Childhood tongue squamous cell carcinoma

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Background: Tongue squamous cell carcinoma is a very rare disease in children with only a few cases reported in the literature. A case of 15 year old female tongue squamous cell carcinoma (SCC) with review of reported cases is presented. Pediatricians and family physicians should also be aware of the possibility of this disease entity occurring at an earlier age to decrease delay in diagnosis and initiation of treatment.

Key words: Squamous Cell Carcinoma, Tongue, Childhood, Head and Neck, Oral Cavity, Cancer, Malignancy.

INTRODUCTION

Tongue is the most common site for an oral cavity malignancy. More than 95% of oral tongue malignant tumors are squamous cell carcinoma (SCC). Peak incidence is seen in the sixth decade for men and in the seventh decade for women. Tongue SCC in young adults is very rare and in a series of 115 tongue SCC patients, 12.1% were 21 to 25 years old and only 1.8% were under 20 years old.[1] In this article a review of childhood (15 year old or less) tongue SCC is discussed.

CASE REPORT

A 15 year old female child with a chronic 0.5 cm ulcer in the right side of her tongue base which was well differentiated SCC in pathologic examination was referred to Iran Cancer Institute because of resistance to treatment with chemoradiation.

Her dentition was good and she had a bulged reddish lesion in the base of her tongue on the right side. There was no history of smoking, ethanol consumption or any other harmful habits. The patient had no family history of tongue SCC.

There was no palpable neck lymph node and no metastasis was found in neck sonography and thorax CT scan.

Resection and primary repair of tongue was done by pull through technique (Figure 1). Tumor diameter was 0.5cm in pathology report. Six days later she was discharged in good condition but did not refer to clinic for follow up. Telephone follow up revealed that because of an orocutaneous fistula in the suture line a percutaneous endoscopic gastrostomy was done for her in another hospital. Percutaneous endoscopic gastrostomy had failed and caused a missed peritonitis. Laparotomy had not been effective and the patient had expired about two weeks later.

Figure 1. 0.5 cm ulcer in right side of tongue base.

DISCUSSION

The main causative factors of tongue SCC are constant irritants to the oral mucosa, like tobacco chewing or ill-fitting dentures. Other agents including alcohol abuse and smoking tobacco have also been implicated.[2] However, in children other causes must be investigated as the reported case was a child and did not have any smoking or drinking habits and no significant medical history. Torossian et al.[3] in their review have categorized the risk factors in three groups:

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1. The immunosuppression induced by a hemeopathia (Fanconi’s anemia) or by chemotherapy.

2. The genodermatosis diseases such as xeroderma pigmentosum (XD) 15 or KID syndrome (keratitis, ichthyosis, deafness) 8.

3. A group characterized by no particular personal or family history. Such cases are very rare.

In a review by Amichetti [6] in 1989, 20 case reports of tongue SCC below 15 years of age were gathered. In a review from 1989 till 2010, we found 11 reported cases (Table 1) and the presented case is also added to them. 7 of 11 patients were in the third group of the Torosian categorization. In the reported cases follow up was not complete and in the present case, survival is not disease-specific.

It is stated that when pediatric and adult patients are matched by gender, tobacco use, history, TNM status, surgical procedure and adjuvant radiotherapy, outcomes for overall survival, disease-specific survival, and recurrence-free survival are equivalent. Therefore, pediatric patients with SCC of the oral tongue should be treated similar to adult patients.[5]

Oral cancer occurring in young adults is not common but should always be considered when they present with persistent ulceration, leukoplakia, erythroplakia

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**Table 1. Patient characteristics, treatment and results of squamous cell carcinoma of the oral tongue in patients less than fifteen years of age: cases reported in the literature.**

<table>
<thead>
<tr>
<th>Author</th>
<th>Publication date</th>
<th>Sex</th>
<th>Age</th>
<th>Location</th>
<th>Predisposing factor</th>
<th>Pathology</th>
<th>TNM staging</th>
<th>Treatment</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amichetti[6]</td>
<td>1989</td>
<td>female</td>
<td>14</td>
<td>Right anterior half</td>
<td>None</td>
<td>Moderately differentiated SCC</td>
<td>T3N1M0</td>
<td>RT+CHT</td>
<td>Recurrence after 3 months and death after 5 months</td>
</tr>
<tr>
<td>Murayama et al.[6]</td>
<td>1990</td>
<td>male</td>
<td>11</td>
<td>Tip dorsum and left side</td>
<td>Fanconi’s anemia and BMY</td>
<td>Well differentiated SCC</td>
<td>T3N?M?</td>
<td>CHT</td>
<td>Died at 3 months</td>
</tr>
<tr>
<td>Torossian et al.[10]</td>
<td>2000</td>
<td>male</td>
<td>13</td>
<td>right side</td>
<td>None</td>
<td>Well differentiated SCC</td>
<td>T3N0M0</td>
<td>CHT+Surg.+RT</td>
<td>No recurrence in 2 years follow up</td>
</tr>
<tr>
<td>Soni et al.[11]</td>
<td>2001</td>
<td>female</td>
<td>8</td>
<td>Left side</td>
<td>None</td>
<td>Undifferentiated SCC</td>
<td>T4N2M0</td>
<td>RT+CHT</td>
<td>disease-free 24 months after treatment Progressive growth 4 y later and died after 4months Recurrence after 4months and well in 5months follow up</td>
</tr>
<tr>
<td>Salum et al.[12]</td>
<td>2006</td>
<td>female</td>
<td>12</td>
<td>left side of the dorsum</td>
<td>Fanconi anemia and bone marrow transplantation</td>
<td>SCC</td>
<td>T1N0M0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Seyedmajidi and Faiza-badi[13]</td>
<td>2008</td>
<td>male</td>
<td>14</td>
<td>Tip</td>
<td>None</td>
<td>moderate- to well-differentiated SCC</td>
<td>T1N0M0</td>
<td>Surg.+ Surg.</td>
<td>-</td>
</tr>
<tr>
<td>Fadoo et al.[14]</td>
<td>2010</td>
<td>female</td>
<td>11</td>
<td>Left side</td>
<td>chewing betel nut</td>
<td>infiltrating SCC</td>
<td>T4N3Mx</td>
<td>-</td>
<td>?</td>
</tr>
<tr>
<td>Present case</td>
<td>2011</td>
<td>female</td>
<td>15</td>
<td>Base of tongue</td>
<td>None</td>
<td>Well differentiated SCC</td>
<td>T1N?M0</td>
<td>RT+CHT then Surg.</td>
<td>Died 1 month later</td>
</tr>
</tbody>
</table>
or swellings with no obvious local cause particularly in the high-risk sites of the tongue and floor of the mouth.[13]

There is a need to investigate the etiology of intra oral cancers in younger patients since a significant proportion (almost 40%) of these patients do not have associated risk factors for cancer.[1]

REFERENCES