CEMENTOSARCOMA, A new entity

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The tumors of cement origin are classified under four groups according to the classification of the WHO (9) 1966 and Tahsinoğlu (11), 1980.

1. Benign cementoblastoma (true cementoma)
2. Cementifying fibroma
3. Periapical cement dysplasia
4. Gigantiform cementoma

The above listed tumors are all of benign behavior. Up to now, there has been no mention of a malignant variety of any cement tumor. However, since all tumors are consisted of cells, it is only natural to find an atypical form of that individual cell.

The benign cementoblastoma first described in 1930 by Nornberg 7) is considered to be a true tumor among tumors of cement origin, we think that cementosarcoma should be a malignant variety of this tumor.

Although tumors of cement origin are usually found in middle aged, individuals under 25 years of age with a ponderence to males

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than females and predisposition for the area between premolars and canines (5).

CASE

A. O, 21 year old male was complaining from an excessive lacrimation of the right eye, followed by a slight tumefaction in the maxilla. A persistant dental pain of the region porced the patient refer to the doctor on the may 24 th, 1980 who had the patient studiet roentgenographically the x-ray films disclosed a wide opacity in the maxillary sinus was visible. The lesion clearly extended towards the nasopharynx and to the oral cavity (fig. 1). All of these findings leaded to the diagnosis of a malignant tumor an the patient was hospitalized for an excisional biopsy. The diagnosis was made as on osteogenic sarcoma. Amaxillectomy was performed (fig.2). Sometime during june and was turned over to the radiotherapy clinic for post operative on july 29 th 1980. The x-ray films revealed a further destruction of the orbit, and the right eye of the patient had to be enucleated. After the patient recovered, he was given the file number 80/1176 on september 29 th 1980 and was exposed to chemotherapy and irradiation. After 3 month of such a therapy, control x-ray films of the chest and of the chemotherapy was still being employed at the time when this article was written.

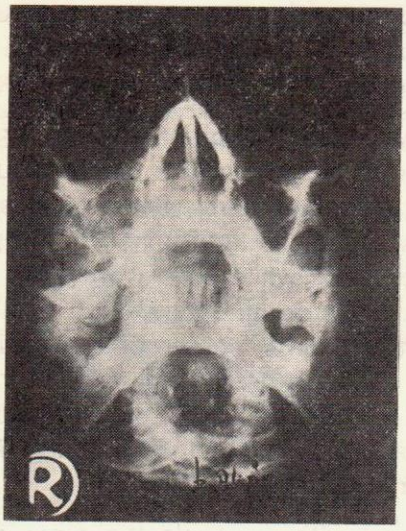

Fig. 1 : Roentgenogram of the lesion disclosed a wide opacity in the right maxilla and maxillary sinus, destruction of the neighboring bones.

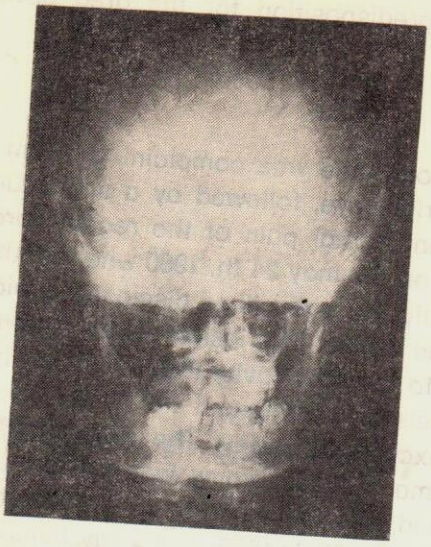

Fig. 2 : X-ray film of the skull and fascial bones, after maxillectomy

This case was brought for discussion to the June 5 th 1980 sessi of the Bone Tumors Registration Center of the Oncology Foundation. Upon the discussion that took place, the case was submitted to the Pathology Department of Denal Faculty where it was thoroughly investigated and compared with over 80 registered osteogenicsarcoma cases between 1971-1980 years. As a result the diagnosis was changed.

In the Pathology Department of Dental Faculty the slides prepared from the paraffin blocks revealed a highly cellular tumor. Tumor cells are of differing size an shapes .Some of these are fusiform or racoqvet-shaped cells with darkly stained eosinophilic cytoplasms and hyperchromatic nuclei while others are more plump. Mitoses and polynucleated cells are hignly abundant. Tumor cells are marginating around a rather large masses of a material generally derrived of cells. This material (cementoid) exhibits reversal lines in some areas, and centrally localized calcifications in others. The stroma of the tumor is rich of collagen fibers and exhibits a mixomatous appearence in some parts (fig. 3, 4).

The slides trained with masson's trichrome and gomori silver impregnation (fig. 5) thecniques reveals that collagen fibers run along the cementoid tissue and extend towards the surrounding

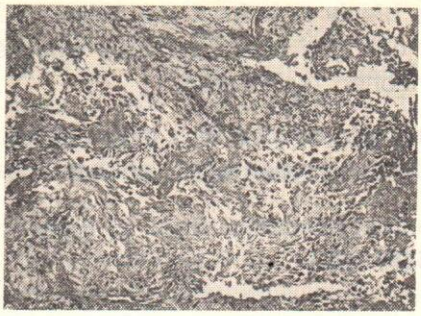

Fig. 3 : Photomicrograph illustrating tumor cells which are different size and shapes, and some of them are around the rather large masses of cementoid tissue. The stroma of the tumor is rich in collagen fibers. (Hematoxylin and eosin stain. Magnification x 100).

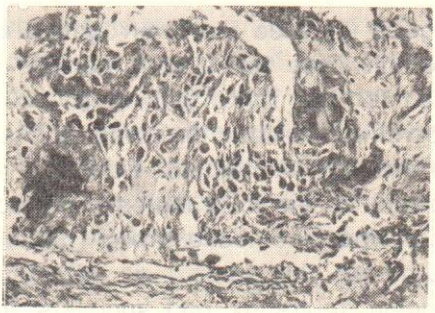

Fig. 4 : Higher magnification of the same tumor. Cementoid tissue exhibiting central calcification and surrounding with atypical cementoblast. Collagen fibers are abundant. (Hematoxylin and eosin stain. Magnification, x 250).

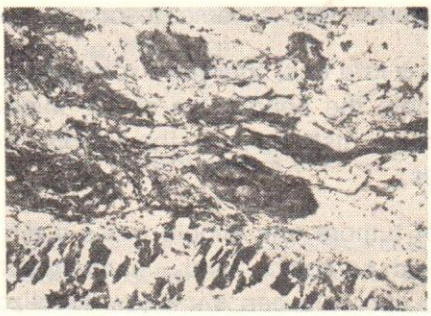

Fig. 5 : The tumor showing that collagen fibers run along the cementoid tissue and extend towards the surrounding tissue. (Gomaris Silver impregnation stain. Fagnification, x 250).

tissues. Stroma is highly rich from the collagen fibers. The cementoid tissue shows collagen characteristics when stained with each of the above mentioned techniques.

A. small area ise covered with a gingival mucosa. There is also a dental rout an primitive odontogen, epithelium visible in this area.

Dignosis : Cementosarcoma (Dept. of Pathology, Dental Faculty, biopsy number 2568/1980).

Discussion

As pointed out earlier in this paper, the malignant tumors of the cementum have been omitted in the various classifications of odontogenic tumor (9, 11).

In 1976, Langdon (5) used the interrogative «Just how benign» for the heading of his case report of a benign cementoblastoma, and drew attention for ther rapid growth of the tumor in a rather short months interval. In his case the tumor started hear the root of the first moler in the right mandibula exending arnterioly to the canine and posteriorly to the third moler of the same side, during 2 months. The tumor was resected enblocak and different pathology departments interpreted the sample as «Benign cemenetoblastomas» or «Osteogenic sarcoma» and suggests that the performed biopsy accelerated the growth via infection. However a review of the x-ray films discloses a progresive expansion which is rather difficult to evaluate as infection that thined the cortical bone the bizarre appereane of cementoblasts are visible in the microphotographs. In our opinion, this is cementosarcoma case.

Our case was a late one, therefore roentgenographically it was not possible to show the connection of the initial tumor with the dental roots although histologically the lesion was also present around the radices.

In this type of tumors one should make a differential diagnosis between osteogenic sarcoma and cementosarcoma. Although rarely, osteogenic sarcoma can show jaw localizations (6). Microscopically, osteogenic sarcoma containa homogenous, pale pinkish ostoid formation. These are usually anastomosing stractures with atipical osteoblast lined around them (6, 10). Tahsinoğlu (10) belives

that the osteoid formation in osteogenic sarcomas makes fine, thin cords rather than rough and thick structures, and it is unusual to find he vice versa. The atypical fusiform cells can also be found neighboring the area (6, 10). The eosinophilic material produced by the tumor cells in our case was thick, round shaped and contained reversal lines. Reversal lines are considered characteristic for cement (1, 3, 5, 8).

In our case, the calcifications in the tumoral tissue are reminiscent of the benign cementoblastomas, from the center of the cementoid material out wards. There were also remnants of uncallified tissue in the periphery of the cementoid is lets. These are also pathogonomonic of cement (1, 5, 8, 9).

The importance of collagen fibers in the manifacture of normal cement is great. These fibers lie parellel to the surface of the radix (4). Çöloğlu and Tahsinoğlu (2), after staining the cement tumors with Masons trichrome and Gomori's silver impregnation technicques, showed the presence of precollagen fibers surrounding the cement islets and being fringed outwards to the surrounding collagen tissue. When the same technicques were employed to our case similar findings were found in collagen and precollagen fibers. In the authors cases cementoid tissue were stained like collagen tissue (2) the same findings were varified in our case as well.

When the same training techniques were applied to the osteogenic sarcomas as control, we found out that the osteoid tissue was stained collagenwise, but with the absence of an increase of collagen fibers in either osteoid tissue is lest/or the stroma in between.

We find our case an interesting one on the basis that it is a tumor unlisted in the odontogenic tumor classifications before, and since it is a first in the literature.

SUMMARY

A case which was proved to be a cementosarcoma, an unlisted entity is presented and discussed to gether with a review of the literature. The patient was 21 years ol male, who had maxillectomy and enucleation of the right eye, because of a maxillary tumor. After then he was exposed to chemotherapy and irradiation. 3 mounths after such a therapy, control x-ray films of the chest and of the maxilla revealed no pathologic finding.

ÖZET

Tümörlerin sınıflamasında yer almayan yeni bir tümör «Sementosarkom» olgusu bildirildi.

Literatür tarandı, ilgili konu tartışıldı. 21 yaşında erkek hastaya sağ maxillada tümör nedeniyle maxillektomi ve daha sonra enükleasyon uygulandı. Radyoterapi ve kemoterapi yapılan hastanın üç ay sonraki kontrollarında maxillektomi bölgesinde ve akciğer grafilerinde patolojik bulgu saptanmadı.

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