Soft tissue sarcomas of the oral cavity

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Unitermos: Sarcoma de partes moles. Cavidade oral — sarcoma

SUMMARY — Soft tissue sarcomas are rarely seen in the oral cavity. Our series comprises 32 cases: 6 rhabdomyosarcomas, 7 fibrosarcomas, 5 liposarcomas, 1 leiomyosarcoma, 1 malignant mesenchymoma and 12 not otherwise specified sarcomas. They do not differ from soft tissue sarcomas elsewhere. However the small size of the biopsy specimen from the oral cavity poses a problem as it difficults adequate histological study.

INTRODUCTION

Compared with the number of malignant epithelial tumors, sarcomas of the soft tissue are unusual, even in hospitals devoted primarily to the care of cancer patients. For instance, in a study sponsored by the National Cancer Institute, USA [19], only 279 examples, 0.8% of soft tissue sarcomas were found among 35,819 histologically proven cases of cancer. According to data from the Survey Epidemiology and End Results Program of NCI, sarcomas comprised only 1.3% of all malignant tumors in the US [14]. This low rate is also seen in Brazil. Of 55,329 patients registered in our hospital from 1953 to 1980, 1,462 or 2.6% had histologically confirmed sarcomas of the soft tissue.

Sarcomas of the oral cavity are extremely rare. Most of the information about these lesions are based on case reports published in the pathology or surgical literature [5-9,11-18,20-23,25]. Recently, Wharam et al. [24], found among 42 cases of rhabdomyosarcomas of oral cavity and laringopharynx, 1 in the oral cavity and 15 in the cheek. In fact, the last review on sarcomas of the oral cavity that we could locate was published in 1964 by the Mayo Clinic [17]. The authors described 24 cases, 11 embryonal rhabdomyosarcomas, 6 fibrosarcomas, 3 leiomyosarcomas, 2 malignant mesenchymomas, and 2 sarcomas. Since the number of reported cases is small, information on histology, special staining reaction, natural history and effects of therapy may be incomplete. In an effort, therefore, to increase our knowledge of these lesions, we describe the clinical and pathological findings of 32 cases diagnosed in our hospital during the last 27 years.

MATERIALS AND METHODS

The tissue specimens were fixed in formalin and embedded in paraffin. Whenever the size of the specimens allowed it, an average of 4 blocks were made. The tissue sections from the 32 cases (table 1) were routinely stained with hematoxylin and eosin, Masson's trichrome, Mallory's phosphotungstic acid hematoxylin, and Gomori's reticulum stain. The liposarcomas were identified by the diagnostic criteria proposed by Figueiredo [12]. The slides from all cases were checked separately by each one of the authors. Later their diagnoses were compared and all disagreements resolved.

We agree with Farman and Kay [9] that Masson's trichrome is a good stain for collagen and muscle fibers,

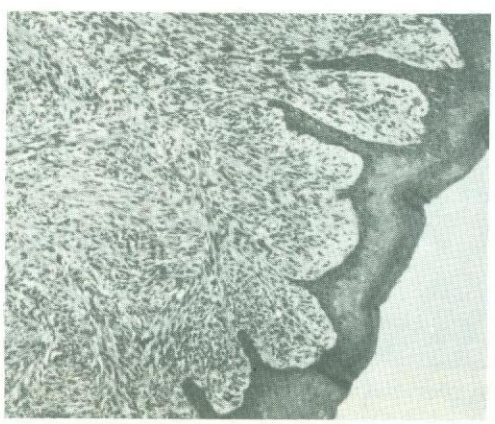

Fig. 1
R.G. 79-8099 — AP 155.654. Fibrosarcoma of the gum. Spindle cells grouped in fascicles. HE X63.

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but we disagree with Oles [18] that it is not a dependable stain for the latter. As with most of the staining procedures, when it is well performed it provides excellent results. The fuchsin stains the muscle fiber (smooth or striated) a deep red, and at time reveals the longitudinal fibrils and cross striations as well. Occasionally the collagen fibers may be stained red, but they are easily distinguished from the muscle fibers. Mallory's phosphotungstic acid hematoxylin is very helpful for it brings out beautifully the longitudinal fibrils and cross striations. Gomori's stain is used to reveal the fibroblast's and lipoblast's reticulum formation [12]. Whenever necessary, PAS, Mayer's muci-

TABLE 1

Case number	Hystological type of sarcoma	Location	Age
1	Sarcoma	Floor of mouth	24
2	Sarcoma	Cheek-buccal surface	34
3	Pleom. liposarcoma	Upper gum	30
4	Mixed liposarcoma	Lower gum	35
5	Sarcoma	Lower gum	08
6	Fibrosarcoma	Tongue	04
7	Sarcoma	Tongue	71
8	Sarcoma	Lower gum	48
9	Fibrosarcoma	Tongue	42
10	Sarcoma	Soft palate	06
11	Pleom. rhabdomyosarcoma	Cheek-buccal surface	08
12	Pleom. rhabdomyosarcoma	Tongue	16
13	Sarcoma	Upper gum	78
14	Fibrosarcoma	Upper gum	24
15	Sarcoma	Lower gum	40
16	Pleom. rhabdomyosarcoma	Cheek-buccal surface	19
17	Pleom. liposarcoma	Upper gum	62
18	Embryo. rhabdomyosarcoma	Soft palate	03
19	Pleom. liposarcoma	Cheek-buccal surface	03
20	Fibrosarcoma	Lower gum	55
21	Fibrosarcoma	Lower gum	07
22	Sarcoma	Tongue	11
23	Myxoid liposarcoma	Lower gum	50
24	Malig. mesenchym.	Upper gum	58
25	Embryo. rhabdomyosarcoma	Soft palate	08
26	Sarcoma	Upper gum	36
27	Fibrosarcoma	Upper gum	37
28	Sarcoma	Tongue	46
29	Leiomyosarcoma	Cheek-buccal surface	72
30	Fibrosarcoma	Upper gum	51
31	Sarcoma	Hard palate	46
32	Embryo. rhabdomyosarcoma	Cheek-buccal surface	<1

TABLE 2

Histological type	Cases	Age (years) Range	Sex	
			Male	Female
Sarcoma	12	8-78	9	3
Rhabdomyosarcoma	6	1-19	3	3
pleomorphic	3	8-19	—	—
embryonal	3	1-8	—	—
Fibrosarcoma	7	4-51	2	5
Liposarcoma	5	3-62	2	3
pleomorphic	3	3-62	—	—
mixed	1	35	—	—
mixoid	1	50	—	—
Leiomyosarcoma	1	72	1	—
Malig. mesenchymoma	1	58	1	—

TABLE 3

Site		
Gum		15
upper	8	
lower	7	
Palate		4
soft	3	
hard	1	
Cheek (buccal surface)		6
Tongue		6
Floor of mouth		1
Total		32

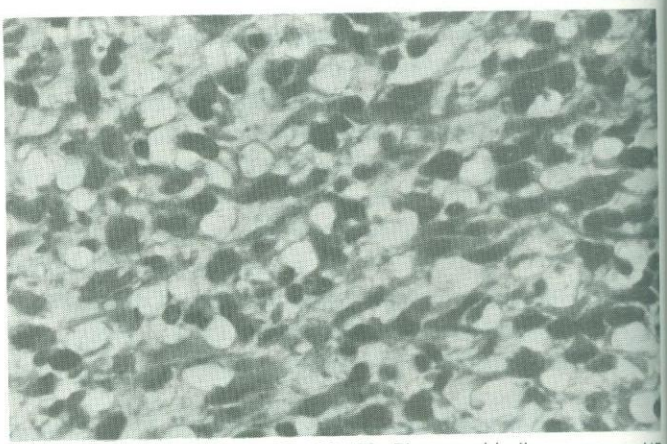

Fig. 2 — R.G. 68-3088 — AP 109.130. Pleomorphic liposarcoma. HE X400.

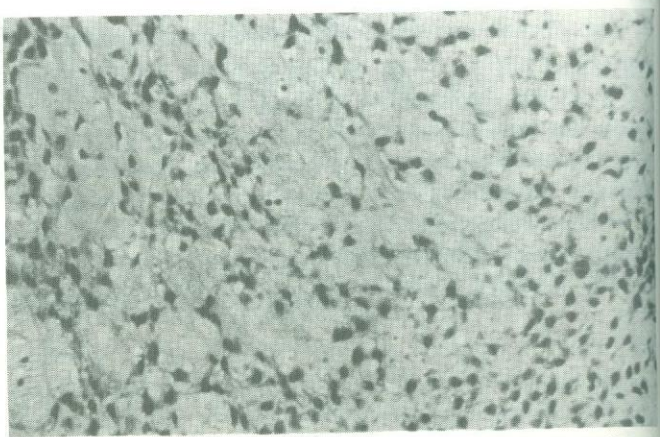

Fig. 3 — R.G. A.B. — AP 135.689. Liposarcoma showing myxoid area. HE X160.

TABLE 4
Age (in decades)

Sex	0-1	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71—80	Total
F	—	4	1	1	4	3	2	—	3	18
M	1	4	2	2	2	1	1	1	—	14
Total	1	8	3	3	6	4	3	1	3	32

TABLE 5

Causes of death	Number cases
Cachexia	2
Cardiac arrest (disease in activity)	2
Hemorrhagic shock	1
Bilateral pulmonary hemorrhage	1
Unknown	10

TABLE 6
Sites of metastases

Sites	Number
Regional lymph-nodes	4
Lungs	3
Vertebral column	2
Liver	1

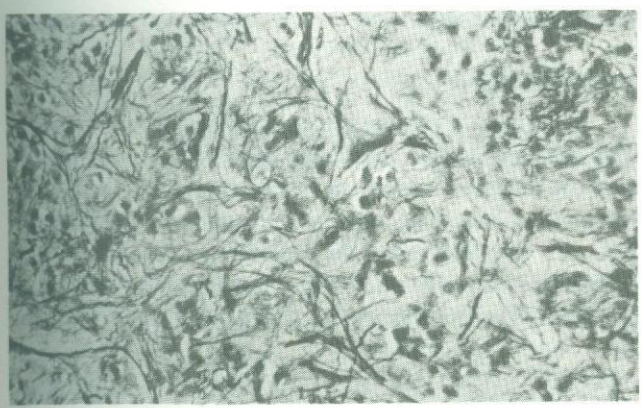

Fig. 4 – R.G. – A.B. – AP 135.689. Liposarcoma showing the glioid pattern of reticulin fibrils in the myxoid area [10]. Gomori's reticulin stain X160.

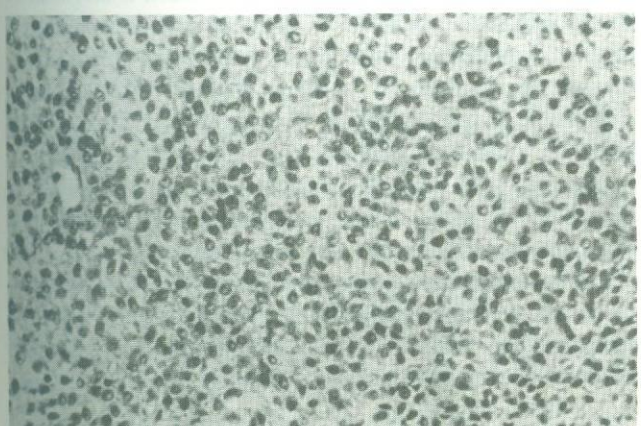

Fig. 5 – R.G. – A.B. – AP 135.689. Liposarcoma showing hypercellular area. HE X160.

Fig. 6 – R.G. 73-3201 – AP 105.352. Pleomorphic rhabdomyosarcoma of the cheek. Varied shaped cells with delicate longitudinal fibrils in the citoplasm. Masson's trichrome X400.

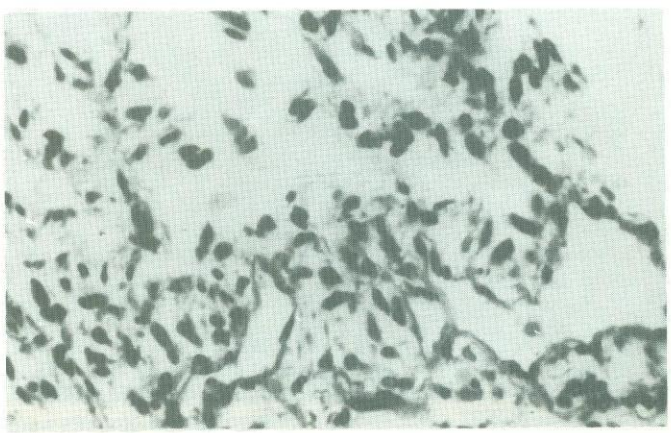

Fig. 7 – R.G. 78-2117 – AP 141.975. Embryonal rhabdomyosarcoma. HE X400.

carmin and Alcyan Blue were used. Sudan stain fat was used when fresh or formalin fixed tissue was available (fig. 1-9).

All medical records were reviewed and the clinical and pathological findings tabulated.

RESULTS

Among 32 cases, there were 6 rhabdomyosarcomas (3 pleomorphic and 3 embryonal), 7 fibrosarcomas, 5 liposarcomas (3 pleomorphic, 1 mixed and 1 myxoid), 1 leiomyosarcoma, 1 malignant mesenchymoma and 12 sarcomas which we could not classify further due to the small size of the biopsy specimen (table 2).

The location of the lesions are shown in table 3. Nearly one-half of the cases occured in the gums. Six were present in the tongue. There was no significant overall sex difference. Eighteen cases were male and fourteen female. However, 9 cases of sarcomas were found in males and 5 cases of fibrosarcomas in females. Twenty eight percent of the cases were found in the first 10 years of life (table 4). These lesions however, were found in all age groups. Our youngest case was a 3 month old child who developed an embryonal rhabdomyosarcoma at the buccal surface of the cheek. The oldest was a 78 year old man who developed a sarcoma on the upper gum.

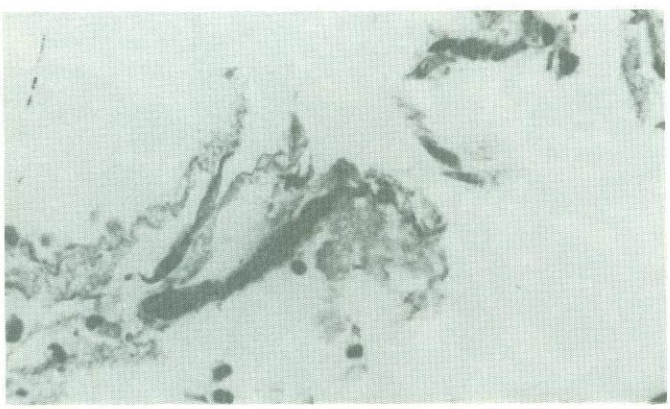

Fig. 8 — R.G. 78-2117 — AP 141.975. Embryonal rhabdomyosarcoma showing strap cell and cell with cross striations (left lower field). Masson's trichrome X400.

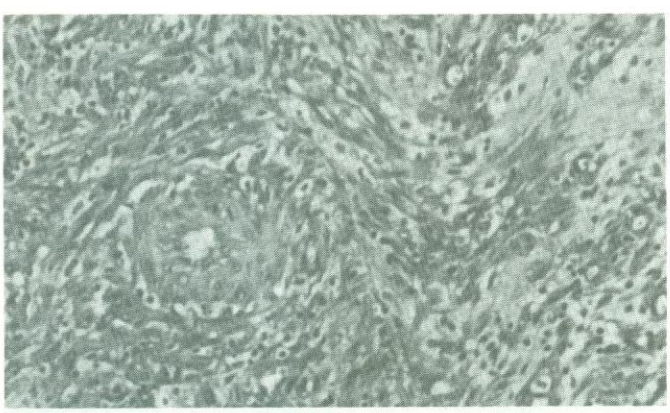

Fig. 9 — R.G. 78-2027 — AP 153.617. Leiomyosarcoma of upper jugo-gengival sulcus. Whorls and fascicles of spindle shaped cells some of which are seen taking off from the muscle coat of an arteriole. HE X160.

FOLLOW UP

Of the 32 patients, 16 died within 5 years from the time of the diagnosis. Fourteen died during the first year. Autopsies were performed on 3 patients and the causes of death were cachexia (2 patients) and bilateral pulmonary hemorrhage (1 patient); two patients died of cardiac arrest in the Intensive Care Unit, and a hemorrhagic shock killed one. In 10 patients the cause of death was unknown (table 5). Metastases were seen in 10 patients. The lymph nodes and lungs were the most frequent site (table 6). The deaths were as follows: sarcomas 7/12, rhabdomyosarcomas 4/6, liposarcomas 3/5, fibrosarcomas 1/7 and leiomyosarcoma 1/1.

DISCUSSION

No unusual features were presented by these tumors. The smallest lesion measured less than 1.5cm diameter and the largest 15cm; 9 measured up to 5cm and 23 were larger than 5cm. The overlying mucosa was ulcerated in 29 patients. Histologically, these sarcomas are similar to those found in other sites. Their staining characteristics are identical. The main problem in reaching a correct diagnosis is due to the small size of the biopsy which, normally precludes the making of several sections for special staining procedures. Whenever possible, the pathologist should be consulted in advance in order to be able to help the surgeon to remove an adequate amount of tissue.

The histological criteria used to reach a diagnosis of rhabdomyosarcoma were: 1. cellular morphology suggesting a pleomorphic, embryonal or alveolar type; 2. cytoplasmic eosinophilia in the hematoxylin-eosin stain; fuchsinophilia of the cytoplasm in Masson's trichrome; cytoplasmic granules stained red by fuchsin (Masson's trichrome) and blue by Mallory's phosphotungstic acid hematoxylin; cytoplasmic longitudinal fibrils and cross striations revealed by Masson's and Mallory's.

Cross striations were seen in 2 of the 6 rhabdomyosarcomas. We agree with Stoble and Dargeon [23] that cross striations are not always present in rhabdomyosarcomas, and one does not need them to classify a sarcoma as such. Reticulum cell sarcoma of soft tissue [22] probably is, in reality, a round cell liposarcoma [12]. The histological distributions of the oral sarcomas are not the same as in other

sites. If one is able to reduce the number of sarcomas not otherwise specified by having more suitable samples of tissue to study, the rhabdomyosarcomas will probably assume the first place as they have on O'Day et al. [17]. In the limbs, girdles and trunk, fibrosarcomas, liposarcomas and rhabdomyosarcomas, in that order, are the most common.

Our material can be compared only to O'Day's series [17], because both cover several histological types of sarcomas. Their series show the embryonal rhabdomyosarcomas as being the most prevalent, whereas the sarcomas were the least; in our series the latter is the first in incidence and the former, the second. It differs also from their because it has 5 liposarcomas while they have none. Wharam et al., series [24] is exclusively made up of rhabdomyosarcomas.

The rarity of these lesions, in our opinion, would entitle them to be studied by an international registry. Thus further information would be gathered and more light thrown on the nature of these lesions.

RESUMO

Os sarcomas de partes moles são raramente encontrados na cavidade oral. Nossa série compreende 32 casos: 6 rabdomiossarcomas, 7 fibrossarcomas, 5 lipossarcomas, 1 leiomiossarcoma, 1 mesenquimoma maligno e 12 sarcomas sem outra especificação. Eles não diferem dos sarcomas de partes moles de qualquer outro sítio. Entretanto o pequeno tamanho da amostra da biópsia da cavidade oral se constitui em um problema, já que dificulta o estudo histológico adequado.

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