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ORIGINAL ARTICLE

Cheilitis as a variation of *Candida*-associated lesions

H Terai, M Shimahara

Department of Oral Surgery, Osaka Medical College, Osaka, Japan

OBJECTIVE: Occasionally, the clinical diagnosis of *Candida*-associated lesion is difficult because of a variety of its clinical manifestations. There have been a few reports on *Candida*-associated lip lesion except angular cheilitis. In this paper, we investigate the relation of *Candida* in persistent lesions of the lip.

SUBJECTS AND METHODS: The present study includes consecutive nine patients with persistent erosive lip lesion. For each patient the age at presentation, gender, duration of the disease, other symptoms or signs, complete medical history and prior treatment or medications for the symptom were obtained. Then, mycological examination and the direct cytologic examination were performed.

RESULTS: The reported average duration of the disease was 7 months. Six of nine patients had received prior treatments with topical steroids at the other clinic, which failed to resolve their symptoms. Six of nine patients had a predisposing factor for candidiasis. In the culture examination, *Candida albicans* were isolated in seven patients (77.8%). Five of nine patients received the direct cytologic examination, and four of them revealed pseudohyphae of fungi. The anti-fungal treatment was miconazol gel 25 mg four times per day, and average duration of the treatment was 2 weeks. The outcome was as follows: complete remission in five, remarkable response in two and no response in two.

CONCLUSION: Our results suggested that one form of the varieties of *Candida*-associated lesions might be considered in the case of lip lesion with unknown origin that was persistent and ineffective to the topical steroids treatment.

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Keywords: cheilitis; *Candida*-associated lesion; *Candida albicans*

Correspondence: Haruhiko Terai, Department of Oral Surgery, Osaka Medical College, 2-7 Daigaku-machi, Takatsuki-Shi, Osaka, 5698686 Japan. Tel: +81 72 683 1221, Fax: +81 72 681 3723, E-mail: ora007@poh.osaka-med.ac.jp
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Introduction

Candidiasis is an important disease affecting the oral cavity in a significant percentage of the population. Occasionally, the clinical diagnosis of *Candida*-associated lesion is difficult by a variety of its clinical manifestations. *Candida*-associated lesions in the oral cavity are well-known as denture stomatitis, median rhomboid glossitis, and angular cheilitis (Lynch, 1994; Samaranayake *et al*, 2002). Angular cheilitis is relatively common in the elderly and the immunoincompetent host, such as HIV-infected patients, diabetes mellitus, internal malignancy, and anemia (Samaranayake and Holmstrup, 1989; Lynch, 1994; Samaranayake *et al*, 2002). On the contrary, cheilitis is classified according to etiologic factors: actinic cheilitis by the ultraviolet light, cheilitis glandularis by inflammatory disorder of minor salivary glands, exfoliative cheilitis by self-induced trauma, contact cheilitis or atopic cheilitis by allergic reaction and angular cheilitis by candidal infection (Rogers, 1999). But there have been few reports on *Candida*-associated lip lesion except angular cheilitis.

In this paper, we investigate the relation of *Candida* in persistent lesions of the lip.

Patients and methods

The present study includes consecutive nine patients with persistent erosive lip lesion, who were referred to our department between January 2001 and May 2004. For each patient the age at presentation, gender, duration of the symptom (cheilitis), other symptoms or signs, complete medical history and prior treatment or medications for the symptom were obtained. For mycological examination, the samples were collected with scratch on the lip lesion, and then incubated on Sabouraud's agar medium at 35°C for 3 days. The direct cytologic examination using a quick staining system, the methods have been described elsewhere (Terai and Shimahara, 2005), was performed with the same samples in five of nine patients.

The treatment was miconazol gel 25 mg four times per day. Patients were instructed to drop the gel onto the tongue, spread whole mouth including

lip lesions and hold for at least 10 min, and then to swallow.

Results

Clinical features

The study consists of nine patients (three men and six women, mean age 65.1 years, range 27–79 years). Three of nine patients had partial or complete removal prosthesis. They all complained erosive lesion of the lower lip. The sites of the lesion were middle lower lip in eight and right corner of the lower lip in one (case 2). Other symptoms or signs were angular cheilitis in case 1 and angular cheilitis with atrophic tongue in case 4. The reported average duration of the disease was 7 months, with a range of 2–15 months. Six of nine patients had received prior treatments with topical steroids at the other clinic, which failed to resolve their symptoms. Six of nine patients had a predisposing factor for candidiasis that revealed from medical history including systemic steroids in two, anemia in two, diabetes mellitus and antibiotics in one (Table 1).

Examinations and outcome

In the culture examination, *Candida* species were isolated in seven patients (77.8%), and all of them were *Candida albicans*. Four of five revealed pseudohyphae of fungi in the direct cytologic examination.

The average duration of antifungal treatment was 2 weeks (range 1–4 weeks). The outcome was as follows: complete remission in five, remarkable response in two and no response in two (Table 2, Figures 1 and 2). Of no response cases, one (case 8) was dropped out of follow up and the other treated successfully with a herbal medicine. In these two cases, a relief to antifungal treatment was not observed after 1 week contrary to the responded cases.

Discussion

In general, cheilitis is classified according to etiologic factors: actinic cheilitis by the ultraviolet light, cheilitis glandularis by inflammatory disorder of minor salivary glands, exfoliative cheilitis by self-induced trauma, contact cheilitis or atopic cheilitis by allergic reaction and angular cheilitis by candidal infection (Rogers, 1999). Usually, the treatment of cheilitis includes topical steroids except angular cheilitis. In the present cases, two-thirds of the patients had received topical steroids treatment, which failed to resolve their symptoms. They might be diagnosed clinically erosive lichen planus in the lip in spite of their predisposing factors for candidiasis. Occasionally, we encounter a secondary candidiasis after topical steroids treatment of oral lichen planus. But, the reported symptoms in the present cases were no change from the onset or pretopical steroids treatment. So, it might be suggested that the possibility of secondary candidiasis was relatively low in them. Furthermore, the lip lesions of present cases were not aggressive and progressive in spite of their long disease duration, and there were no precancerous clinical signs. So, we did not perform a histopathological examination immediately. In the case of lip lesion associated with angular cheilitis or atrophic tongue, the diagnosis of *Candida*-associated lesion is easy. However, the

Table 1 Details of the patients

Case no.	*Age*	*Sex*	*Size of lesion (cm)*	*Disease duration (months)*	*Prior treatment*	*Predisposing factor for candidiasis*
1	76	Man	1 × 2	2	Topical steroids	Systemic steroids (rheumatism)
2	27	Woman	1 × 1.5	3	Topical steroids	Systemic steroids (systemic lupus erythematosus)
3	79	Woman	1 × 0.5	12	Topical steroids	Anemia
4	75	Woman	1 × 1	10	none	Anemia
5	69	Woman	1 × 1	2	none	Antibiotics (pneumonia)
6	75	Woman	1 × 1	12	Topical steroids	none
7	77	Woman	1 × 2	3	Topical steroids	none
8	50	Man	1 × 1.5	15	Topical steroids	Diabetes mellitus
9	58	Man	1 × 1.5	4	none	none

Table 2 Examinations and outcome

Case no.	*Mycological examination (culture test)*	*Cytological staining (quick staining)*	*Duration of antifungal treatment (weeks)*	*Outcome*
1	*Candida albicans*	+	4	Complete remission
2	*C. albicans*	Not performed	2	Complete remission
3	*C. albicans*	Not performed	2	Complete remission
4	*C. albicans*	+	3	Complete remission
5	*C. albicans*	+	1	Remarkable response
6	–	–	2	Remarkable response
7	*C. albicans*	+	1	Complete remission
8	–	Not performed	1	No change
9	*C. albicans*	Not performed	2	No change

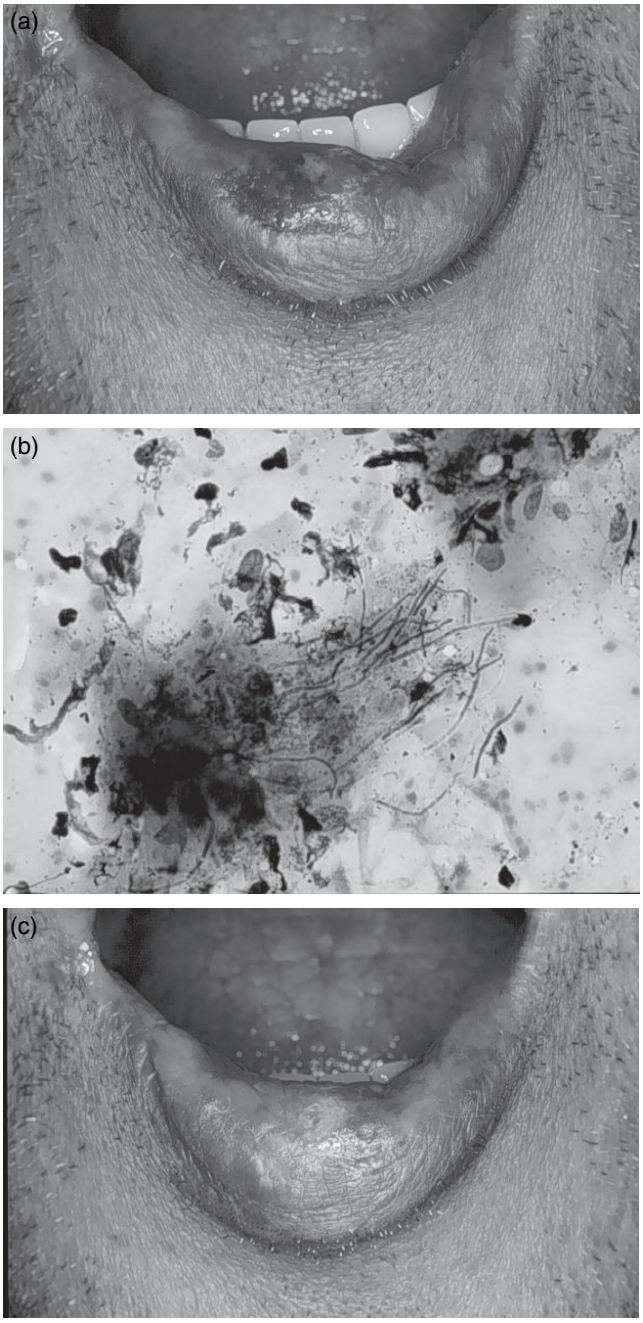

Figure 1 (**a**) Erosive lesion of the middle lower lip in case 1. (**b**) The direct scope examination of the samples revealed many fungal pseudohyphae (×400). (**c**) Cicatricial healing of the lesion was seen 4 weeks after anti-fungal treatment

differential diagnosis is difficult in the erosive lip lesion of sole symptom.

Angular cheilitis is commonly seen in elder patients. The lesion is a result of maceration due to deep, occlusive folds of the skin at the angles of the mouth in individuals with reduced facial height caused by old age or ill-fitting dentures (Samaranayake *et al*, 2002). However, it is seen in young individuals with HIV disease, possibly due to impaired immunity (Samaranayake and Holmstrup, 1989). The increasing prevalence of these

Figure 2 (**a**) Lesion of the right corner of the lower lip in case 2 with a chief complaint of severe contact pain. (**b**) Epithelization was seen 2 weeks after anti-fungal treatment

and other immunocompromised patient groups; use of broad-spectrum antibiotics, cytotoxics, and corticosteroids; common endocrine disorders such as diabetes mellitus; and severe nutritional deficiencies have resulted in the resurgence of oral candidiasis as a relatively common affliction (Samaranayake *et al*, 2002). Therefore, it is considered that angular cheilitis is not sole *Candida*-associated lesion in the lip. Reichart *et al* (1997) reported exfoliative cheilitis associated with candida infection in AIDS as another variant of candidiasis in AIDS patients. Bouquot and Fenton (1988) reported five cases of unusual juxtavermilion candidiasis in young patients. But, clinical findings of these reported cases are different from those of our cases.

On mycological examination, *C. albicans* was isolated in about 80% of our cases. Reported rates of yeast carriage in the human mouth vary widely (from 25% to 75%), depending on the population sampled and sensitivity of the sampling technique (Odds, 1988). *Candida* can be isolated from the oral cavity more frequently than pathologic changes are observed. Therefore a positive culture in the absence of other diagnostic signs and symptoms dose not necessarily imply candidal mucosal disease (Fotos *et al*, 1992). Because *Candida* is normally encountered as part of flora in the mouth, its isolation in culture must be supported by direct

demonstration of characteristic budding yeast, pseudohyphae and hyphae in the specimen of the lesions (Difonzo and Campanile, 1999). We performed a quick cytological staining and obtained useful direct demonstration.

The outcomes of antifungal treatment in the present cases suggested that one form of the varieties of oral *Candida*-associated lesions might be considered in the case of cheilitis with unknown origin that was persistent and ineffective to the topical steroids treatment.

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