

CLINICAL STUDIES ON TREATMENT OF APHTHOUS STOMATITIS TREATED WITH CRYOSURGERY.*

Il-Woo, Nam, D.D.S., M.S.D., MHPED. & Ph.D.

Dept. of Oral and Maxillofacial Surgery, School of Dentistry,
Seoul National University.

한냉외과 시술에 의한 아프타성 구내염 치치에 관한 임상적 연구

서울대학교 치과대학 악안면구강외과학교실

남 일 우

국문초록

저자는 지난 1년간 서울대학교병원 치과진료부 구강외과에 래원한 아프타성 구내염 환자 10명에 대하여 한냉외과 시술과 보존요법으로 치료하여 창상치유 및 동통호소에 관한 임상적 연구를 하였던 바 다음과 같은 결과를 얻었다.

1. 보존적 치료를 받았던 아프타성 구내염 병소는 대체로 14일 후에 치유됨을 관찰할수 있었다.
2. 한냉외과적 치료를 받았던 아프타성 구내염 병소는 시술후 5~7일경에 치유되었다.
3. 보존적 치료를 받은 환자는 음식물 섭취시 대체로 7~10일간 동통을 호소하였다.
4. 한냉외과적 처치를 받았던 환자는 치료 1일후부터 음식물 자극에 대하여 하등 동통을 호소하지 않았다.

Introduction

In order to investigate effects of treatment of aphthous stomatitis occurring in oral cavity of patients with those diseases by means of cryosurgery recently being applied in dentistry.

As we know, aphthous stomatitis occurs in solitary or multiple ulcer types on oral mucosa of the oral cavity, very painful by contact of irritants such as hot sources, pepper, garlic or onion as spices seasoning food.

Aphthous stomatitis is somewhat difficult disease to dentists responsible for taking care of patients with those diseases in their clinics because its etiologies haven't been identified yet. So

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patients with those diseases have to wait spontaneous healing or to receive treatment in terms of conservative treatment composed of topical application of disinfectants on the surface of lesion and dressing or taking some antibiotics and multivitamines, and so on.

Cryosurgery originally had been developed for treatment of cancers without losing blood and electrolytes, and risk of life rarely encountering during surgical treatment, not to mention remaining scar on face or oral cavity.

Cryosurgery has recently being used in many fields of medicine and dentistry for treating cancers or some benign tumors done by Choi³ (1986), Emming^{10,11,12} (1966), (1968), (1965), Gage^{14,15,16} (1966), (1968), (1977), Hartman et al²⁰ (1984), Marciani et al²² (1977), Martinez²³ (1979), Marcove^{24,25} (1973), (1977), McIntosh²⁷ (1983), Nam²⁸ (1985), Pospisil³⁰ (1981), Torre³⁵ (1976) and Weaver⁴¹ (1974)

The author has tried to evaluate wound healing of aphthous stomatitis in patients at the Department of Oral and Maxillofacial Surgery, Seoul National University Hospital in 1986. Here-with, an excellent wound healing of aphthous stomatitis the author had experienced has been reported.

Material and method

The material used were 10 patients with aphthous stomatitis visiting our department of oral and maxillofacial surgery, Seoul National University in 1986.

10 patients were divided into two group such as control and experimental group. Treatment of control group patients consisted of conservative treatment method with topical application of disinfectants on the wound, and treatment of experimental group patients consisted of cryosurgery for which 5 patients have been treated by using Krymed M 600 system (Cryomedics, U.S.A.) using the cryoprobe T-0823 and liquid Co₂ as cryogen.

After treating patients with those diseases by means of two methods mentioned above, degree of pain patients had complained and wound healing the author had observed have been respectively checked for 2 weeks.

Results

1. Pain complained: In control group, patients treated with conservative treatment consisted of topical application of disinfectant on the wound have complained severe pain for the first 1-2 days when the wound of aphthous stomatitis has been contacted the spicy food eaten, and a little pain complained 5-7 days after treatment, and no pain complained 10-14 days after treatment (Table 1).

In experimental group, patients treated with cryosurgery haven't complained any pain when they had eaten any spicy food from 1 day after treatment.

2. Wound healing: In control group, there is no change of the wound of aphthous stomatitis in size for the first 2 days after treatment, a little decrease of the wound observed 5-10 days after treatment, and complete healing of the wound has been observed 14 days after treatment.

In experimental group, the surface of wound of aphthous stomatitis has been covered by

white necrotic tissue produced as a result of cryosurgery for the first 1-3 days-after cryosurgery, and complete healing has been observed 5-7 days after cryosurgery by exfoliation of the white necrotic tissue and regeneration of oral mucosa. (Table 2).

Table 1. Pain sensation patients with aphthous stomatitis complained.

Days passed										
No., sex & age of patients.		1	2	3	4	5	6	7	10	14
Treating method										
Treated conservatively	1. F. 25	+++	+++	++	++	+	+	±	±	-
	2. F. 28	+++	+++	++	++	++	+	±	±	-
	3. M. 45	+++	+++	++	++	++	+	+	±	-
	4. F. 34	+++	+++	++	+	+	+	+	±	-
	5. M. 46	+++	+++	++	++	+	+	+	-	-
Treated cryosurgically	6. F. 37	-	-	-	-	-	-	-	-	-
	7. M. 40	-	-	-	-	-	-	-	-	-
	8. F. 37	-	-	-	-	-	-	-	-	-
	9. F. 34	-	-	-	-	-	-	-	-	-
	10. F. 38	-	-	-	-	-	-	-	-	-

Note: +++: severe, ++: moderate, +: a little, ±: a very little, -: no pain.

Table 2. Wound healing observed macroscopically in patients with aphthous stomatitis

Days passed							
No. sex & age of patients		1	3	5	7	10	14
Treating method							
Treated conservatively	1. F. 25	u	u	ud	ud	ud	h
	2. F. 28	u	u	ud	ud	ud	h
	3. M. 45	u	u	ud	ud	ud	h
	4. F. 34	u	u	ud	ud	ud	h
	5. M. 46	u	u	ud	ud	h	h
Treated cryosurgically	6. F. 37	wnt	wnt	h	h	h	h
	7. M. 40	wnt	wnt	h	h	h	h
	8. F. 37	wnt	wnt	wnt	h	h	h
	9. F. 34	wnt	wnt	h	h	h	h
	10. F. 38	wnt	wnt	h	h	h	h

Note: u: ulcer on the oral mucosa, ud: ulcer decreased, wnt: white necrotic tissue covered, and h: healed.

Discussion

Aphthous stomatitis is common disease characterized by the development of painful, recurring solitary or multiple ulcerations on the oral mucosa. There are considerable disagreement between aphthous stomatitis and herpetic simplex stomatitis because their etiologies are different each other. The etiology of herpes simplex stomatitis are supposed to be herpes simplex virus, but aphthous stomatitis has numerous possible etiologic factors such as bacterial infection, i.e. L-form of an L-hemolytic streptococcus and *Streptococcus sanguis*^{2,17}, immunological abnormalities^{6,21}, deficiencies of iron, vitamin B₁₂ or folic acid⁴⁰, and local trauma¹⁸, endocrine condition, esp. premenstrual period, the incidence of aphtha is greatest in connection with blood level of progesterone⁵, psychogenic factors and allergic factors as precipitating factors.

Aphthous ulceration forms as a single or multiple superficial erosion covered by a white or gray membrane, and this lesion has a well circumscribed margin surrounded by an erythematous line, and is severe pain so that it commonly interferes with eating for several days.

In clinical point of view, aphthous stomatitis occurs somewhat more frequent in women than in men, and the majority of patients report the onset of this disease between the age of 10 and 30 years old. Many patients have experienced recurrent aphthous stomatitis. According to Ship et al³² (1967), aphthous stomatitis has a familial tendency in development of its disease.

In connection with management of aphthous stomatitis, there are various modalities of treatment with antisymptomatic, local treatment by topical application of disinfectants, general administration of vitamin B complex and C as well as broad-spectrum antibiotics such as tetracyclines, and other antibiotics such as cephalosporin and lincomycin, and repeating cowpox vaccination. Ship³³ (1961) reported the effects of topical application of corticosteroid on aphthous stomatitis, and Antoon et al¹ (1980) also reported treatment modalities for recurrent aphthous stomatitis such as using levamisole and vaccine as an immune enhancement, administration of prednisolone, triamcinalone acetone, betamethasone-17-benzoate, antihistaminics as immunosuppression or inflammatory suppression, tetracycline suspension, topical, chloramphenicol and broad-spectrum antibiotics as antibiotics, silver nitrate, coagulating agent, negatol, gentian violet as antiseptic, vitamin B-12, folic acid, iron and zinc sulfate as diet supplementation, and lidocaine, silver nitrate, benadyl, topical and camphor-phenol as symptomatic treatment.

The author has undertaken studies on wound healing of lesion of aphthous stomatitis with comparison between conservative treatment and cryosurgery. It is very significant that there is no one complaining pain in group of patients treated with cryosurgery from 1 day after treatment, whereas complaining pain in group of patients treated with conservative treatment until 5-7 days after treatment, and wound healing of the patients treated with cryosurgery was observed 5-7 days after treatment, but it was observed 10-14 days after conservative treatment.

The white necrotic tissue produced by cryosurgery keep the ulceration wound not to contact irritants directly so that patients can not feel any pain and allow wound healing promptly under protection of white necrotic tissue produced by cryosurgery I think. So I recommend cryosurgery

to control aphthous stomatitis to practitioner involved in practice.

Conclusion

The author has studied wound healing and pain in 10 patients with aphthous stomatitis treated with conservative treatment and cryosurgery at the Department of Oral and Maxillofacial Surgery, Seoul National University in 1986. conclusion obtained are as follows:

1. Complete wound healing the in patients treated conservatively has been observed 14 days after treatment.
2. Complete wound healing in the patients treated cryosurgically has been observed 5-7 days after treatment.
3. Pain the patients had treated coservatively continues 10 days, 4 days right before complete healing.
4. No pain in the patients had treated cryosurgically has been complained 1 day after treatment.

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