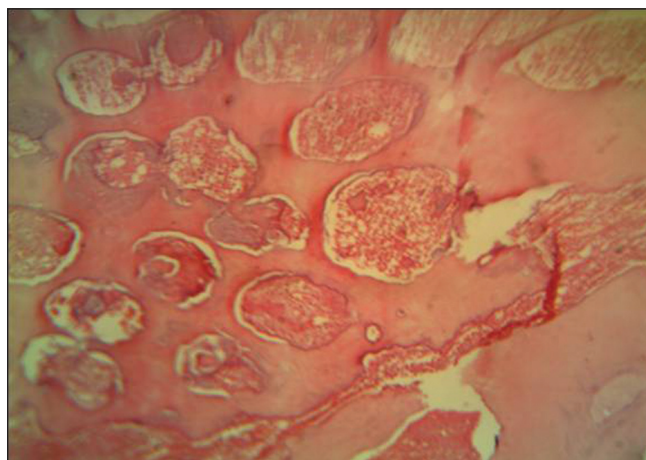


Figure 4: Histopathological picture of complex composite odontoma

DISCUSSION

Odontomas are developmental anomalies resulting from the growth of completely differentiated epithelial and mesenchymal cells that give rise to functional ameloblast and odontoblast.^[5] They have been categorized as benign odontogenic tumors and are subdivided into the compound and complex odontomas morphologically.^[6] They are believed to be among the most common benign tumors as they constituted about 13.4% of benign tumors in Egypt.^[7]

In this retrospective study, the clinical presentation, radiological features, and histopathological characteristics of 19 cases of odontomas diagnosed in our department, (which is considered as the biggest and almost the lonely referral center for a wide area of the country) were studied. The majority of them were discovered in the 1st and 2nd decades of life, without any clear sex predilection.

Although, some investigators reported that the compound odontomas are approximately twice as common as complex odontomas^[3] in this study. The number of cases of each type is almost the same in both sexes.

Compound odontomas commonly occur in the incisor-canine region of the maxilla, whereas complex odontomas are frequently located in the premolar and molar region of both jaws in many previous studies, whereas most of complex odontomas in this study occurred in the posterior parts of mandible and compound odontomas occurred in the anterior parts of either jaw [Tables 1 and 2] in compliance with the finding of other studies.^[2,4,8]

In general, odontomas are most often associated with

permanent dentition and are very rarely associated with primary teeth.^[9,10] They can cause disturbances in eruption of teeth such as impaction, delayed eruption or retention of primary teeth.^[11] In fact, in this study, the interruption of the eruption was the most common reason for the discovery of odontomas; however, there were no cases of odontomas obstructing primary teeth in this study. This might be due to the rarity of impaction of an anterior primary tooth. Although it is very rare, but when do occur, it is most often associated with the presence of supernumerary tooth or odontoma.^[9]

Odontoma is frequently associate with an impacted tooth and occasionally with a dentigerous cyst in this series they associated with the dentigerous cyst in two cases and those patients were complaining of swelling in the area of involvement, thus odontomas should be considered in the differential diagnosis of the mixed radioopaque radiolucent lesions, especially if they found obstructing the teeth from eruption.^[8]

The intraoral eruption of odontomas is not uncommon^[12] as we found one case erupting in the anterior parts of the maxilla; one case was reported to erupt in the molar area of the maxilla.^[3]

The Orthopantomographic (OPG) view is the preferred tool in the diagnosis of odontomas as it enables the clinician to determine the full extent of the lesion in a single view similarly, the use of advanced digital imaging techniques are invaluable in the diagnosis and management of different cases of odontomas. The treatment of choice is surgical removal of the lesion in all cases, followed by the histopathological study to confirm the diagnosis.^[13]

It is concluded that the prevalence and general features of odontomas in Libyan patients are similar

to those reported elsewhere in the world and most often discovered when they obstruct a permanent tooth from eruption.

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