Carcinoma of the oropharyngeal region is one of the most common malignant lesions seen in western India, comprising about 47% of all cases seen at the Gujarat Cancer and Research Institute. Of these, carcinoma of the tongue has the maximum incidence. In India the ratio between carcinoma of the anterior and posterior tongue is 33:66, the reverse of that published in Europe and America. The highest incidence of carcinoma of the anterior tongue appears in males 50 to 60 years of age; only 11 cases have been reported in patients under 20 years of age. From 1969 to 1974, 218 cases of carcinoma of the anterior tongue were seen at the M.P. Shah Hospital. This paper reports five cases of carcinoma of the anterior tongue found in patients under 20 years of age. Although the anterior tongue is a visible and approachable site, all five lesions were too advanced to cure. There did not seem to be any contributory factor to produce this malignant lesion at such a young age. The patients were all male, the youngest 11 years old. Two cases were treated with surgery; one also received postoperative radiotherapy. The remaining three cases were treated with palliative radiotherapy and chemotherapy. The pathology and the current view of management are discussed.

_Cancer _37:917–921, 1976._
patient clinic especially if the lesion is on the under surface of the tongue.

The diagnosis is usually easily confirmed by biopsy which reveals either an epidermoid or an undifferentiated carcinoma. The spread is to the floor of the mouth, laterally to the alveolar region, or medially into the substance of the tongue. Lymphatic spread goes to the cervical lymph nodes nearest the primary tumor. Blood-borne metastases are uncommon and occur only late in the evolution of the disease.

Treatment consists of either irradiation or surgery. Interstitial irradiation with radium needles or teleradiation with cobalt 60 gives almost equal results. Surgery consists of wide excision of the lesion with on-bloc dissection of cervical lymph nodes with or without removal of the mandible. Radiotherapy followed by surgery is said to reduce the incidence of lymph node metastases. The prognosis depends mainly upon the duration of the disease before admission, the site and size of the tumor, and the presence of metastatic spread. The 5-year survival rate for those without metastases is about 72%, while after the appearance of metastatic nodes, it falls to 18%. The prognosis remains good if the lesion is under 2 cm in size; thus early diagnosis is important. In view of the easy accessibility of the tongue for clinical examination and biopsy in outpatient departments, it is regrettable that most of the patients who come for treatment have advanced disease.

At the M.P. Shah Cancer Hospital, Ahmedabad, from 1967 to 1971, 8405 cases of malignancy were recorded. Of these, 3953 (47%) were oropharyngeal carcinomas. Of these, 1561 cases were carcinoma of the tongue (1343 of the base of the tongue, and 218 in the anterior tongue). The age distribution in these 218 cases was as follows: Fig. 1 shows that out of 218 cases, 61 patients under 40 years of age (28%) had carcinoma of the anterior two-thirds of the tongue. This can be compared with the 904 cases shown in Fig. 2 in which only 3% were under 40 years of age. Aware of the rarity of the lesion at such an uncommon age, and the occurrence of five cases in the period of 5 years at our Institution, we present these case reports. All five cases were histologically proven and treated at our hospital.

**Case Reports**

**Case 1**

K. M. Patel, a 16-year-old farmer boy, was seen on September 9, 1970 with the complaints of excessive salivation and a growth over the right side of the anterior tongue. He gave a history of repeated stomatitis for 1.5 years, with swelling of the tongue for the past 2 months. There was no history of tobacco or bad teeth. On examination, there was a cauliflower-like growth confined to the right lateral border of the tongue; the floor of the mouth was normal. Lymph nodes in the right upper neck

---

**Fig. 1.** This shows nodular growth of anterior tongue producing fixation of tongue in the floor of mouth, in case 4.
were mobile, firm, and nontender. Biopsy showed epidermoid carcinoma. There was some anemia, but a chest x-ray was normal. He was treated with 6000 R Co\textsuperscript{60} in 30 sittings, and after 1.5 months, a hemiglossectomy and radical neck dissection on the right side was done with good results. About 10 months later there was a recurrence in the cervical nodes for which Tab. Methotrexate 5 mg 1/2 BD for 7 days, and 2000 R Co\textsuperscript{60} were given. The patient remained well until April 10, 1971.

Case 2

M.S. Jethi, a 17-year-old boy was admitted on August 28, 1969 with a painful ulcer over the right side of the tongue of one month’s duration. There was no history of tobacco, syphilis, or poor dental hygiene. On examination, there was an ulcerative lesion on the right lateral border of the tongue about $4 \times 2$ cm. It was tender and free from the floor of the mouth. Multiple small glands were present in the right neck, more in the upper area than in the lower. A hemogram, urine analysis, and x-ray of the chest were normal. A right hemiglossectomy and right neck dissection was performed on September 3 with good results. The diagnosis was epidermoid carcinoma of the tongue, but the glands showed tuberculous lymphadenitis. The patient is well and free from disease today.

Case 3

K.M. Valvi, a male student aged 16 years, reported to the hospital on November 25, 1971
complaining of a painful ulcer of the tongue of 6 months duration. There had been oral dysphagia for 3 months. The past history revealed repeated stomatitis and the chewing of tobacco for 1 year. There was an ulcerative lesion on the right tongue almost touching the midline and extending into the floor of the mouth. There was marked ankyloglossia and induration over the submental region with hard fixed metastatic nodes in the right neck. There were a few free mobile nontender lymph nodes in the left cervical area. Urine analysis, blood examination, and chest x-ray were all normal. The biopsy diagnosis was epidermoid carcinoma. Cobalt 60 and hydroxyurea were given, but neither of them helped, and the radiotherapy was discontinued because of poor tolerance. The patient was discharged with advanced disease on December 6, 1972.

Case 4

D.M. Patel, an 11-year-old school boy, was first seen on February 8, 1974 with a swelling on the right side of the neck and tongue of 2 months' duration. There was difficulty in articulation and deglutition. There was no significant past personal or family history. On examination, there was an ulcerative growth 3 x 2 cm on the right lateral side of the tongue involving the floor of the mouth. Ankyloglossia was present. There was a hard fixed nontender lymph node in the right upper jugulo-digastric area about 4 x 2 cm. Biopsy revealed an epidermoid carcinoma which was treated with 5000 R Co60 During the course of radiotherapy, secondary nodes appeared in the left neck. He was given a combination of chemotherapy with cyclophosphamide and methotrexate and mitomycin C. Good palliation was obtained in spite of a residual lesion at the end of treatment.

Case 5

P.B., an 11-year-old school boy presented with a foul-smelling ulcer of the tongue which had been present for 2 months. There was no history of chewing pan or smoking bidis. Oral hygiene was good; there were no bad teeth or a history of syphilis. On examination, an ulcerative lesion was present on the right side of the tongue involving the dorsal surface and the floor of the mouth. A biopsy revealed squamous cell carcinoma. There were palpable bilateral lymph nodes in the neck and jugulodigastric region, in the left submandibular area, and in the right submental area. Treatment consisted of 6000 R Co60 and methotrexate with good results. After a year, the primary lesion was under control and the lymph nodes barely palpable. Further follow-up revealed that this patient developed recurrent disease in tongue within next 6 months and died of recurrent disease.

Discussion

After finding five cases of carcinoma of the tongue in such young boys, we searched the literature for other evidence of this lesion in patients under 20 years of age. Only 11 cases had been reported up to February 1972. This publication reported a single case with review of ten other cases. Of these ten cases, four were in the first decade and six were in the second decade. Flamant et al.2 studied the occurrence of carcinoma of the tongue and found that the largest group had an average age of 59 years. In his series of 904 cases, only 5% were below 40 years of age, and most of them were in the fourth decade.

The cases reported in the literature had an equal sex distribution, whereas in our cases all were male. Because the published cases did not give details regarding the size and type of lesion or report the presence or absence of metastatic nodes, a comparative study could not be made. However, all the cases were proved by biopsy. It must be emphasized that a punch biopsy should be done in every non-healing ulcer of the tongue as early as possible, no matter what the age of the patient is.

Only one of our patients had the habit of chewing tobacco, and then only for 1 year, and not one had a history of local oral irritation, smoking, or poor oral hygiene. We conclude, therefore, that there must be some dietary or viral factor to cause such a malignant lesion at this young age. Our cases had ulcerative lesions on the lateral border of the tongue, and the clinical diagnosis was not difficult. All of them were proved by biopsy to be epidermoid carcinoma. Lymph nodes were present in every case, but the diagnoses were varied; in one case, tuberculosis, in another, nonspecific lymphadenitis, and in the remaining cases, metastatic epidermoid carcinoma.

Two cases were treated by hemiglossectomy with an on-bloc dissection of the lymph nodes in that side of the neck. The remaining three cases had advanced disease and were treated with adequate dosages of Co60 in two fields as palliation. One was given hydroxyurea, while two others were given either methotrexate alare or methotrexate in combination with cyclophosphamide and mitomycin. Nothing more than short term palliation was achieved in all these three cases.

Of the five patients discussed, only one is living without cancer; the others died within a year of their discharge from the hospital.
REFERENCES


