CLINICAL MORPHOLOGICAL STUDY ON BENIGN TUMORAL LESIONS OF EPULIS TYPE

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Summary

The present study was realised on tumoral tissue sections obtained by excisional biopsy. The fragments, from subjects with different ages, was taken from gingival fibromucosa vestibular fixe or oral. The research followed the evidentiation of clinical-morphological particularities of three types of tumoral lesions of epulis. As a general rule, all three pathological types are characterised by a reactive conjunctive stroma which respect the interested territory (superficial chorion or profound) and in the same time the epithelial modification have a strict reactional character. The studies were reported to the biopsies pieces harvested from 9 patients with diagnostic of epulis. Processing of the pieces harvested by excisional biopsy was made by paraffin inclusion technique. The sections dyeing were made by usual technique with haematoxilin-eosin. Clinical exam for the three selected cases shows that the tumor formation was developed on the fixed gum, in rapport with dental structures, the tumor evolution being made vestibular-oral. Particular aspects was observed in each of three types of epulis and concerns the inflammatory infiltration, bone tissue or the disposition of fibrous zones. Structural particularities can be remarked in every type of epulis: in peripheral granuloma with giant cells the inflammatory infiltrate have a specific character by the presence of multinucleate giant cells; in ossifying epulis are evidentiated ossification zones with incomplete calcified bone, partially lysed surrounded by a diffuse sclerosis zone.

Key words: epulis, periferal granuloma with giants cells, reactive conjunctive stroma.

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Introduction

Periodontium represents the totality of tissues which contributes to the teeth maintaining in the maxillary bones. The diversity of he tissue types which compose it, induce also a great variety of periodontal pathology. Pathological lesions of epulis type are benign tumoral formations which results by the hypertrophy of the superficial periodontium or of the profound periodontium. The cause is represented by tissue minimal trauma and the invasion of the non-specific microorganisms with low virulence (Bozzo et al 2000; Trombelli et all 2008). The response of the host tissue is represented by vessels proliferation at the periodontal chorion with or without osseous distruction. (Coletta et al 2006). These lesions are reactive inflammatory reactions to chronic irritative factors or trauma (Santos 1993, Padbury et al 2003). The inflammatory reaction is associated with vascular proliferation, immature fibrous tissue and a lot of cells which forms the so named reaction connective stroma (Hanauske-Abel 1993; Wynn 2008). These tumors have diverse anatomic-pathological aspects. By clinical-morphological study we followed the evidentiation of the particularities of three epulis types: fibrous, bony and with giant cells, clinically, radiographically (ortopantomography) and by anatomical-pathological examination (sections colored with haematoxilin-eosin, HE).
Material and method

The selected patients are selected from the cases of the Maxillofacial and Oral Surgery Clinic from the Universitary Clinic Hospital „Sf. Spiridon” Iaşi.

The studies were reported to the biopsies pieces harvested from 9 patients with diagnostic of epulis.

Processing of the pieces harvested by excisional biopsy was made by paraffin inclusion technique. The sections dyeing were made by usual technique with haematoxilin-eosin. The images was taken with Olympus BX40 microscope and processed with dedicated soft Analyses.

Results

The studies were reported to bioptic pieces harvested from 9 cases with epulis whereby we selected for this work, 3 more representatives:

Case 1:

CA 70 years old, the internment diagnosis was epulis 44, 45 with vestibular evolution. The treatment consists in extirpation of the tumor formation with suture and dental extractions 44, 45 with loco-regional anesthesia.

Clinical exam was evidentiate: tumor formation developed on the fix alveolar gum, vestibular side, in right 44,45, about 1,5 diameters, smooth surface, with nonulcerative covering mucosa, slightly bleeding at dental brushing, consistence firm, sessile weak painful to palpation; tooth 45 presents grade I mobility, painful to spindle and lateral percussion (fig.1).

The ortopantomography was evidentiate a zone with transparent bone in relation with the dental root apex for tooth 36, with a diameter of 3 mm, homogenous, relatively well delimited. It is not remarked osteolysis at the pseudotumoral level (fig.2).

Pathological anatomy exam in haematoxilin-eosin (HE) coloring indicates the diagnostic of fibrous-inflammatory epulis (fig.3, 4):

Fig. 1 Patient CA.
Clinical exam: epulis 44,45

Fig. 2. Ortopantomography CA (paraclinic examen)

Fig. 3. The presence in the superficial chorion of the fibrous sclerosis and inflammatory cells located perivascular (HEx10) CA
Case 2:

MM 29 years old, female, diagnosis at internment was epulis 14 with vestibulopalatal evolution. Secondary diagnosis was root scraps 14, 24, 34; pulp gangrene 15. The treatment applied consists in removal of tumor formation with suture under locoregional anesthesia.

Clinical exam reveal a tumoral formation developed on fixed gingival, in 13-15 (14 – root rest), with vestibule-palatal evolution, more pregnant on vestibular side. The formation diameter is about 1,5 cm, firm consistency, without pain spontaneously or to palpation. The lesion is covered by a mucosa which is slightly friable, bleeding to teeth brushing, without pain. (fig.5). Ortopantomography doesn’t reveal lesions of the subjacent osseous plane (fig.6):

The anatomical-pathological exam reveal bony epulis aspects, in haematoxin–eosin coloration (HE) (fig.7, 8):

Case 3:

ML 51 years old, female, diagnosis at internment was epulis 11,12, evolution vestibular-palatal. Secondary diagnosis was root scraps 14, 24, 34; pulp gangrene 15.

The treatment applied consists in removal of tumor formation with suture under locoregional anesthesia. Clinical exam reveal a tumor formation developed on fixed alveolar gingival, vestibular slope, for 44,45, about 1,5 cm diameter, smooth surface, with the covering mucosa non ulcerative, slightly bleeding to the tooth brushing, firm consistency, sessile weak painful to palpation; tooth 45 presents grade I mobility, painful to spindle and lateral percussion (fig.9).
Ortopantomography evidentiate an osseous transparency zone in rapport with the root apex for tooth 36, with a diameter about 3 mm, homogenous, relatively well delimited. It is not remarked osteolysis at the pseudotumoral formation level (fig.10).

Clinical exam reveal a tumor formation on the fix vestibular and palatal gingival, in right of teeth 11, 21, 12, by round shape, with a diameter of 2 cm, with smooth shape, covered by a purple mucosa, integral, which bleeds to dental brushing. The formation presents a firm consistency and it is slightly painful to dental brushing. Ortopantomography doesn’t reveal lesions of the osseous subjacent plane.

Anatomical – pathological exam indicate the diagnosis of giant-cells epulis with coloration with haematoxilin-eosin (HE) (fig.11, 12).

**Discutions**

In the present study we investigate many types of anatomic-pathological benign conjunctive tumors: fibro-inflammatory epulis, gigant-cellular epulis (peripheral granuloma with giant cells) and ossifying epulis.

Clinical exam for the three selected cases shows that the tumor formation was developed on the fixed gum, in rapport with dental structures, the tumor evolution being made vestibular-oral. The lesions diameter is between 1,5 and 2 cm.

The ortopantomography doesn’t bring relevant data concerning osseous modification in tumoral development zone.

In the first case, CA 70 years old, female, the anatomical-pathological diagnosis is fibro-inflammatory epulis due to a diffuse inflammatory process and to sclerosis presence. The inflammatory infiltrate is situated at the superficial chorion level while in the profound chorion overbear the fibrous sclerosis process. The epithelium is thickened and the superficial chorion presents also fibrosis zones. Epithelial modifications have a reactional character by the proliferation of papilomatous type, with elongated crests, superficial parakeratosis and in some cases, epithelia rectilinear obsolete or even
ulcerated replaced by a granulomatous inflammatory process.

As a particularity, the fibroblasts are positioned perivascularly and reach in endothelial location. Fibroblasts are observed both in superficial chorion and also in profound one, in the sclerosis zones. The inflammatory cells are located also at perivascular level.

In case II (M 29 years old, female), the results of the anatomical-pathological exam indicate the diagnostic of ossification epulis. The superficial epithelium is obsolete and presents parakeratosis aspects while the profound chorion zone present a inflammatory infiltrate with sclerosis zones. The ossification epulis diagnosis was confirmed by ossification zones with bone incomplete calcified partially destroyed, surrounded by a zone of diffuse sclerosis.

In case III (ML 51 years old, female), the anatomical-pathological exam reveals aspects of giant cells epulis. In coloration with haematoxilin-eosin can be observed an thickened epithelia with the interesting of the profound zone of the chorion, with polymorph inflammatory infiltrate dissect by sclerosis zones. In the inflammatory infiltrate could be observed the presence of the granulomatous giant cells.

In lesions of epulis type participate all elements of the conjunctive component (vessels, cells, fibers), the suprajacent epithelial modifications have a strict reactional character (particular aspect of the benign tumor).

**Conclusions**

Pseudotumoral lesions characterized by reactive conjunctive stroma represents a frequently casuistry of the benign pathology in the oro-maxilo-facial territory.

The minimal tissues trauma and the non specific microorganisms’ invasion with low virulence induce the host response by anomalous granulation of the periodontal tissue and the vessels proliferation with or without osseous destruction.

These reactive-inflammatory affections which appear as a response to chronical irritative factors or trauma presents certain morphological characteristics function by anatomical-pathological type of lesion. The epithelial modifications have a strict reactional character by the papilomatous type proliferation, with elongated crests and the presence of the superficial parakeratosis zones.

In some cases, the epithelium is obsolete, rectilinear or even ulcerative, replaced by a granulomatous inflammatory process.

Structural particularities can be remarked in every type of epulis: in peripheral granuloma with giant cells the inflammatory infiltrate have a specific character by the presence of multinucleate giant cells; in ossifying epulis are evidenced ossification zones with incomplete calcified bone, partially lysed surrounded by a diffuse sclerosis zone.

Even the clinical aspects are relatively similar for the three tumors types, the certitude diagnosis and those differentials can be realized only on the basis of a detailed anatomical-pathological exam.

**References**


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