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Solitary Fibrous Tumor of the Buccal Mucosa: A Patient Report

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Solitary fibrous tumor (SFT) is a soft tissue tumor most frequently localized in the pleura, but it has recently been described in other body sites. We have encountered a rare patient with an SFT of the buccal mucosa. We examined the case clinically, histopathologically and immunohistochemically. Dimension of the resected tumor was 3 by 2.5 by 3 cm. Histological observation revealed that the tumor was composed of spindle- or ovoid-shaped cells with varying amounts of haphazardly arranged collagen bundles. Immunohistochemically, the tumor cells exhibited strong staining with CD34 and bcl-2 but were negative to smooth muscle actin, ckit and S-100 protein. The patient was discharged 7 days after surgery, with no signs of recurrences after 14 months. We reported a rare case of buccal SFT and reviewed 38 cases of intraoral SFT.

Key words: buccal mucosa; CD34; immunohistochemistry; oral cavity; solitary fibrous tumor

Solitary fibrous tumor (SFT) is a rare neoplasm composed of spindle cells which Klemperer and Rabin (1931) first described in the pleura. In early reports, SFT was thought to arise from the mesothelial cell and was once termed localized fibrous mesothelioma (England et al., 1989). However, recent immunohistochemical, ultrastructural and tissue cultural studies have suggested that the origin of this tumor is the mesenchymal tissue (Dervan et al., 1986; Ali et al., 1997). Thereafter, SFTs at almost every anatomic location have been reported (Goodlad et al., 1991), but very rarely in the oral cavity. In the present paper, we present a case of SFT originating from the buccal mucosa.

Abbreviations: MRI, magnetic resonance imaging; SFT, solitary fibrous tumor; SMA, smooth muscle actin; GIST, gastrointestinal stromal tumor

Patient Report

In 2002, a 54-year-old man noticed a mass in the left buccal mucosa. The mass had been asymptomatic and had not increased in size. In 2003, he visited a hospital for cytological examination of the mass, where its cytology was interpreted as benign. In March 2004, he was referred to our clinic for further examination of the mass.

Intraoral examination revealed a hard, elastic and nontender mobile mass which was about 3 cm in size, 0overlayed by apparent normal buccal mucosa in its color and texture (Fig. 1). There was neither swelling of the cervical lymph-nodes nor any significant change in laboratory data. Magnetic resonance imaging (MRI) revealed that the lesion was a well-circumscribed, solid mass measuring

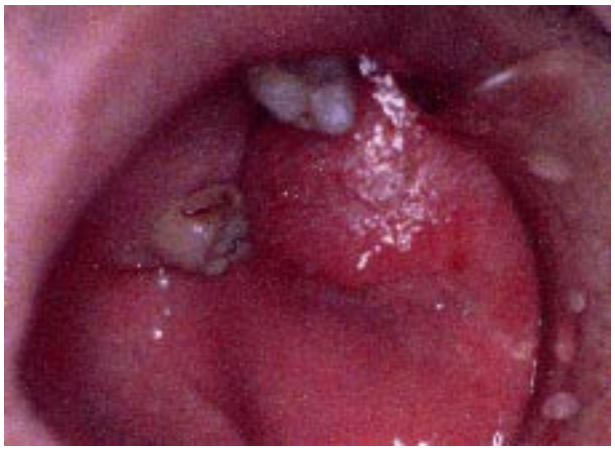

Fig. 1. An elastic hard mobile mass about 3 cm in size could be palpated intraorally.

about 3 cm in the right posterior buccal space. The mass showed a signal intensity homogeneous with that of the muscle on both T1- and T2-weighted images (Fig. 2). Surgical extirpation was performed under general anesthesia in April 2004. The tumor surface was smooth and clearly defined and was easily dissected from the surrounding tissue. The tumor was oval-shaped, and measured 3 by 2.5 by 3 cm. The cut surface of the tumor was solid, firm, grayish-white and homogeneous (Fig. 3).

Histologically, the tumor was well-circumscribed and encapsulated with thin fibrous tissues. The lesion was composed of spindle- or ovoid-shaped cells with a various amount of collagen bundles haphazardly arranged. The tumor showed a partially slight storiform pattern appearance (Fig. 4) and was vascularized, occasionally contained areas of dilated vessels with a stag-horn appearance sometimes seen in hemangiopericytoma (Fig. 5). The mitotic count was 0/10 high-power-field. There was no necrosis.

Through immunohistochemical studies on paraffin-embedded tissue sections, the tumor cells were strongly positive to CD34 and bcl-2, but negative to smooth muscle actin (SMA), c-kit and S-100 protein (Fig. 6). These findings resulted in a diagnosis of SFT.

After surgery, the patient improved progressively and was discharged with no difficulty. Since

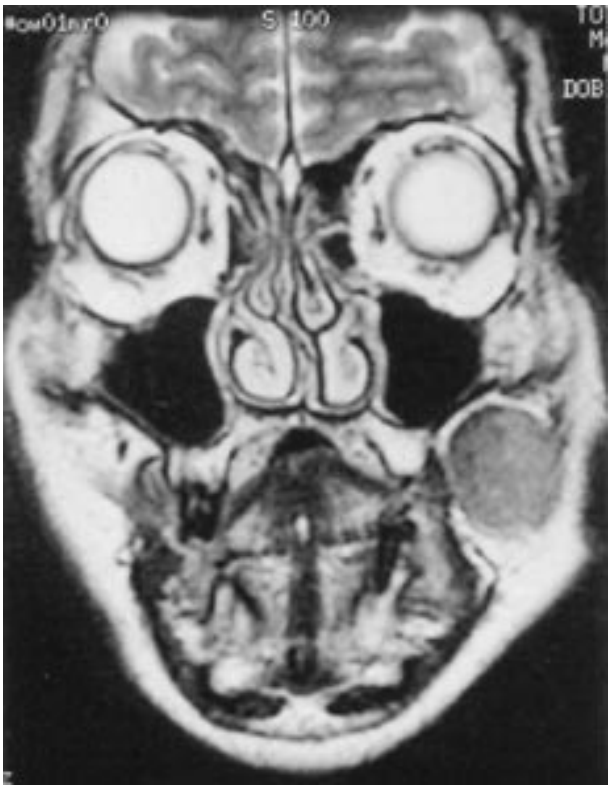

Fig. 2. MRI shows a well-circumscribed mass about 3 cm in diameter. The mass shows a signal intensity homogeneous to that of the muscle on both T1- and T2-weighted images.

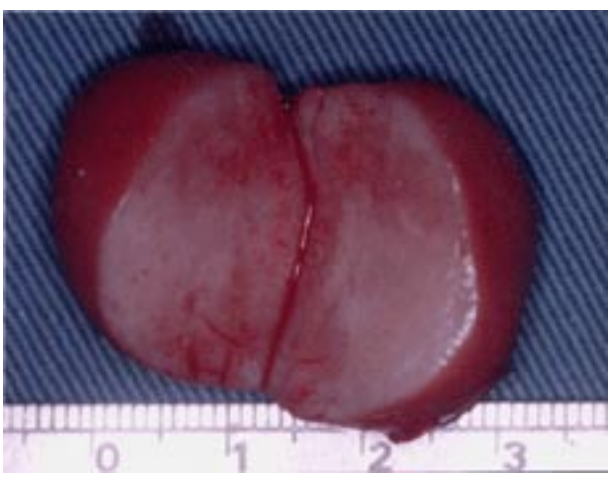

Fig. 3. The cut surface of the tumor is solid, firm, grayish-white and homogeneous.

then, the patient was followed-up for 1 year in the outpatient clinicand has showed no signs of recurrence as of this writing.

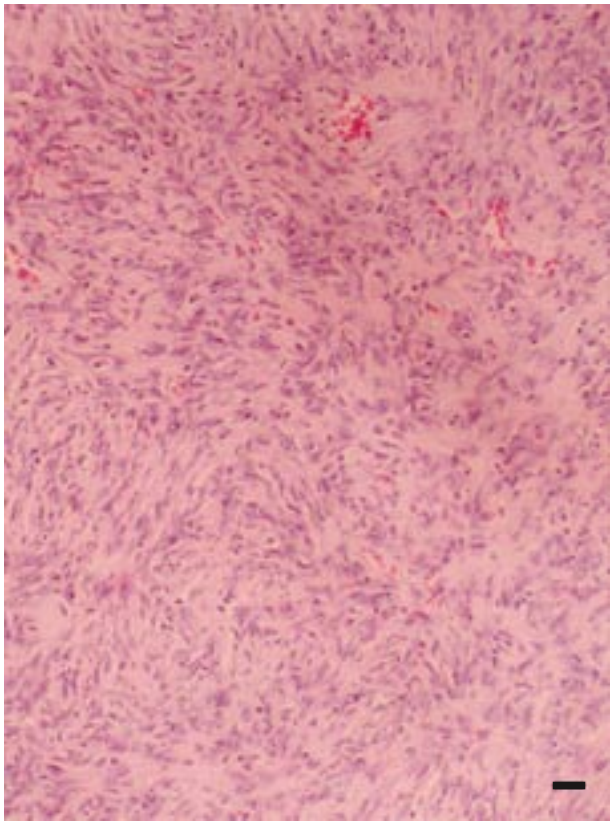

Fig. 4. The tumor shows a partially storiform pattern appearance (hematoxylin and eosin stain). Bar =100 μm.

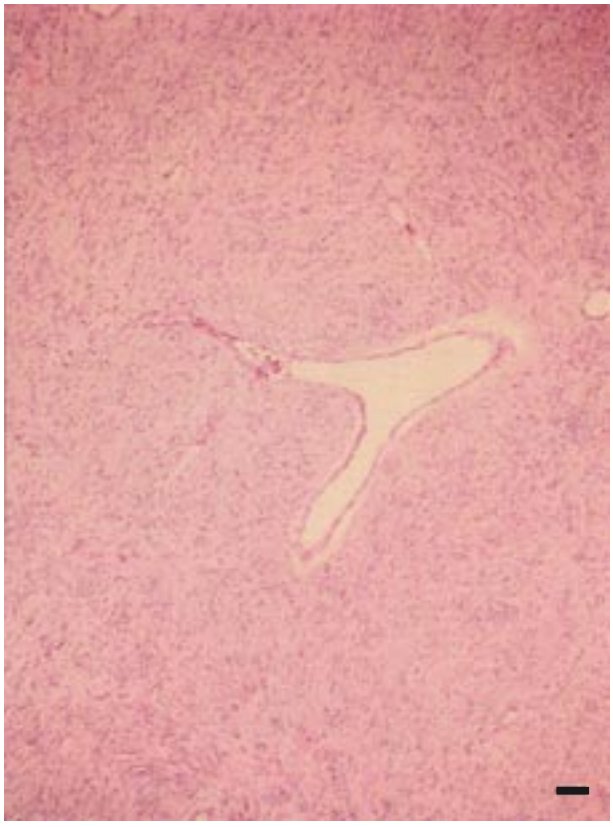

Fig. 5. The SFT tumor is vascularized and partially contains areas of dilated vessels with a stag-horn appearance also occasionally seen in hemangiopericytoma (hematoxylin and eosin stain). Bar = 160 μm.

Discussion

Current advances in immunohistochemical, ultrastructural and tissue cultural techniques have greatly contributed to studies on SFTs. Since Gunhan (1994) first described SFT in the oral cavity, many intraoral SFTs were found and 38 patients were reported in the literature, all of it in English (Gunhan et al., 1994; Suster et al., 1995; Piatteli et al., 1998; Iwai et al., 1999; Kurihara et al., 1999; Perez-Ordonez et al., 1999; Brunnemann et al., 1999; Lukinmaa et al., 2000; Alawi et al., 2001; Hirano et ai., 2001; Kuo et al., 2001; Shin et al., 2001; Harada et al., 2002; Hardisson et al., 2002; Vargas et al., 2002; Shnayder et al., 2003; Yanamoto et al., 2003). The clinicopathological features of these oral SFT patients including the present one are summarized in Table 1 with no significant sex predilection (21 females, 18 males). SFTs develop in adulthood over a wide age range, and most are identified between 40s and 70s (mean 51.3 years) with tumor sizes varing 8 to 45 mm (mean 21.5 mm). Patients with pleural large SFTs have symptoms such as chronic cough, short of breath, osteoarthropathy, chest pain and hypoglycemia (Weiss et al., 2001). In the present series of studies (Table 1), no such symptoms have been identified in patients with intraoral SFT except one. This exception was a female patient with malignant SFT of the tongue, and actually had a history of dysarthria and dysphagia (Shnayder et al., 2003). She was the only case of malignant SFT of the oral cavity, with a 25-year history of an apparently stable tongue mass. However, the mass increased in size, and her symptoms were aggravated for 6 months before admission. Therefore, we should suspect