

## 조혈세포이식 후 재발한 백혈병 환자의 혀 종물

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〈Abstract〉

### Tongue Mass Arising after Hematopoietic Cell Transplantation and Leukemia Relapse

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Oral examination in a patient with a history of acute lymphoblastic leukemia (ALL) and allogeneic hematopoietic cell transplantation (HCT) needs considerations of leukemia relapse and graft-versus-host disease (GVHD). Oral manifestations may contribute to early detection of relapse or systemic complications making accurate oral examination and diagnosis significant. We report a case of a large tumor like mass arising in a patient with a history of ALL and HCT. The patient had been diagnosed with ALL relapse and was being treated with chemotherapy, and furthermore was suspected of GVHD development.

**Key words:** Precursor cell lymphoblastic leukemia-lymphoma; HCT, GVHD, Mucocele

## I. INTRODUCTION

Acute lymphoblastic leukemia (ALL) is a hematopoietic malignancy of lymphoid progenitor cells<sup>1)</sup>. Malignant lymphoid cells proliferation accumulated the bone marrow, peripheral blood and extramedullary regions with a rapid progression, including the oral cavity. ALL mainly arises in children and is the most threatful type of cancer under the age 20<sup>1,2)</sup>. Advances in multiagent chemotherapy has increased the

survival rate up to 90% in children, with less achievements of 30-40% in adult ALL<sup>2)</sup>. Patients, especially those with disease relapse, are considered for allogeneic hematopoietic cell transplantation (HCT). Acute and chronic graft-versus-host disease (GVHD) are representative complications that may follow HCT<sup>3)</sup>. Patients with a medical history of ALL are possible of experiencing various treatment levels of chemotherapy or HCT and are at risk for leukemia relapse which gives a wide range of considerations for dentists during oral examination. In this report, we discussed a case of a large pedunculated tongue mass in a patient with history of ALL and HCT.

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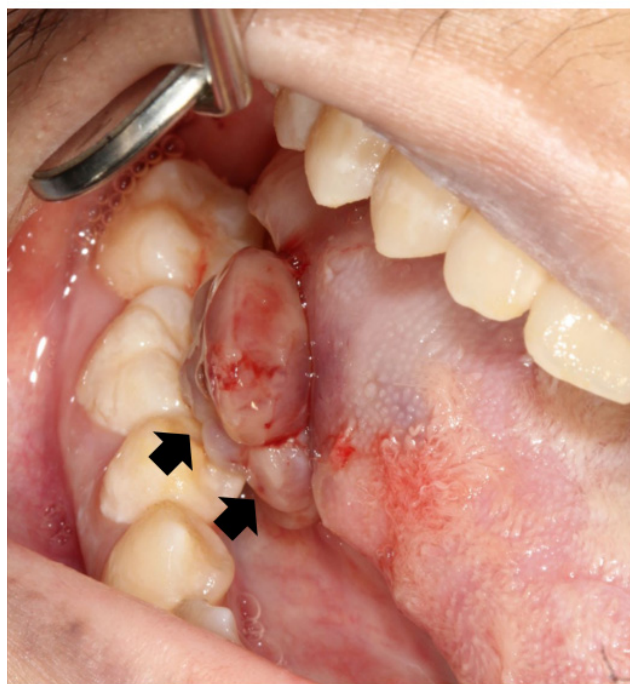
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## II. CASE REPORT

A 20-year-old male was referred from the department of Internal Medicine to the department of Oral and Maxillofacial Surgery (OMFS) for an exophytic soft tissue mass on the right lateral surface of tongue. The patient had been diagnosed with B-cell ALL and had gone through allogeneic HCT 17 months before initial visit at OMFS. Three months ago, relapse of ALL was discovered with suspicions of chronic GVHD in the skin and oral cavity, so chemotherapy was being treated. The patient had been suffering from dysphagia and nausea. There were neither any history of pain, spontaneous bleeding or trauma to the tongue including tongue biting. An exophytic soft tissue mass on the right lateral side of tongue was seen by oral examination. It was a pedunculated, multinodular red mass with an ulcerated surface. The size of the mass was 1,5×1,0×0,8cm (Fig. 1). The mass was excised for pathological diagnosis. Other than the tongue mass, several vesicles were observed on the soft palate and skin nodules were observed on the posterior neck and right subareolar region. Clinically, the vesicles of palate were thought to be superficial mucoceles while leukemic involvement was suspected at the skin and subareolar region.

On pathological examination of the excised specimen, a sparse central region with a fibrous region at the periphery was seen under low microscopic magnification (Fig 2A). Ulceration was surrounding the whole specimen. Higher magnifications of the sparse region revealed ingrowth of fibroblasts, blood vessels and normal inflammatory cells infiltrates in a mucinous background (Fig. 2B). The main composition of cells were foamy macrophages (Fig. 2C). The fibrous region was composed of granulation tissue and fibrosis. The diagnosis was organizing mucocele, extravasation type. There were no evidences of ALL relapse within the specimen. Recurrence of the mucocele at the tongue was

not observed during a 1-year follow up.

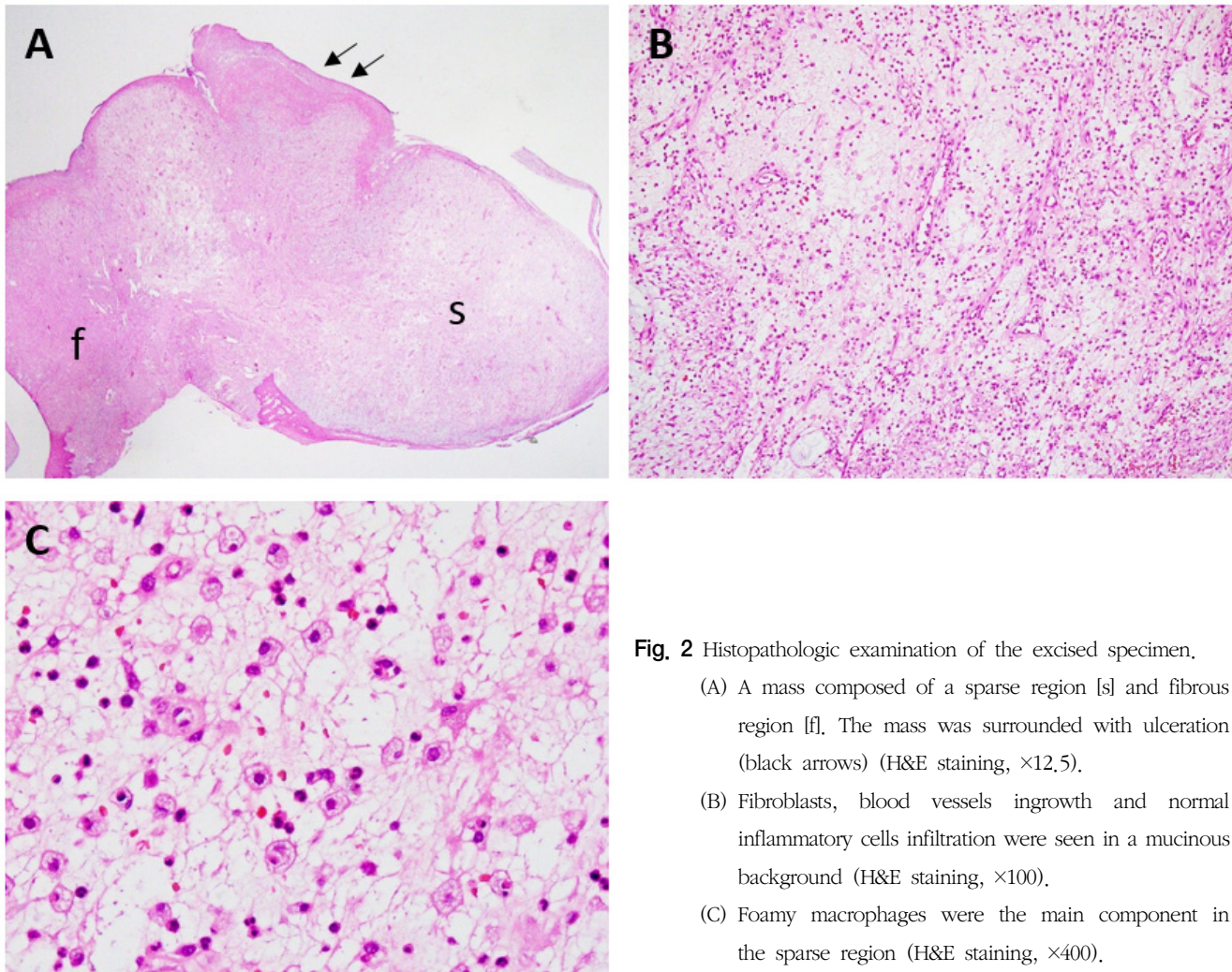


**Fig. 1** A pedunculated, multinodular soft tissue mass on the right lateral tongue with ulceration (black arrows).

## III. DISCUSSION

Abnormal oral symptoms, especially tumor like mass, may be worrisome in leukemia patients or those with a history of leukemia. If the patient had an additional history of chemotherapy or HCT, the differential diagnosis may be more complicated. ALL relapse, complications of chemotherapy and GVHD must be considered during clinical diagnosis.

Typical oral manifestations of leukemia and their treatments are mucositis, cervical lymphadenopathy, infections, periodontal diseases and gingival bleeding<sup>4,5</sup>. Extramedullary leukemic infiltration is mainly observed in acute myeloid leukemia (AML) rather than ALL. Myeloid sarcoma, the extramedullary tumor arising in AML patients, is composed of immature myeloblasts or granulocytic cell proliferation appearing as



**Fig. 2** Histopathologic examination of the excised specimen.

- (A) A mass composed of a sparse region [s] and fibrous region [f]. The mass was surrounded with ulceration (black arrows) (H&E staining,  $\times 12,5$ ).
- (B) Fibroblasts, blood vessels ingrowth and normal inflammatory cells infiltration were seen in a mucinous background (H&E staining,  $\times 100$ ).
- (C) Foamy macrophages were the main component in the sparse region (H&E staining,  $\times 400$ ).

a painful ulcerated reddish-brown nodule<sup>6)</sup>. Leukemic infiltration in ALL may exhibit leukemic infiltration in organs in features of hepatomegaly or splenomegaly, and rarely infiltrates in the major salivary glands<sup>7,8)</sup>. Generalized gingival enlargement by leukemic infiltration is not as common as in AML. Unlike AML, a localized tumor mass in the extramedullary region is not typical in ALL. Therefore, a localized tumor like lesion is less likely to be a sign of ALL leukemic infiltration or relapse.

The soft tissue mass in our case turned out to be a large mucocele with untypical characteristics. Ulceration, pedunculated-multinodular morphology and reddish color were supposed

to be due to the organizing state of the mucocele, clinically mimicking pyogenic granuloma or irritation fibroma. There are no specific issues of mucocele in known leukemia patients, but superficial mucoceles are well known to arise in post HCT patients with chronic GVHD. Unlike general mucoceles that typically occur in the lower lip by trauma, superficial mucoceles are thought to arise without trauma at the buccal mucosa or soft palate in mucosal lesions with chronic inflammation as in GVHD<sup>9-11)</sup>. It is thought that persistent inflammation of the mucosa induces injury and leakage of mucin in the minor salivary glands with periodic recurrences. The presence of superficial mucoceles may be

an early sign of chronic GVHD in HCT patients and a full evaluation for GVHD must be considered. The tongue mucocele in our case was a single large mucocele with suspected traumatic features of ulceration despite that the patient denied any history of trauma at the tongue. The mucocele may have started as a superficial mucocele and increased in size due to organization and granulation tissue deposition by persistent inflammation and possible trauma during occlusion. The precise etiology of the tongue mucocele cannot be disclosed in this case, nevertheless our patient had additional superficial mucocele like vesicles on the soft palate supporting the possibility of GVHD. Post-HCT patients with mucocele(s) should be evaluated for GVHD, especially when a definite source of trauma was not identified.

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