PRIMARY TUMORS OF THE JAW IN NIGERIAN CHILDREN

H. A. Ajagbe, DDS, and J. O. Daramola, BDS
Ibadan, Nigeria

Over a 13-year period at the University College Hospital in Ibadan, 152 cases of primary tumors of the jaw (excluding Burkett's lymphoma) were reported. These cases, which consisted entirely of Nigerian children under 19 years of age, were then reviewed and analyzed. The majority of the jaw tumors were benign with fibro-osseous lesions and ameloblastoma predominating.

Common clinical features were late presentation and disfigurement which made aggressive surgery imperative. All cases of malignant tumors terminated fatally.

Although some attention has been given to jaw tumors in adult Nigerians,[1-4] only isolated reports of childhood jaw tumors in the Nigerian children have appeared in literature.[5,6] Burkitt's lymphoma is an exception, having considerable coverage in the English literature. It is not included in this series of jaw tumors seen in children because its primary site is often difficult to ascertain and its primary management is not in the realm of oral surgery.

The findings in anatomic location and sex distribution of the tumors are included in Table 1. The clinical features, natural course, and treatment of these tumors are briefly described. The object of this paper is to draw attention to these lesions so that dental surgeons, pediatricians, and oral surgeons may be aware of their characteristics in this age group and therefore avoid overtreatment.

From the Department of Dentistry, University College Hospital, Ibadan, Nigeria. Requests for reprints should be addressed to Dr. H. A. Ajagbe, Department of Dentistry, University College Hospital, Ibadan, Nigeria.

MATERIALS AND OBSERVATIONS

All 152 primary jaw tumors in this series were recorded in the Cancer Register of the Department of Pathology, University College Hospital (UCH), Ibadan. They occurred in children younger than 19 years at the time of presentation and histologic diagnosis. Emphasis is placed on age at presentation because most of our patients presented when the tumor was advanced, and the age of the patient at onset was often considerably lower than the age when reporting for treatment.

Table 1 shows that fibro-osseous lesions are the most common nonmalignant primary jaw tumors found in Nigerian children followed by ameloblastoma. Primary jaw malignancies were relatively rare, since only 13 cases have been found in the jaw and perioral region.

SITES OF TUMOR

The maxilla was more frequently the site of all jaw lesions except for ameloblastoma, which was found almost exclusively in the mandible (Table 1). There was an unexplainable finding in the sex distribution of fibrous dysplasia and ameloblastoma. Two-thirds of ameloblastomas occurred in male patients, while a preponderance of fibrous dysplasia was seen in female children.

TABLE 1. SITES AND SEX OF CHILDREN WITH PRIMARY JAW TUMORS

Type of Tumor	Site		Sex		
	Mandible	Maxilla	Male	Female	Total
Fibrous dysplasia	14	45*	26	40	66
Ameloblastoma	23	1	16	8	24
Pleomorphic adenoma	5	8	6	7	13
Fibrous epulis	1	8	6	3	9
Ossifying fibroma	6	5	5	6	11
Embryonal rhabdomyosarcoma	2	3**	7	2	9
Central giant cell tumor	1	3	3	1	4
Neurofibroma	1	1	1	1	2
Adenoameloblastoma	1	1	1	1	2
Squamous cell carcinoma	1	1	1	1	2
Progonoma	—	2	2	—	2
Tuberculosis	1	—	1	—	1
Odontoma	—	1	1	—	1
Capillary hemangioma	—	1	—	1	1
African histoplasmosis duboisii	—	1	—	1	1
Fibrosarcoma	—	2	2	—	2
Hemangiopericytoma	1	—	—	1	1
Myxofibroma	—	1	1	—	1

Other sites: *nose—2, orbitofrontal—3, parietal—1, ethmoids—1
**cheek—3, tongue—1

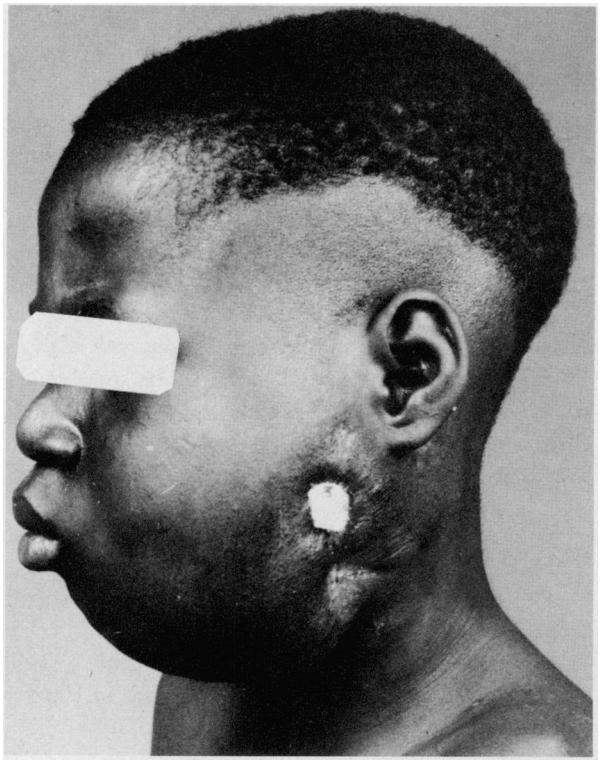

Figure 1. A tuberculous lesion in the mandible of a 13-year-old boy

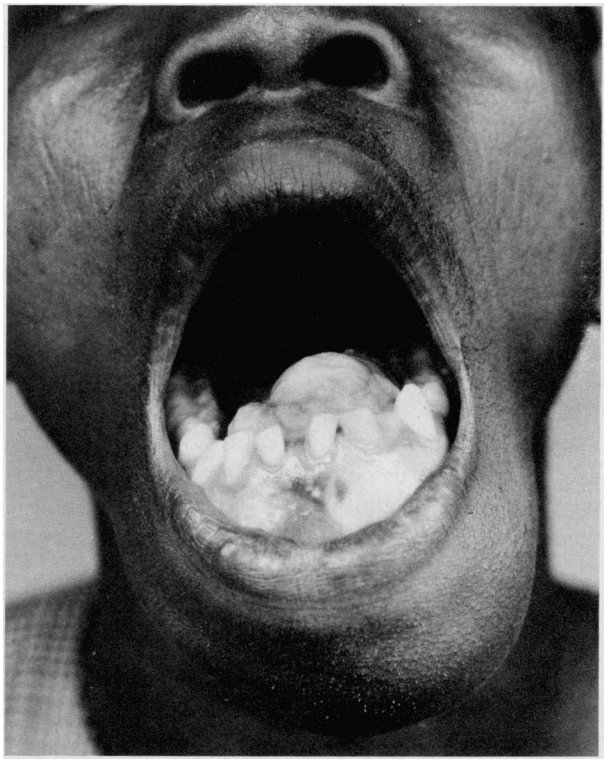

Figure 2. Ameloblastoma of the mandible of an 18-year-old boy

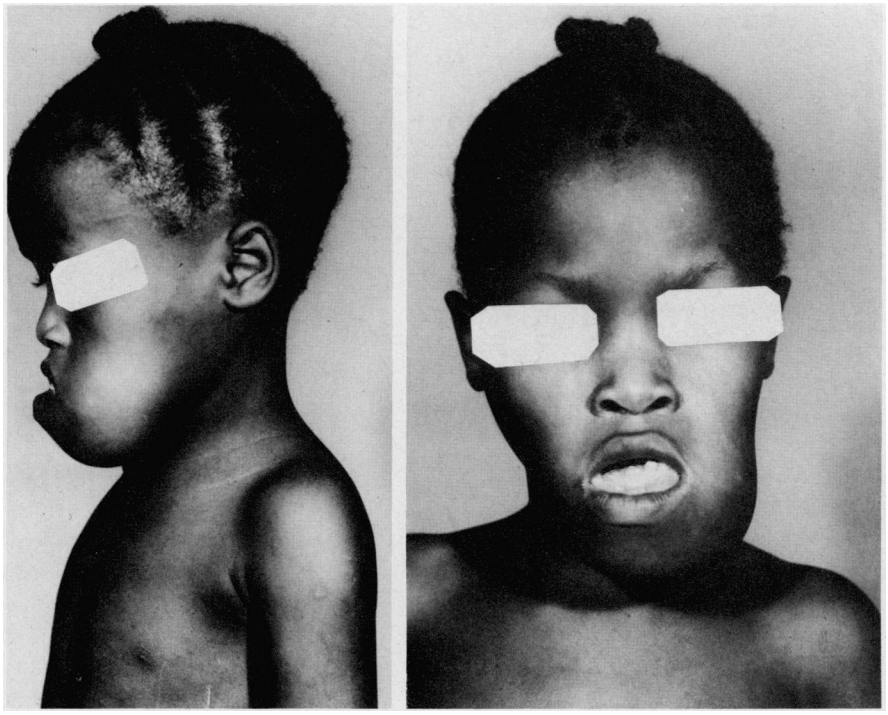

Figure 3. Ossifying fibroma in the mandible of a seven-year-old girl

CLINICAL FEATURES

Generally, our patients presented for treatment very late. The tumors were often either extremely disfiguring and disabling, or causing functional impairment when they were first seen in the hospital (Figures 1 and 2). The malignant lesions were often too advanced to be amenable to surgery and aggressive surgical excision had to be performed for benign lesions. Opportunities for conservative cosmetic jaw surgery are still rare in our hospital practice.

Brief comments on the more frequently seen or interesting lesions appear relevant.

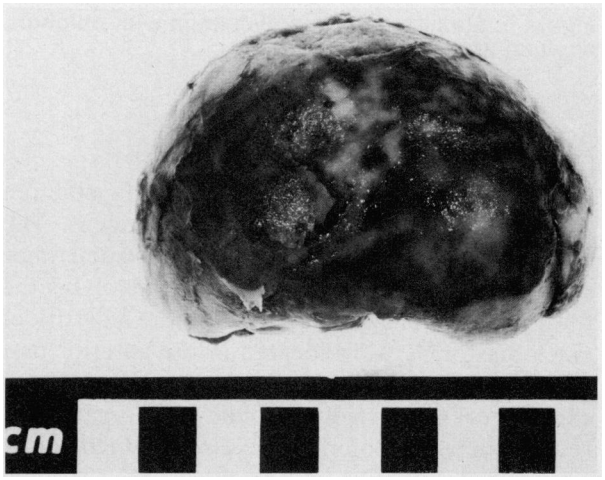

Figure 4. "Shelled out" specimen of lesion shown in Figure 3

FIBRO-OSSEOUS LESIONS

While opinions differ as to whether or not fibrous dysplasia and ossifying fibroma are histologic variants of the same lesion,[7] there are distinct gross surgical differences in the two lesions. Ossifying fibromas are encapsulated and can be removed in totality (Figures 3 and 4). Therefore, they do not recur after total excision. Fibrous dysplasia, on the other hand, has no such delineation and complete excision can not be ascertained at operation (Figure 5, left). They frequently recur. Several conservative operations in the form of "surgical shaves" may be necessary to treat fibrous dysplasia before a patient reaches adulthood, at which time the lesion is expected to regress.

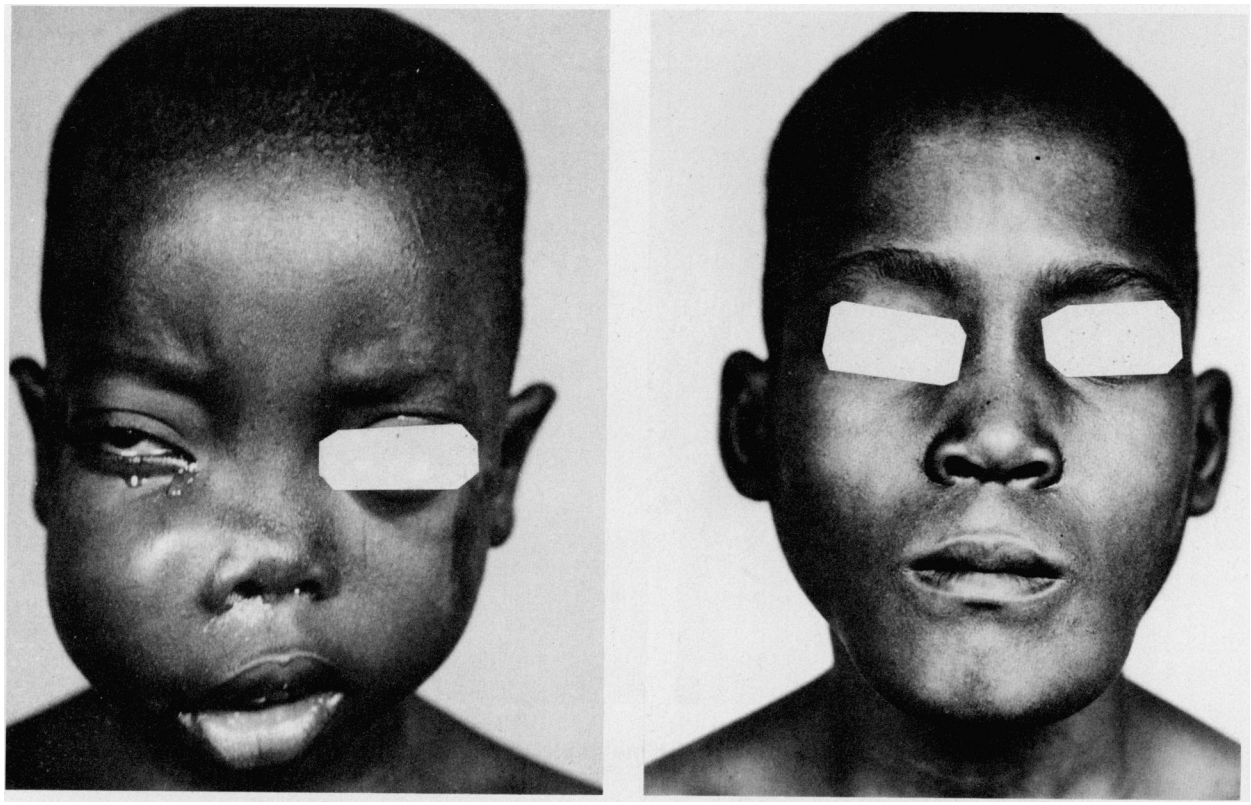

Figure 5. Maxillary fibrous dysplasia with epiphora in a five-year-old boy (left). Ameloblastoma in the symphyseal area (right)

AMELOBLASTOMA

Most of the ameloblastomas seen in children were solid types, but radiologically lucent. The early lesions in the posterior region sometimes were mistaken for dentigerous cysts, involving the third molars. As in adult patients,[2] the majority of ameloblastomas were located in the anterior part of the mandible in children (Figure 5, right). Block excision of the anterior mandible often created jaw reconstruction problems. Because of a high failure rate due to infection, we avoided anterior mandibular resection, but instead maintained jaw continuity by preserving the inferior cortical bone whenever possible. Recurrences were very few.

PLEOMORPHIC ADENOMA

Only one of the 13 salivary gland tumors was found in the parotid gland; eight were located in the palate; the rest were distributed in the lip, tongue, floor of the mouth, and cheek. Sex distribution was equal. Treatment was by surgery. No recurrence has been seen.

FIBROUS EPULIS

The etiology of fibrous epulis in the general population is considered to be a proliferative response of the oral tissue to chronic irritation.[8] It was associated also with the shedding of decidous teeth and eruption of permanent ones. A few fibrous epulides grew rather rapidly and became hemorrhagic, necessitating differentiation from malignant neoplasm.

Fibrous epulis recurs if incompletely removed. The most common sites were in the canine and premolar area in the maxilla.

OTHER LESS COMMON PRIMARY JAW TUMORS

Of the four histologically diagnosed central giant cell tumors in this series, one was a "genu-

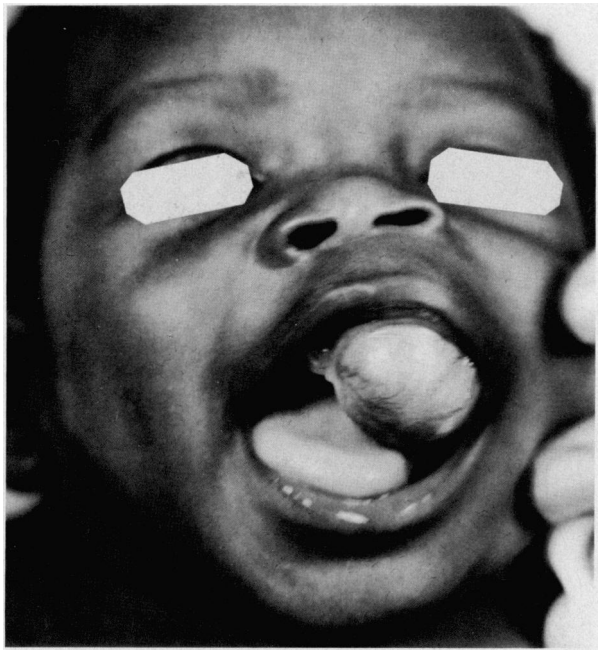

Figure 6. Melanotic neuroectodermal tumor of infancy in the maxilla of a six-month-old baby boy

ine"[9] giant cell tumor. Clinically, these lesions were similar to ameloblastoma or one of the fibro-osseous lesions. Laboratory determinations for latent hyperparathyroidism must always be considered when giant cell tumors are diagnosed. Treatment is by surgery.

The average age of patients with embryonal rhabdomyosarcoma was 7.4 years, ranging from 18 months to 14 years. The lesions were located in the palate, cheek, and tongue. Clinically, the lesions may be confused with lymphosarcoma. Despite the use of extensive surgical excision (without supportive x-ray radiation), all the patients died.

Melanotic neuroectodermal tumor of infancy (progonoma) occurs in children within the first year of life and usually is located in the anterior part of the maxilla (Figure 6). The two reported cases from this institution were seen at eight and six months, respectively.[10,11] This lesion grows rapidly and diagnosis only can be made through biopsy. It usually does not recur following adequate excision.

Other primary tumors were rare and experience with them in this age group was minimal. These lesions were managed either by combined use of surgery and chemotherapy (tuberculosis, African histoplasmosis), or by surgery and x-ray radiation when available (squamous cell carcinoma, fibrosarcoma).

CONCLUSIONS

Apart from Burkitt's lymphoma, which is holoendemic in certain parts of the tropical regions, most jaw lesions found in Nigerian children are benign. It is unfortunate that these treatable lesions cause a high rate of morbidity, or even death by local extension into vital organs. People's attitudes toward diseases appear to be a measure of ignorance, poverty, and acute shortage of health facilities in both rural and urban areas in Nigeria. The usual clinical appearance of benign jaw lesions may be altered if there is a delay in presentation for treatment, and misdiagnoses and mismanagement become good possibilities.

It is hoped that with improved education, economy, and social justice, the level of health maintenance among the Nigerian children will also improve.

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