Oral Care
for the Dependent Elderly

【Fourth Edition】

Department for Advanced Dental Research,

Center for Development of Advanced Medicine for Dental and Oral Diseases,

National Center for Geriatrics and Gerontology

Introduction

The aging of Japanese society is unprecedented in the world. To remain healthy and enjoy a good quality of life (QOL), maintaining oral hygiene and healthy eating habits are crucial, and to ensure such dietary it is important to retain oral function.

In recent years it has come to be known that a deep relationship exists between the oral cavity and general body systems, and this has stimulated interest in oral care for the elderly. It has also come to be understood that aspiration pneumonia and endocarditis are related to foreign material and microorganisms in the mouth, and that oral function is related to nutritional status and cognitive function. Aspiration pneumonia in particular is a leading cause of death among the elderly in Japan, and there is growing scientific evidence that it can be prevented by thorough oral care. Such oral care for the elderly not only prevents oral disease such as caries and periodontal disease, it also helps to prevent aspiration pneumonia, a potentially fatal disease in the elderly, and conditions such as dehydration and malnutrition.[1] Oral care is thus very important from the perspective of QOL. It is our hope that appropriate oral care will contribute to the prevention of disease in the dependent elderly and the maintenance of oral and general health.

The National Center for Geriatrics and Gerontology established Japan's first oral care outpatient clinic in 1999. Since then we have instructed many people in oral care methods, earning an outstanding reputation. In this clinic we teach "standard" oral care that can be done by anyone, anytime and anywhere. For those who have difficulty maintaining hygiene in the oral cavity because of disabilities or disease during hospitalization, we provide "specialty" oral care by a dentist or dental hygienist. This special oral care maintains a hygienic oral cavity, and we provide oral care instruction that will reduce the burden on caregivers so that a clean oral cavity can be maintained even after the patient leaves the hospital.

Through these efforts we aim to maintain and improve the QOL of both dependent elderly and caregivers.

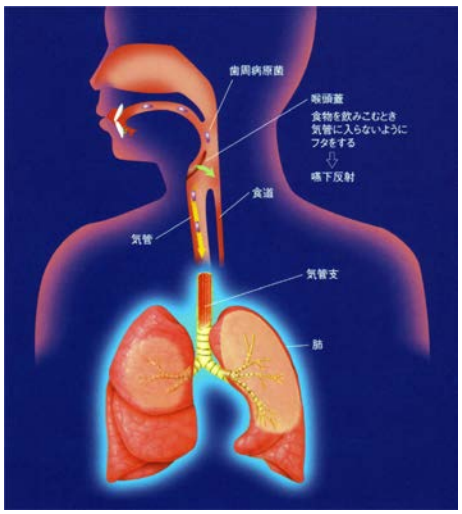
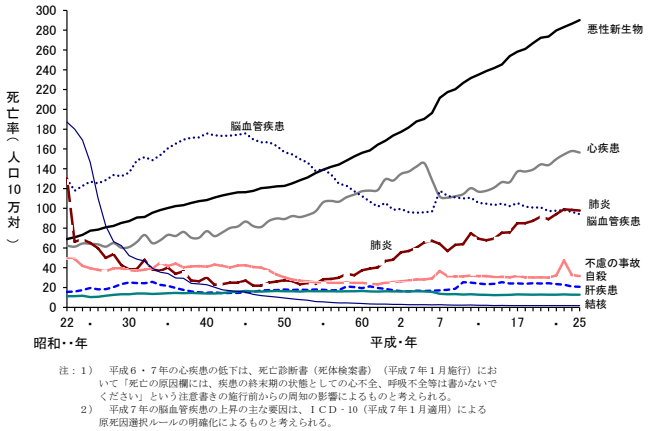


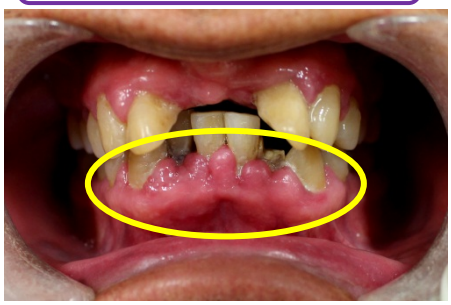
Illustration of aspiration pneumonia
(From Ryo Yamada et al.)



2013 mortality statistics in Japan

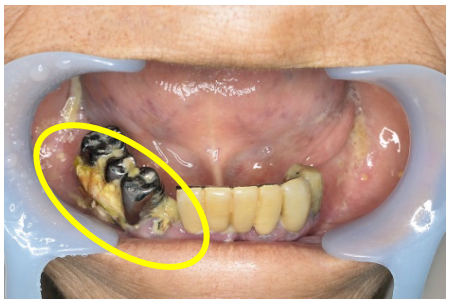
A quick overview of the oral conditions in the dependent elderly

Swollen gingiva



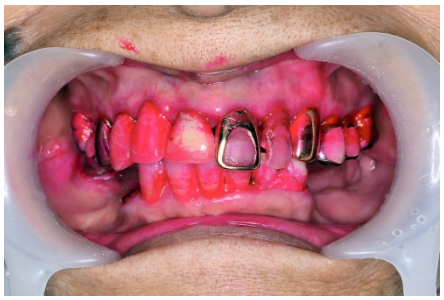
Gingiva is swollen as a result of plaque on the teeth.

Bits of food remaining



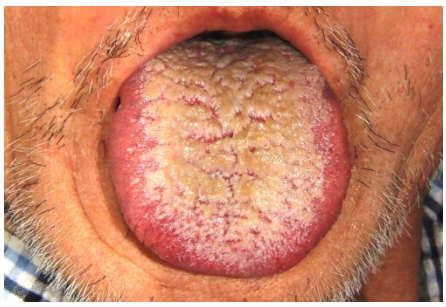
In elderly people with paralysis, remaining food accumulates on the paralyzed side of the mouth.

Plaque on teeth



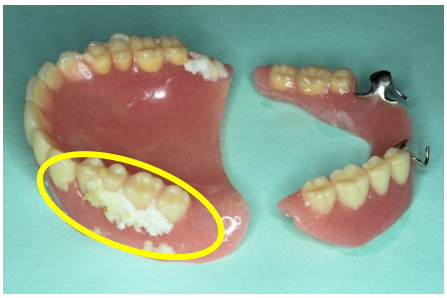
Plaque is died red with a staining solution. The teeth are unclean overall.

Unclean tongue



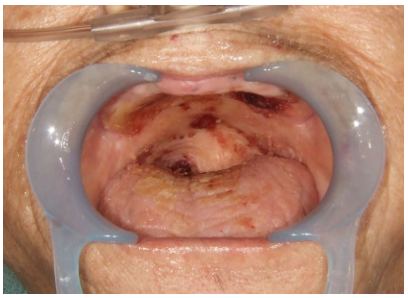
White coating on tongue. Coated tongue is a microbial breeding ground and a cause of bad breath.

Unclean denture



Clumps of foreign material adhere to dentures that are not cleaned properly, and microbes proliferate.

Dryness



The mouth becomes very dry when it is constantly left open.

Specific measures to deal with the above

Here we introduce two types of oral care. As shown below, people are separated by whether or not they are able to gargle, swallowing function, risk of aspiration etc.

Swallowing function

Can gargle.
Risk of aspiration is low

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Cannot gargle.
There is a risk of aspiration

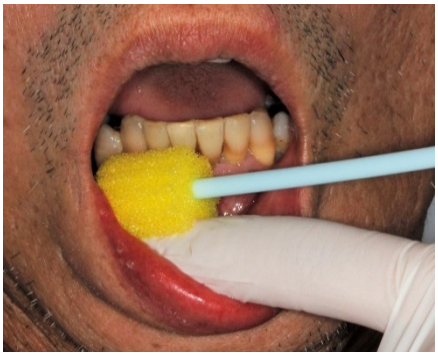
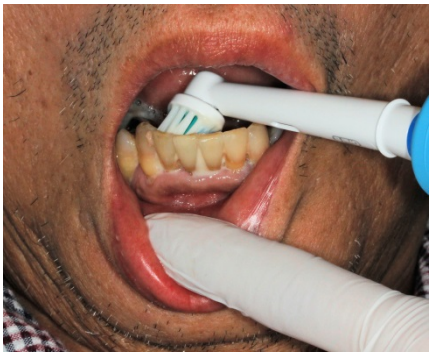
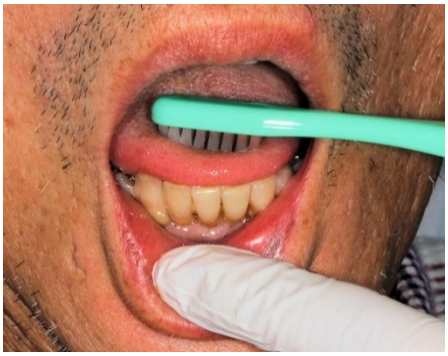
1. Standard oral care (oral care system)

2. Special oral care (waterless oral care)

1. Oral care system Oral care in 5 minutes

This oral care system was devised so that the mouths of dependent elderly could be cleaned by anyone in 5 minutes per day.[2]

Oral care system procedure

1. Wipe the entire oral cavity with a foam stick (about 1 minute)

After dipping the foam stick in mouthwash thinned with water and wringing well, gently wipe the teeth and oral mucosa to dislodge large bits of remaining food and plaque. Be careful not to use too much force, as the oral mucosa of elderly people is easily damaged.

2. Clean the teeth with an electric toothbrush with mouthwash (about 2 minutes 30 seconds)

3. Clean the tongue (about 30 seconds)

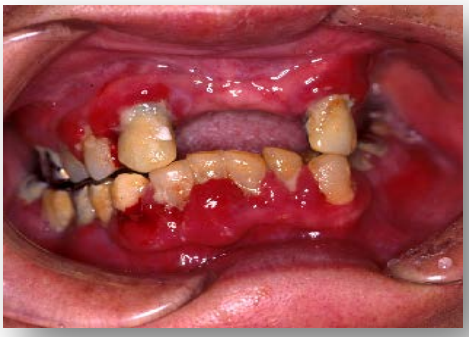
Tongue cleanliness must not be overlooked in oral care. To avoid hurting the tongue, do not use a commercially available tongue brush. Rather, using the softest toothbrush available (Nagayama Home Careus, etc.), scrape off the white coat by lightly scraping the tongue from back to front about ten times.

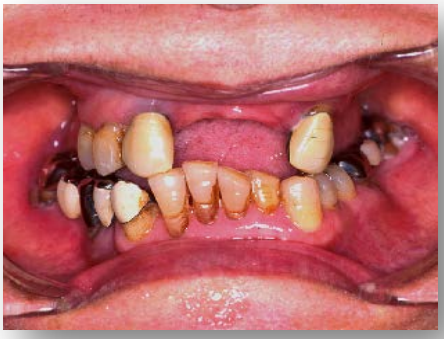
4. Have individual gargle several times with mouthwash (about 1 minute)

Catch the expelled mouthwash in a U-shaped receptacle. Take precautions, such as adjusting posture, so that the individual does not aspirate the mouthwash.

- If a person has dentures, clean them with a toothbrush. Foreign materials tend to adhere to dentures, which can be a breeding ground for microbes. They need to be cleaned carefully.

Example of clinical application of this oral care system


At initial examination


After six months

Remaining food and plaque are removed, redness and swelling of gingiva is eliminated, and the mouth has become significantly cleaner.

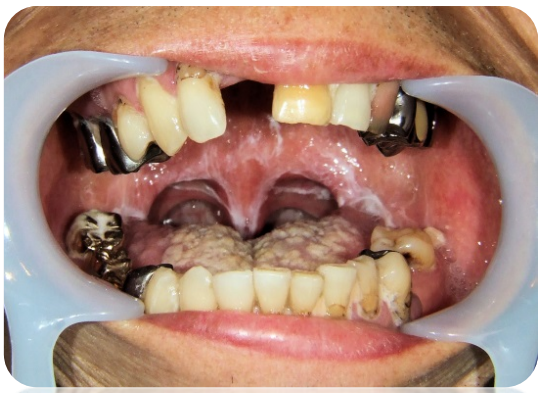
2. Waterless special oral care

Special oral care by dentist or dental hygienist

In some people swallowing function has decreased because of disease or disability so that food and drink cannot be swallowed well, or the individual chokes on them. Water or food that should have flowed into the esophagus may be aspirated into the airway or lungs, causing aspiration pneumonia when inflammation occurs.

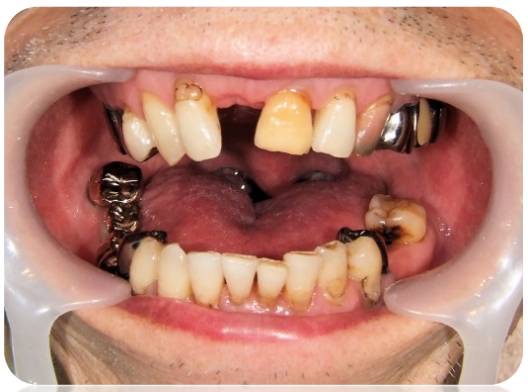
Microbes that can cause aspiration pneumonia exist in the mouth, and dependent elderly with decreased swallowing and cough reflexes are susceptible to entry into the airway or lungs of the dirty water from cleaning during oral care. At the National Center for Geriatrics and Gerontology we have further developed oral care using a moist gel as proposed by Dr. Takeo Suga of Tsurumi University. When providing special oral care, instead of a washing solution we use an oral care gel that does not easily drip into the throat.

Examples of waterless special oral care



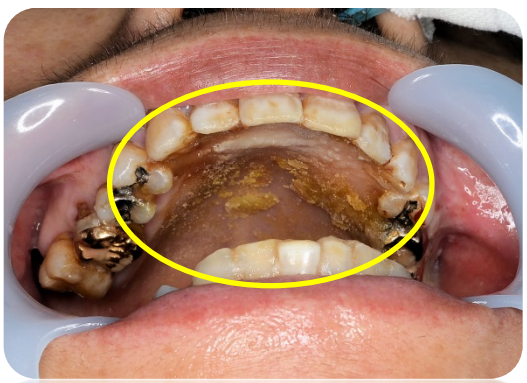
At initial examination

A patient hospitalized for aspiration pneumonia. Decreased swallowing function and uncleanliness even of the tongue and throat.



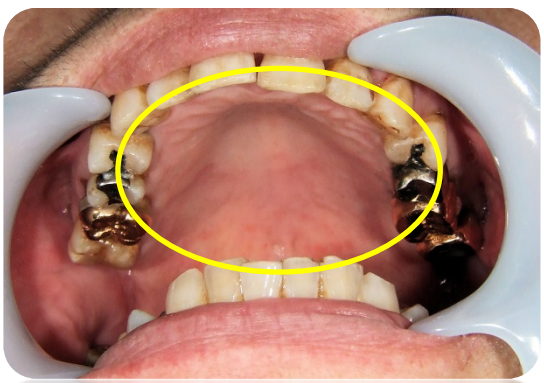
On leaving hospital

Oral cavity became clean and the patient left the hospital with no new occurrences of aspiration pneumonia during his stay.



At initial examination

Mouth dryness was severe and dry sputum and peeling epithelium caked the roof of the mouth.

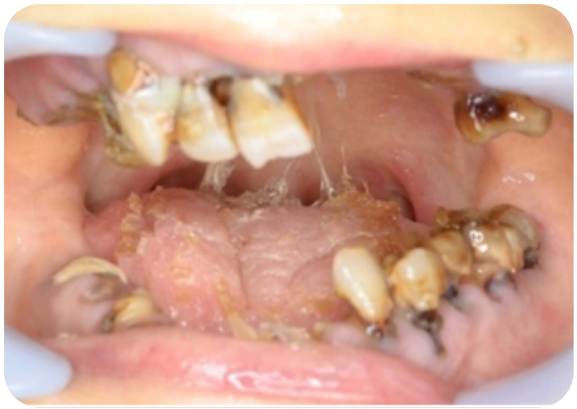


On leaving hospital

The risk of aspiration was decreased and the oral cavity could be cleaner and more hygienic without damage to the mucosa.

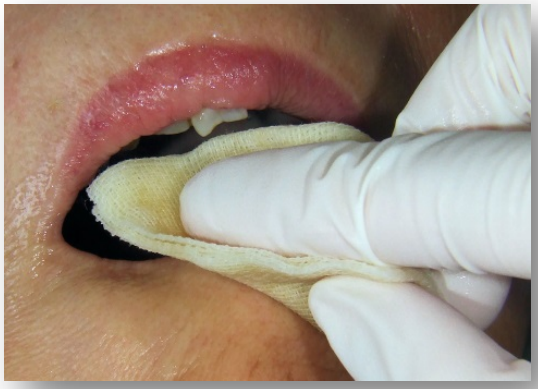
Special Oral Care
Method used for waterless special oral care

Oral cavity before special oral care

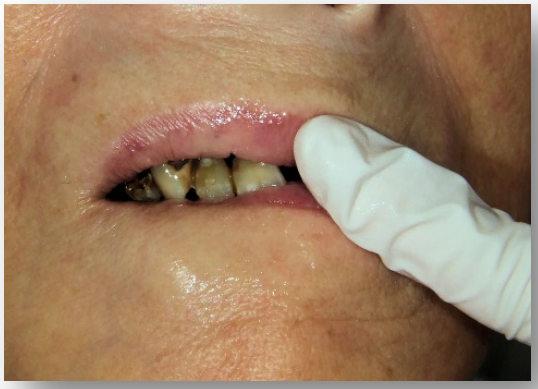


This patient's mouth was very dry, and large amounts of sputum and desquamated epithelium adhered to the teeth and mucosa. The oral cavity was extremely unclean.

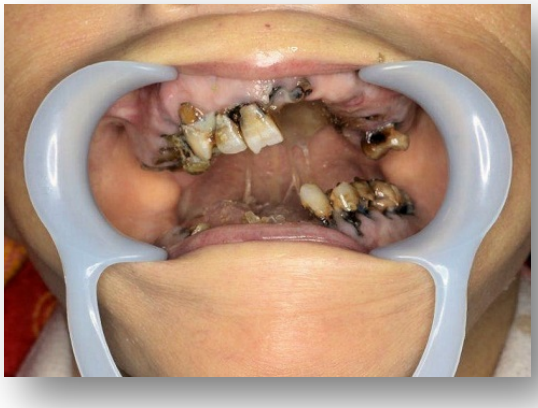
The structure of the oral cavity is very complex, and the operator always wears a headlight since ambient light does not easily reach inside the oral cavity because of the teeth and lips.



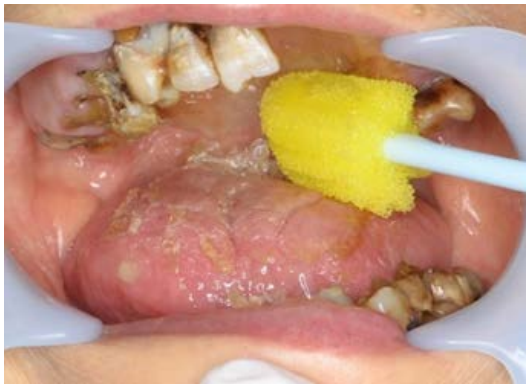
1. Gauze is dipped in 1 % povidone-iodine and firmly wrung and used to wipe around the lips. This is to prevent microbes from outside the mouth being transferred into the mouth.
• Be aware of allergies.



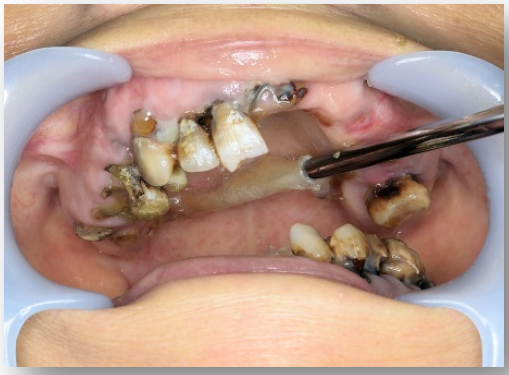
2. Oral care gel is applied to the lips to prevent dryness.
If the oral cavity is dry there is concern about bleeding when the mouth is opened.



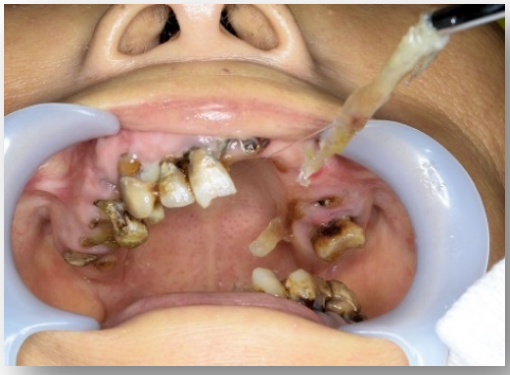
3. A cheek retractor is used to expand the visual field for careful observation to understand the condition of the oral cavity.



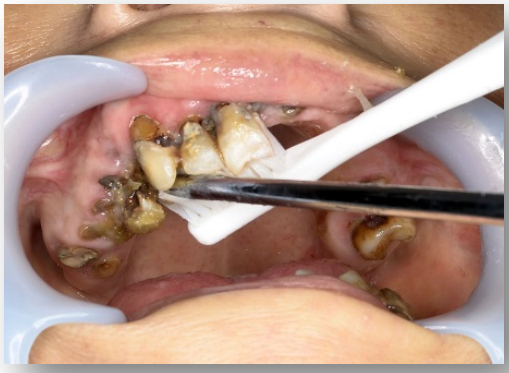
4. Oral care gel is applied to the entire oral cavity to soften the contaminants adhering to the mucosa due to dryness.



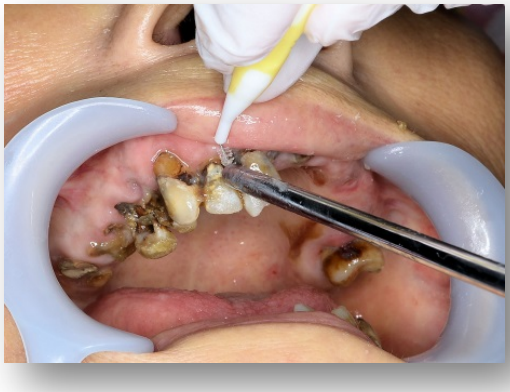
5. First, the contaminants that can be removed with suction are suctioned out of the mouth to reduce the number of microbes as much as possible before brushing or other procedures.



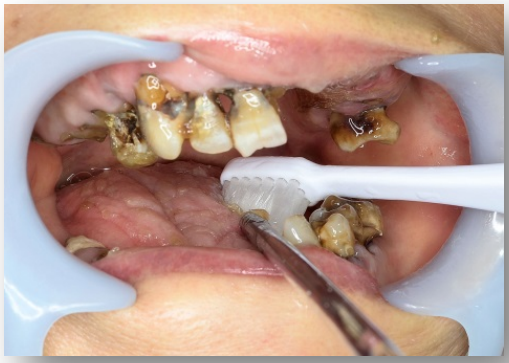
6. Using suction, the number of microbes can be quickly reduced without spreading contamination in the mouth.



7. The teeth are brushed while the oral care gel is left to soak in. The gel is removed in appropriate amounts with the toothbrush, while dislodged contaminants are constantly suctioned.



8. Oral care gel is also used with an interdental brush, suctioning out dislodged contaminants.

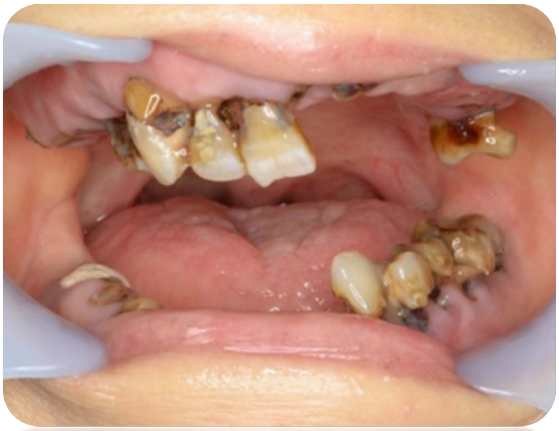


9. A soft bristle mucosa brush is used to clean the tongue, suctioning out dislodged contaminants.

10. The entire mouth is wiped with foam stick and oral care gel thinly applied to moisten the entire oral cavity.

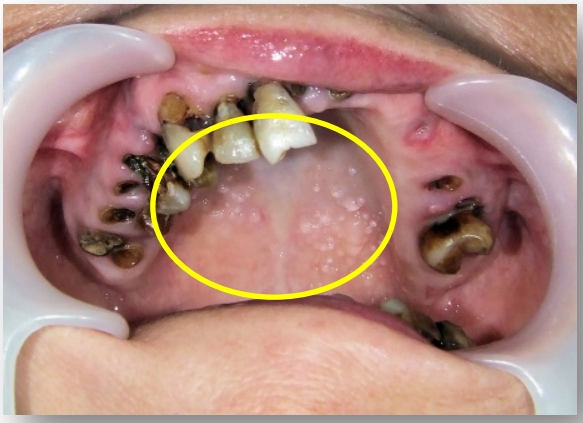
11. Finally, with gauze from which the water has been firmly wrung out, the area around the lips is wiped, remaining povidone-iodine is wiped off the skin, and the lips are moistened.

Oral cavity after special oral care in this patient



Aspiration was prevented and the mouth is almost unrecognizably cleaner with use of waterless special oral care

After several weeks



Saliva secretion also increased with improvement of the oral cavity.

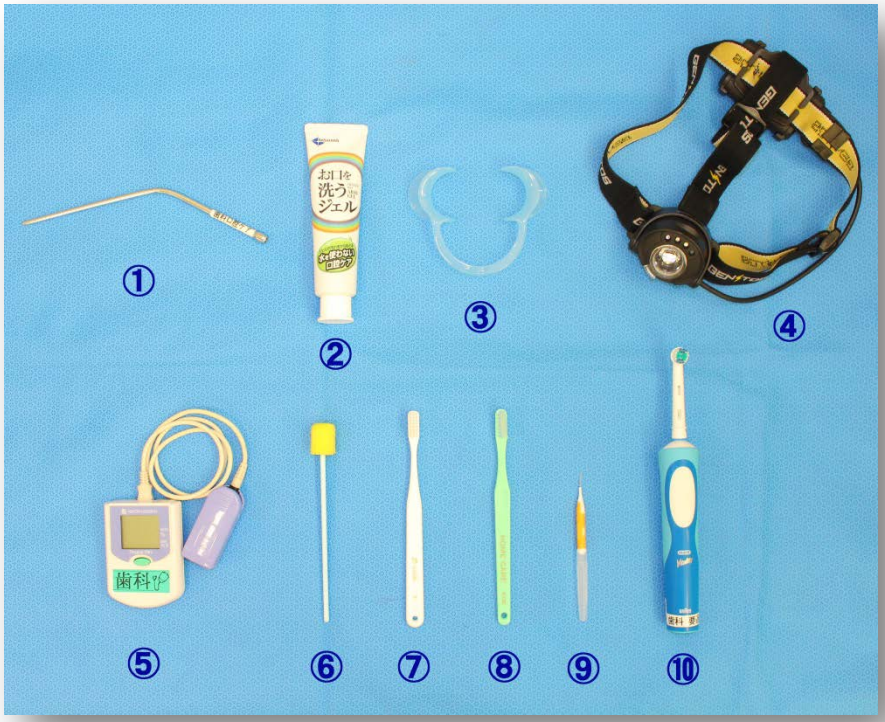
Waterless special oral care is used with people who have decreased swallowing function and a risk of aspiration pneumonia.

Special oral care reduces the risk of aspiration of microbes from the mouth during oral care, and effectively cleans the oral cavity.

This patient was able to leave the hospital with no further occurrence of aspiration pneumonia.

Instruments needed for waterless special oral care

Instruments suited to each task are used for safe, reliable, and efficient oral care. Assembling the appropriate oral care items in advance reduces the burden on both the operator and the person receiving the care, and enables efficient oral care to be provided in a short time.



1. Suction tube
2. Oral care gel
3. Cheek retractor
4. Headlight
5. Pulse oximeter
6. Foam stick
7. Toothbrush
8. Soft bristle brush (for mucosa)
9. Interdental brush
10. Electric toothbrush

In addition to instruments such as a toothbrush and foam stick, a suction unit, headlight, and cheek retractor are also used in special oral care.

Use of the headlight and cheek retractor gives a bright visual field. In addition, contaminants can be constantly eliminated from the mouth and the risk of aspiration reduced by suctioning with a suction tube when using the foam stick or toothbrush.

Conclusion

At the National Center for Geriatrics and Gerontology, we have established methods of oral care for elderly people with mild to severe dependence in order to provide effective oral care for dependent elderly and caregivers. We have also established a method of waterless oral care that greatly reduces the risk of aspiration for dependent elderly with decreased swallowing function. With both types of oral care we have attempted to improve the QOL and general condition of both dependent elderly and their caregivers.

By spreading these oral care practices we hope to improve or prevent local oral diseases such as periodontal disease or candidiasis, improve eating and swallowing function by maintaining or restoring oral function, and reduce aspiration pneumonia, endocarditis and other systemic diseases that can be fatal for the elderly, thereby improving their QOL by helping them to regain their health and the confidence to engage socially.

Daily care for the mouth is important in order to lead a healthy life. Regular checkups by a dentist once or twice a year are recommended to stay free of symptoms such as pain and swelling, so that people can chew with their own teeth throughout life.

We also accept observers for the special dental care in our department. People who are interested are invited to contact us.

Yasunori Sumi, Director,
Center for Development of Advanced Medicine for Dental and Oral Diseases,
National Center for Geriatrics and Gerontology

Oral care publications

Publications that are related to the oral care also please refer to us.

"Special Oral Care for Dentists and Dental Hygienists: Perspectives and Knowledge on the Body and Oral Cavity Needed in a Super-Aged Society"
Yasunori Sumi, Ishiyaku Publishers, 2012

New Edition: 5-Minute Oral Care. Oral Care System for Widespread Use by Caregivers"
Yasunori Sumi, author/editor, Ishiyaku Publishers, 2012

Professional Series: Medical Treatment, Nursing and Care That Is Easy on the Aged. 8. Become an Oral Care Pro
Yasunori Sumi, Igakutogangosha, 2013

References

1. Sumi Y, Ozawa N, Miura H, Michiwaki Y, Umemura O. Oral care help to maintain nutritional status in frail older people. Arch Gerontol Geriatr. 51:125-128, 2010
2. Sumi Y, Nakamura Y, Michiwaki Y: Development of systematic oral care program for frail elderly persons. Special Care Dentist. 22:151-155, 2002.

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