Study on Relieving Symptoms of Oral Pain in the Elderly with Oral Care

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Abstract. Objective: The objective is to investigate the relationship between oral care and dietary nutrition in elderly patients with oral ulcerative pain. Methods: From January 2021 to January 2022, 116 elderly patients with oral ulcer were selected. The two groups of patients were divided into experimental group and control group by random numbering method. The control group received the usual treatment. The control group was given dietary intervention support. The SF-36 questionnaire was used to evaluate the quality of life of the two groups of patients by comparing their satisfaction after nursing intervention, the healing time of oral ulcer, the time when pain disappeared and the normal feeding time. Results: The pain grade of both groups was evaluated by digital pain score. The health knowledge of patients with oral ulcer was compared between the two groups, and the good rate of oral ulcer was compared between the two groups. Results: Compared with the control group, the oral ulcer of the control group healed, the pain disappeared, and the time of normal eating was significantly shortened ($P<0.05$). After treatment, the scores of general health, mental health, social function, energy and knowledge of the experimental group were higher than those of the control group, but the scores of NRS were lower than those of the control group ($P<0.05$). The oral healing rate of the experimental group was higher than that of the reference group ($P < 0.05$). Conclusion: The combination of oral care and dietary intervention in elderly patients with oral ulcer has a significant effect. This can relieve the pain of the patient and speed up the healing of the wound.

Keywords: Elderly Oral Problems; Routine Nursing; Oral Care; Dietary Intervention; Oral Ulcer.

1. Introduction

With the development of society and the improvement of medical conditions, the society gradually realizes the health, people need not only physical health but also psychological health. Longer lifespans are also a sign of social progress. The aging trend of our society is a challenge to the medical care of the aged. Improving the quality of life of the elderly is an important subject to promote the health of the elderly. To fully understand the physical and mental conditions of the elderly, and to do a good job in psychological and medical care according to the personality and commonness of the elderly are the most important issues to be solved under the aging population. The mouth is an important part of the human body [1]. We all know how disease spreads from mouth to mouth. But in the process of protection will be neglected by everyone. So not paying attention to oral care can cause a lot of diseases. It is especially important for the elderly, whose health is gradually declining.

Oral care is an important part of basic nursing operation. Not only can make the patient can keep the mouth clean and comfortable, but also can prevent and treat oral ulcer, periodontitis, red and swollen teeth caused by bad breath and appetite loss. Figure 1 shows the basic oral structure [2]. There are many bacteria in the mouth. Once the resistance of the whole body is reduced, a large number of bacteria will not only cause the digestive ability to reduce and cause general discomfort. It can also cause complications. Timely supervision and correct brushing guidance, maintain a good mental state, and develop good living habits can help the elderly reduce the occurrence of dental caries and complications caused by oral hygiene.

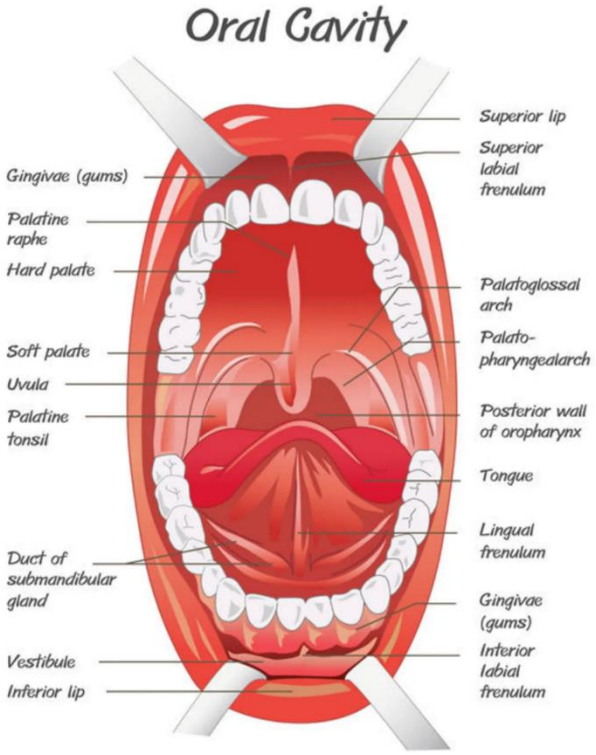

Fig 1. Oral structure

Oral ulcers mainly refer to superficial ulcers that occur on the oral mucosa. The ulcers mainly appear as soybean grain size, round or oval. The situation of oral ulcers is shown in Figure 2. In recent years, the prevalence rate of oral ulcer is increasing year by year due to multiple factors. The prevalence of recurrent oral ulcer is as high as 20%. The main clinical manifestations were pain, redness and swelling of ulcer center and surrounding mucosa [3]. Seriously affect their physical and mental health. Drugs are currently the main way to treat oral ulcers to improve clinical symptoms and promote ulcer healing. However, due to the obstruction of the patient's eating, it can cause poor nutrition intake and aggravate the disease. Therefore, it is very important to strengthen oral care and dietary intervention for patients with oral ulcer. This can effectively keep the mouth clean and is conducive to the recovery of oral diseases and protect the body's required nutrients. Lay the foundation for their future quality of life improvement. However, there are few studies on the effect of oral ulcer combined with dietary intervention on oral ulcer. The study analyzes this.

Fig 2. Oral ulcers

2. Data and methods

2.1. General Information

116 patients with oral ulcer were divided into two groups using random number table method. Data from January 2021 to January 2022. There were 27 male and 31 female patients in the experimental group. The age ranges from 55 to 79(68.2±3.47) years. The severity of ulcer was 14, 32

and 10 cases with degree II, III and IV, respectively. Education level: high school and below, secondary school, college and above 40, 10, 8 cases respectively. In the reference group, 29 cases were male and 29 cases were female. Their ages ranged from 61 to 81(70.24±2.23) years. The severity of ulcer was 18, 27 and 13 cases with degree II, III and IV, respectively. Education level: high school and below, secondary school, junior college, 20, 14, 24 cases respectively. There was no difference in basic data between the two groups ($P > 0.05$).

(1) Inclusion criteria: All patients met the diagnostic criteria for related diseases in Oral Ulcer. Degree of ulcer II ~ IV. Complete clinical data. All participated in the study voluntarily and signed informed consent. Age > 55 years. No systemic infectious diseases.

(2) Exclusion criteria: there are barriers in communication with patients. With liver, kidney and other organ failure. Poor treatment compliance refused to participate or withdrew from the study.

2.2. Methods

The control group received routine care. Administer medication as prescribed by the doctor. At the same time, the patient's diet, life and other conditions were given corresponding guidance. Ask the patient to gargle with isotonic saline. Maintain for 3 to 5 minutes. Then apply 2% hydrogen peroxide to the ulcer. The ulcer surface was covered with tin powder [4]. If infection occurs, the frequency of gargling should be continuously increased. At the same time, antibiotics are given according to the actual situation. Inform patients not to eat spicy, greasy and other irritating food.

Experimental group Oral care combined with dietary intervention: (1) Oral care: Relevant scales should be used immediately after admission to assess the severity of patients' conditions. Choose and make mouthwash according to the actual situation of patients. Oral pH test paper was used for detection. Patients with pH < 6.6 were gargled with mouthwash. Patients with pH > 7.1 were treated with 2% ~ 3% boric acid gargle. Patients with pH6.6 to 7.1 were treated with 0.9% sodium chloride injection. Crush a multivitamin B10 tablet and add it to a mouthwash. According to the actual condition of the drug treatment. In patients with degree II ulcer, 3% hydrogen peroxide was applied to the lesion site. Then, 5% metronidazole and lidocaine were used for 5 minutes. Patients with ulcer grade III and IV were gargarized with lidocaine for 10 minutes. Apply a cream made of lidocaine + ranitidine before bed. (2) Dietary intervention: according to the patient's cognitive situation to give the corresponding health education. To introduce the importance of dietary intervention to promote the recovery of the disease. Understand the general situation of the patient and develop personalized guidance. At the same time, based on the evaluation results, the paper worked with nutritionists to develop effective and targeted recipes to ensure balanced nutritional intake [5]. Select targeted and personalized food types according to the actual situation of patients. Determine how to eat, how much, etc. The psychological and emotional changes of patients were evaluated. According to the psychological characteristics of patients, the paper should provide comfort and psychological guidance and patiently answer their questions to alleviate their negative emotions.

2.3. Observation Indicators

(1) Satisfaction: Satisfaction was assessed by the self-made questionnaire of the hospital. The maximum score is 100 points. Dissatisfied, satisfied, and very satisfied score 0-60, 61-80, and 81-100, respectively. Satisfaction = Very satisfied + Satisfied rate. (2) The healing time of oral ulcer, pain disappearance time and normal eating time of the two groups were compared. (3) Quality of life: The quality of life of the two groups was scored using the SF-36. General health status, mental health, social function and energy were rated. The scores range from 0 to 100 points. The higher the score, the better the quality of life. (4) Pain degree: The digital pain Rating Scale (NRS) was used to evaluate the pain degree of the two groups before and after intervention. Scale 0 score: no pain. Scores 1 to 3: mild pain. Score 4-6: moderate pain. Score 7-9: severe pain. 10 points: Severe pain. (5) Health knowledge mastery: The self-made "Oral ulcer Patients Diet Knowledge Questionnaire" was used to evaluate their mastery of relevant knowledge. There are 20 items in 5 dimensions, including examination operation, choice of mouthwash, basic knowledge of disease, mouthwash operation and

reasonable diet. A total of 100 points. The higher the score, the higher the mastery of knowledge. (6) Oral healing: The oral healing effect of patients was compared. Excellent: Symptoms disappear, ulcers heal, congestion subsides and can eat normally. Liang: Symptoms were significantly relieved. The ulcer degree decreased to I ~ II degree. Poor: white spot, erosion and other symptoms did not improve within 10 days. The degree of ulcer is II degree and above. Healing excellent rate =(excellent + good)/ total cases *100.00%.

2.4. Statistical Processing

SPSS20.0 system was used to calculate the data. $\bar{x} \pm s$ represents measurement data. Select the T-test. % represents count data. Select χ^2 test. There were differences between the two groups with $P < 0.05$ expression.

3. Results

3.1. Comparison of satisfaction between the two groups

The satisfaction of the experimental group was 96.55%. Reference group was 60.34% ($P < 0.05$)(Table 1).

Table 1. compares the satisfaction of the two groups

group	*n*	Very satisfied	Satisfaction	Dissatisfy	Satisfaction
Experimental group	58	48	8	2	96.55%
Reference group	58	31	4	23	60.34%
$\chi 2$					11.20
P					<0.05

3.2. Comparison of healing time of oral ulcer, disappearance of pain and normal eating time between the two groups

Oral ulcer healing, pain disappearance and normal feeding time of the experimental group were shorter than those of the control group. The difference was significant ($P < 0.05$) (Table 2).

Table 2. The healing time of oral ulcer, pain disappearance and normal eating time were compared between the two groups

group	*n*	Oral ulcer healing time	Pain removal time	Can be normal eating time
Experimental group	58	4.18±1.08	2.67±0.53	2.93±0.29
Reference group	58	8.14±1.33	4.8±1.48	4.51±0.91
t		16.80	9.91	12.13
P		<0.05	<0.05	<0.05

3.3. Quality of life scores

Before intervention, the experimental group were 47.77±10.68, 48.88±10.44, 42.97±12.72 and 50.96±10.55. The reference group were 46.78±10.8, 49.07±10.61, 43.92±12.65 and 49.95±10.58 ($P > 0.05$). After intervention, the experimental group were 74.22±12.1, 72.52±10.5, 70.75±10.53 and 74.22±10.56. Reference group were 68.68±10.63, 57.15±10.59, 64.03±11.72 and 67.45±10.82 ($P < 0.05$).

Table 3. compares the quality of life scores of the two groups

group		Experimental group	Reference group	*t*	*P*
n		58	58		
General health	pre-intervention	47.77±10.68	46.78±10.8	0.48	0.68
	post-intervention	74.22±12.1	68.68±10.63	2.5	0.02
Mental health	pre-intervention	48.88±10.44	49.07±10.61	0.1	0.96
	post-intervention	72.52±10.5	57.15±10.59	7.52	0
Social function	pre-intervention	42.97±12.72	43.92±12.65	0.39	0.74
	post-intervention	70.75±10.53	64.03±11.72	3.11	0
vigor	pre-intervention	50.96±10.55	49.95±10.58	0.49	0.66
	post-intervention	74.22±10.56	67.45±10.82	3.26	0

3.4. Comparison of NRS and knowledge mastery score between the two groups

Before intervention, the NRS of the experimental group was 8.01±0.22, and the reference group was 8.09±0.3 ($P > 0.05$). After intervention, the NRS of the experimental group was 3.1±0.56, and the reference group was 4.81±1.33 ($P< 0.05$). Before intervention, the knowledge mastery of the experimental group was 89.54±10.07, and the reference group was 89.7±9.55 ($P > 0.05$). After intervention, the knowledge mastery of the experimental group was 99.85±2.27, and the reference group was 94.31±6.38 ($P< 0.05$). (Table 4).

Table 4. NRS and knowledge mastery scores

group	*n*	NRS		Knowledge mastery	
		pre-intervention	post-intervention	pre-intervention	post-intervention
Experimental group	58	8.01±0.22	3.1±0.56	89.54±10.07	99.85±2.27
Reference group	58	8.09±0.3	4.81±1.33	89.7±9.55	94.31±6.38
t		1.63	8.61	0.08	5.97
P		0.13	0.00	0.98	0.00

3.5. Comparison of oral healing between the two groups

The oral healing rate of the experimental group was 93.88%. The healing rate of the reference group was 69.39% ($P < 0.05$)(Table 5).

Table 5. Comparison of oral healing between the two groups

group	*n*	Optimal	Good	Poor	Oral healing excellent rate
	58	34	17	5	91.38%
Experimental group	58	24	11	23	60.34%
χ^2					10.21
P					<0.05

4. Discussion

Like other organs of the human body, oral diseases of the elderly will also be accompanied by the growth of age and corresponding changes, mainly due to the increase of oral tissue susceptibility to diseases, and the reduction of repair ability, resulting in corresponding diseases [6]. With the increase of age, the periodontal tissue has a physiological or pathological degeneration, making the patient's saliva secretion reduced, the flow rate is slow, which affects the patient's teeth flushing and self-

cleaning. In addition, with the increase of age, the patient's dental tissue appears physiologic or pathological degradation, making the patient's dental space gradually expand, resulting in a large number of food waste and food waste residues, which also creates a good environment for the healthy growth of patients in the patient, resulting in the emergence of caries and secondary diseases. This is one of the important factors that cause the elderly dental disease [7]. In addition, the elderly are often accompanied by high blood pressure, diabetes and other diseases, which will lead to blood circulation disorders, blood stasis, resulting in the lack of sufficient nutrients in the periodontal tissue, resulting in the accumulation of metabolites in the body, resulting in an increase in the incidence of periodontal disease. As the elderly's ability to penetrate the enamel is reduced, water and organic components are reduced, resulting in increased brittleness, which leads to the destruction of the enamel, coupled with the mechanical friction generated during the long-term chewing process, resulting in dental surface wear, resulting in the occurrence of tooth wear. In addition, due to the exposure of dentine to sunlight, the elderly are more prone to dental allergies to hot and cold acid and mechanical stimulation. Therefore, the change of the patient's body will cause the appearance and increase of certain oral diseases with the characteristics of the elderly.

In the clinical more common situation is the appearance of oral ulcers. Patients can also experience eating disorders and loss of appetite. This is very harmful to their physical, psychological and quality of life. The treatment of oral ulcer is generally based on drugs. At the same time, strengthening the nursing work of patients can promote the rehabilitation of patients, improve the prognosis of patients, and improve the quality of life of patients. Oral care is a key part of clinical care. According to the different conditions of patients, different nursing measures can be taken to alleviate the pain of patients. This has a significant effect on the clinical manifestations of patients. Patients can be informed of the condition and treatment methods during dietary intervention. It can obviously improve students' proficiency in relevant knowledge. Make the patient aware of his or her condition. Develop good living habits to improve patients' treatment and nursing compliance [8]. The patient receives a comprehensive examination to understand the basic condition and nutritional status so as to provide an effective and reasonable diet plan for the patient. Improve the effectiveness of dietary interventions to improve the body's immunity. Preventing injury of oral mucosa is beneficial to patients' recovery. To some extent, psychological preparation can put the patient in a good state of mind and improve the degree of cooperation of the patient.

Patients in the experimental group were more satisfied with the test results than those in the control group. The mouth ulcer heals, the pain disappears, and you can eat normally. It shows that the paper should pay attention to strengthen the nutritional intervention in the implementation of oral health care. It can obviously accelerate the recovery speed of patients with aphthous ulcer. Minimize the patient's pain and improve patient satisfaction. This is valuable for treating patients with aphthous sores. The quality of life is a comprehensive evaluation of the quality of life. In the medical field, it includes three levels of the body's physiological, psychological and social functions. It is a key factor to evaluate the patient's medical treatment effect. The general health level, mental health level, social function level and vitality level of the experimental group were higher than those of the control group after treatment. Nutrition intervention should be combined with diet while oral care of patients. This is good for the patient's prognosis. Dietary nutrition can play a certain role in alleviating pain and ensuring patient comfort. In the course of treatment, oral care and dietary intervention can improve patients' understanding of the disease. This improved their self-care skills. In the oral care of patients, attention should be paid to the dietary intervention of patients. It can better promote the healing of the wound and speed up its recovery. Through the above study, the effectiveness and feasibility of oral care and dietary intervention in patients with oral diseases were verified. Oral care can help patients maintain better oral hygiene. It has anti-inflammatory, antibacterial and other effects. Can provide patients with scientific and reasonable dietary guidelines, can improve the body's resistance. In this way, the efficiency of treatment can be better guaranteed. Accelerate the healing of aphthous sores and relieve the pain of patients.

5. Conclusion

Compared with traditional treatment methods, nutritional support combined with food during treatment can better treat patients with oral ulcers. Shorten the patient's pain relief time. It's preparation for a better life later. However, due to the short time, the research time is short, no reliable evaluation method is used, and there are still some defects. Therefore, in the future research, the paper can continue to expand the sample size and extend the research time. In order to further explore the effect of oral care combined with dietary intervention in the treatment of oral ulcer.

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