Case Report

Basaloid squamous cell carcinoma of the uvula: Report of a case and review of the literature

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Abstract

We report a rare case of squamous cell carcinoma (SCC) with basaloid appearances arising in the uvula of a 71-year-old man. The tumor was surgically removed because it was localized only in the uvula. Histopathologically, it was mainly composed of irregular-shaped foci of basaloid SCC cells. It showed some invasive growth but was laterally continuous with foci of carcinoma in situ and epithelial dysplasia, suggesting its sequential pathogenesis from a precancerous lesion. Although the patient did not have local recurrences, he had metastatic foci in one of his right cervical lymph nodes seven months after initial surgery. We performed radical neck dissection, while he did not want to receive additional chemotherapy and radiotherapy. Fifteen months after the neck dissection, he is free from disease in terms of recurrence and metastasis of SCC. This is the first report of a primary basaloid SCC case arising in the uvula.

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1. Introduction

Squamous cell carcinoma (SCC) is the most representative type among head and neck cancers, accounting for about 90% of them, which might correspond approximately to 450,000 newly diagnosed cases every year worldwide [1,2]. In the oral cavity, SCC most frequently occurs in the tongue and the gingiva, followed by the lip, buccal mucosa, and floor of the mouth, though their frequencies vary from area to area in the world. Those of the oropharynx must be ranked the lowest among oral cavity SCCs [3,4]. Among the oropharyngeal SCCs, the soft palate must be the most frequent site. Although soft palate SCCs would occasionally extend to the uvula, primary SCCs limited to the uvula are very rare, accounting for only 1% or less of the oropharyngeal SCCs [5]. Recently, we experienced such an extremely rare case of primary uvula SCC, the histopathology of which was also unusual with basaloid appearances. In this report, we document its clinicopathological characteristics and discuss its pathogenesis based on histopathological investigations.

2. Case report

2.1. Clinical course

A 71-year-old man was referred to the Department of Oral and Maxillofacial Surgery, Niigata University Hospital by his dentist for swelling of his uvula, which had already been diagnosed by biopsy as squamous cell carcinoma (SCC). The patient had noticed the swelling for six months prior to biopsy. In addition, the patient had a hepatocellular carcinoma of the liver and its associated thrombocytopenia, which had not yet been treated.

At the first visit, intraoral examination showed a red-colored and rough-surfaced swelling, measuring 12 mm in diameter, in his uvula involving both the oral and pharyngeal aspects (Fig. 1). There were patchy and shallow ulcers over the whole surface of the swelling. There were no abnormal findings in the other parts of the oral cavity. His regional lymph nodes were not palpable. Computed tomography (CT) revealed a relatively well-demarcated tumor...
mass in the uvula, measuring 15 mm in diameter. The tumor slightly enhanced on CT images. Laboratory tests showed a decreased number of platelets (4100/μl), while the other data were within normal limits.

Prior to surgical removal of the uvular tumor, the patient took transcatheter arterial chemoembolization to his hepatocellular carcinoma because it was rapidly increasing in size. One day after platelet transfusion, the patient had a surgery for the uvular tumor under general anesthesia. It was removed with a 10 mm safety surgical margin but leaving neighboring muscle tissues as much as possible. The surgical material was histopathologically examined, which showed that the SCC lesion was excised successfully. The patient’s swallowing and velopharyngeal functions were not affected by the surgery. In spite of the safety margin of 10 mm, the patient had metastatic foci in his right cervical lymph node seven months after the initial surgery, for which the patient took radical neck dissection. Histopathologically, one of the right superior internal jugular lymph nodes had metastatic SCC foci, which spread to the extranodal space. The patient did not receive additional chemotherapy and radiotherapy of his own will. He is free from disease in terms of recurrence and metastasis of the palatal cancer for a year and half after the neck dissection.

2.2. Pathological findings

The surgically excised specimen showed a rough-surfaced polypoid lesion on the apex of the uvula (Fig. 2A). Histopathologically, the polyp was densely composed of irregular-shaped foci of SCC cells with basaloid appearances with narrow fibrous stroma, and it was diagnosed as basaloid SCC. SCC foci were rather limited to the uvula apex region and were continuous with carcinoma in situ (CIS) (Fig. 2A, brackets) and further with epithelial dysplasia (Fig. 2A, asterisks) foci toward the palatal and nasal mucosa. At the same time, however, some SCC foci showed obviously...
invasive changes toward the muscle layer. Some of the SCC foci contained keratin pearls, to which muscle fiber reactions were induced (Fig. 2B). Immunohistochemically, keratin (K) 13 was not positive but instead K17 was positive in SCC and CIS cells (Fig. 2C). K19 was partially positive (not shown) but no K7 was positive in SCC and CIS cells (not shown). Ki-67-positive (+) nuclei were very frequently observed among SCC cells (around 50%) (Fig. 2D), indicating its highly proliferative phenotype. Fig. 3A shows one of the transitional zones between SCC and precancerous lesions indicated by a dotted rectangle in Fig. 2A. CIS and epithelial dysplasia foci were reciprocally distinguished by switching between K13 and K17 (Fig. 3C and D). Ki-67+ cells were scattered over the epithelial zone in CIS, while they were condensed in the basal zone of epithelial dysplasia (Fig. 3B). The lesion was diagnosed as basaloid SCC.

3. Discussion

Oral cavity cancers, especially SCCs, arise most frequently in the tongue, gingiva, and buccal mucosa, though their frequencies may differ from area to area of the world because their occurrences are related to varieties of lifestyle [3,6–8]. When compared with these frequent sites for oral cancers, frequencies of oropharyngeal SCCs are much less [9,10]. Among the oropharyngeal SCCs, those occurring in the uvula are extremely rare as far as we retrieved the literature [5,11–18]. There were 10,062 cases of oropharyngeal SCCs reported in the literature. Among them, 199 cases arose primarily in the uvula (2.0%), including the present case of ours as summarized in Table 1 [5,11–18]. Uvular SCCs arise mainly in male with a male to female ratio of 3.5:1 among a wide range of age groups. Lymph node metastases but no distant metastasis were reported in them. The majority of them were surgically removed, while the others were treated with radiation with some failures. Some of them were reported in them. The majority of them were surgically removed, while the others were treated with radiation with some failures. Some of them were treated with surgery (Table 1). Even in those oropharyngeal SCCs the uvula [19], which seems very rare in the uvula, because such a report was not found in the literature. Since the basaloid SCC histology was rare even among oral SCCs, we performed immunohistochemistry to seek for its origin. No K7-positive (duct-epithelial character) but partial K19-positive (basal cell character) profiles may indicate that the lesion was not originated from the main body of the palatal mucous gland but that it was associated with excretory duct opening areas of the mucosal surface [20]. The very high Ki-67 labeling index (50%) among the SCC cells may explain the metastatic event of the present case.

The treatment of basaloid SCCs has not been established. In addition to surgical resection, radiation and chemotherapy have been performed for them [21–25]. Although basaloid SCC has been considered to be radiation sensitive [21,22], there have been reports in which patients with basaloid SCC were treated by chemotherapy or surgery with chemotherapy [22–24]. Raslan et al. recommend chemotherapy due to its high incidence of distant metastasis and relatively poor prognosis among the head and neck basaloid SCC [25]. However, a standard chemotherapy regimen for basaloid SCC has not yet been formulated. In the present case, we chose surgical resection as a primary intervention because the tumor was limited to the uvula and because the patient already had transcatheter arterial chemoembolization for his hepatocellular carcinoma. Its surgical removal was successful without local recurrences for a year and half after operation, while the patient had a metastatic lymph node in his neck seven months after the initial surgery.

Such a metastatic tendency of basaloid SCC was already recognized; Soriano et al. reported that distant metastases in basaloid SCCs were six times more frequent than in ordinary SCCs, resulting in their poorer prognoses [26]. Metastatic tendencies of basaloid

Fig. 3. Histopathological findings of borderline malignant lesions in the stalk area of the polypoid tumor (rectangle area of Fig. 2A). (A) Hematoxylin and eosin stain, (B) immunoperoxidase stain for Ki-67, (C) immunoperoxidase stain for K13, and (D) immunoperoxidase stain for K17. (A) 12.5×; (B–D) 90×. Next to basaloid SCC foci (left side), CIS (bracket: CIS) and epithelial dysplasia (bracket: dysplasia) foci were located sequentially toward normal epithelial areas (right side) (A). The interface zone between CIS and epithelial dysplasia foci are enlarged in panels (B) to (D). Ki-67-positive nuclei were scattered over the whole epithelial zone in CIS but restricted to the basal zone in epithelial dysplasia (B). K13 disappeared from CIS (C), while K17 reciprocally emerged in CIS (D); vice versa, K13 was positive (C) but K17 was not positive (D) in epithelial dysplasia foci. The main basaloid SCC foci were surrounded by CIS and then by epithelial dysplasia, suggesting their sequential histopathogenesis of SCC from precancerous lesions.
Table 1
Reported cases of squamous cell carcinoma of the uvula.

<table>
<thead>
<tr>
<th>Reference #</th>
<th>Tumor type</th>
<th>Clinical stage (UICC)</th>
<th>Treatment</th>
<th>Histology</th>
<th>Age (year)</th>
<th>Sex</th>
<th>Unknown</th>
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<tr>
<td>[25]</td>
<td>SCC</td>
<td>T1</td>
<td>S+R</td>
<td>SCC</td>
<td>20-65</td>
<td>M</td>
<td>0</td>
</tr>
<tr>
<td>[26]</td>
<td>SCC</td>
<td>T2</td>
<td>S+R+C</td>
<td>SCC</td>
<td>37-92</td>
<td>M</td>
<td>1</td>
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<tr>
<td>[27]</td>
<td>SCC</td>
<td>T3</td>
<td>S+R+C</td>
<td>SCC</td>
<td>42-76</td>
<td>M</td>
<td>5</td>
</tr>
<tr>
<td>[28]</td>
<td>SCC</td>
<td>T4</td>
<td>S+R+C</td>
<td>SCC</td>
<td>50-92</td>
<td>M</td>
<td>0</td>
</tr>
<tr>
<td>[29]</td>
<td>SCC</td>
<td>T5</td>
<td>S+R+C</td>
<td>SCC</td>
<td>10-92</td>
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<td>0</td>
</tr>
<tr>
<td>[30]</td>
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<td>T6</td>
<td>S+R+C</td>
<td>SCC</td>
<td>12-92</td>
<td>M</td>
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</tr>
<tr>
<td>[31]</td>
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<td>T7</td>
<td>S+R+C</td>
<td>SCC</td>
<td>19-92</td>
<td>M</td>
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<tr>
<td>[32]</td>
<td>SCC</td>
<td>T8</td>
<td>S+R+C</td>
<td>SCC</td>
<td>23-92</td>
<td>M</td>
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</tr>
<tr>
<td>[33]</td>
<td>SCC</td>
<td>T9</td>
<td>S+R+C</td>
<td>SCC</td>
<td>42-92</td>
<td>M</td>
<td>0</td>
</tr>
<tr>
<td>[34]</td>
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<td>T10</td>
<td>S+R+C</td>
<td>SCC</td>
<td>50-92</td>
<td>M</td>
<td>0</td>
</tr>
<tr>
<td>[35]</td>
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<td>S+R+C</td>
<td>SCC</td>
<td>100-92</td>
<td>M</td>
<td>0</td>
</tr>
<tr>
<td>[36]</td>
<td>SCC</td>
<td>T12</td>
<td>S+R+C</td>
<td>SCC</td>
<td>120-92</td>
<td>M</td>
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</tr>
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</table>

SCC have been reported; it metastasizes via hematogenous and lymphatic routes finally to distant organs including the lung, liver, bone, skin, and brain [25,27,28]. However, when limited to the oropharynx region, prognoses of basaloid SCCs were better than ordinary SCCs [29]. Anyhow, follow-up examination after surgery should be essential, as we found lymph node metastasis during follow-up examinations. Although the patient is now free from disease in terms of recurrence and metastasis for one year and half after the last operation, we have to very carefully follow-up the patient, because there are no actual documents of basaloid SCC in the uvula in the literature.

Conflict of interest

The authors declare no conflict of interest.

References


