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Infection Prevention Measures in Oral Health Care in Japan

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Abstract

It is important to carry out oral care in compliance with standard procedures. The sterility of the instruments and equipment's are necessary that are being used. Particular attention should be paid for disinfecting methods. It is also necessary to follow preventive measures to avoid further infection for nearby sites. Patients who undertake oral surgeries are scheduled to undergo endotracheal intubation under general anesthesia, so a higher degree of cleanliness is attained in the oral cavity. However, in the dental field, oral care is often performed without a blood test for infectious diseases before surgery. But, oral care is often accompanied by bleeding in dental care, so it is recommended that oral care should be performed by a surgeon who is familiar with standard procedures. Furthermore, A method for sterilizing the oral care disinfecting instruments are desired similar to surgery in medical departments.

Keywords: Oral care; Standard precautions; Oral care supplies; Covid-19; Denture

Introduction

Today, the new coronavirus infection (COVID-19) has become a majorly discussed topic, there was concern about co-occurrence of respiratory disease infections such as influenza, but influenza in Japan is decreasing compared to the average year [1]. In Japan, most of the medical treatment is provided based on the public insurance system, and in addition, medical fees are set considerably lower compared to other countries. Therefore, cost reduction is an important issue, and it is necessary to select equipment and drugs considering the aspects of profitability [2]. However, as long as oral care should be carried out in the corona sickness. If sufficient infection control measures are not taken, anxiety and horizontal transmission may occur in patients and operators. I think we are in an era where infection control measures are being asked more than ever. During general anaesthesia, the unhealthy oral environment increases the risk of infections such as aspiration pneumonia which occurs after endotracheal intubation.

It is known that the importance of preoperative oral care has come to the force, resulted in suppression of postoperative fever; CRP suppression; the period of use of antibacterial agents and the length of hospital stay are shortened [3-5]. However, according to a notification from the Director of Medical Affairs Bureau of the Ministry of Health, Labor and Welfare dated July 26, 2005, "Toothbrushes, cotton swabs or rolled cotton can be used for daily oral cleaning in the absence of severe periodontal disease. Removal of stains on teeth, oral mucosa, and tongue cleaning in children is regulated by Article 17 of the Medical Practitioners Law, Article 17 of the Dental Practitioners Law, and Article 31 of the Public Health Teachers, Midwifery and Nurses Law [6]. It is not targeted, but non-professionals who are familiar with standard procedures may provide oral care. It is easy to imagine that most of the oral care provided at home, will be handled by non-professionals. Among all these, I would like to focus on infection control measures during handling instruments, their sterilization and disinfection methods, rather than the oral care methods that nurses and others that implement in hospital facilities.

Literature Review

Depending on the facilities provided, oral care can be classified into four categories.

(1) Oral care in long-term care facilities

(2) Oral care in home care

(3) Oral care in hospitals that do not have dentistry

(4) Oral care in a hospital with dentistry

Oral care in long-term care facilities and Oral care in home care

Generally, Dental care is provided by nurses, nursing assistants, families, etc. at hospitals, long-term care facilities, and homes in Japan. Although every hospital and long-term care facility has its own manual related to oral care procedures, but there is no nationwide manual, and also there are variations in the equipment used. Among all the above four mentioned cases, oral care is rarely performed by a dentist / dental hygienist except in case of home-visit dental care.

In addition, the oral conditions of patients who were receiving oral care such as hard tissue/soft tissue diseases, prosthetic restorations, dentures/implants, and wearing oral devices vary widely. Moreover, all the practitioners involved in oral hygiene, should take into consideration that the infection to patients, surgeons and other people, may affect them too, if standard procedures are followed.

Especially in hospitals without dentistry and hospitals with dentistry, many patients are suffering from infectious diseases and the risk of nosocomial infection is assumed, so in order to maintain oral health standard procedures must be developed [7,8].

Today, preoperative evaluation and preoperative oral care by dentists, etc. can be carried out in cooperation with nurses at medical institutions within the scope of medical insurance in Japan. The perioperative oral function management fee and the perioperative oral function management plan formulation fee reflect this background. But, this is not in the case, if you were hospitalized in emergency situation or have an emergency operation.

In case of hospital without dental facility, oral examination is carried out at nearby or affiliated dental medical institution or hospitals for treatment. It is desirable to ask for a specific oral care implementation method and plan.

In case of hospital with dental facility, it is simple to carry out oral examinations, determine treatment policies, and create management plans and sharing information with dentists, dental hygienists, and nurses in the hospital is easier.

Critical observation is necessary for patients with severe periodontal disease, carious teeth that reach the pulp, residual tooth roots, defective prostheses/dentures, and residual structures of damaged implants. Therefore, if there is time, the patient should be instructed regarding dental hygiene on how to carry out specific oral care by dentist.

Occurrence of infections

In 2014, multidrug-resistant *Pseudomonas aeruginosa* was detected in a washing tube used in the oral cavity by sharing a portable aspirator among patients in Osaka, and infection from the device was suspected. Bacteria were also detected on the touch panel of the ventilator and the ward fixed aspirator switch, so it was judged to be a nosocomial infection [9,10]. So from this we go to know that oral care such as toothbrushes, sponge brushes, mini brushes, floss, interdental brushes, tongue brushes, portable aspirators, cleaning tubes, toothbrushes with suction function, etc. are must be sterilized and some procedures must be established for sterilizing and disinfecting supplies. Further, a method for treating a dirty denture attached to the oral cavity will be described below.

"Infection control methods or Countermeasures for used equipment"

(1) Sponge brush, cotton swab:

It is one of the best methods for disposal of this product when considering cost, sterilization and disinfection methods.

(2) Toothbrush, mini brush, interdental brush, toothbrush with suction function, tongue brush, etc.

Well, there is no problem with these products if they are thrown away. The problem is that the price is high in comparison. There are also brushes that cost 5$ to 10$ or more per brush, and they are disposable.

However, bleeding from the mucous membrane and gingiva is not problematic point when used, and especially when using an interdental brush, bleeding is especially large. Therefore, these brushes are highly blood-contaminated and should be treated differently than the water-wash and dry-only grades. Both the high-pressure steam sterilizer and the plasma gas sterilizer cannot be used for brushes due to problems such as deformation and hair removal. In EO gas sterilizer, long-term aeration is required to remove the toxicity of the gas. So it is necessary to sterilize the frequently used instruments. Therefore, initially these are washed with water ultrasonically under running water, and then disinfected using a high-level disinfectant such as glutar, phthalal, and peracetic acid. Finally, wash with running water. If a dyeing solution is used during cleaning, the brushes will be dyed red, so decolorize them with sodium hypochlorite solution before disinfecting with the chemical solution.

(3) Vacuum, ejector, suction/drainage pipe, etc.

Metal vacuums and ejectors are sterilized with a high-pressure steam sterilizer. Since the suction tubes may be deformed, plasma gas sterility is performed. If they are disposable products, make them disposable. The main body of the portable inhaler including the switch should be swab-sterilized in advance, and the main body should be covered with vinyl. After use, remove the vinyl and re-swab disinfect and coat. For equipment such as vacuums and ejectors that are difficult to wash with water, use a suction type washer used in otolaryngology and dentistry to clean the inside, dry it, and then sterilize it.

Dentures

Since the material of the denture itself is water-absorbent, high-level disinfectants such as glutar, phthalal, and peracetic acid cannot be used. Therefore, disinfect with povidone iodine disinfectant that are being used. In some cases, chlorhexidine (CHG) is used, which has a high disinfecting effect. In some countries like Japan, the application of CHG to the mucous membrane is prohibited; it is unavoidable to use povidone iodine to disinfect dentures that come into direct contact with the oral mucosa [11]. It is convenient to use a denture brush for cleaning. After disinfection, wash thoroughly with water before mounting. These are the sterilization and disinfection methods for instruments used in normal oral care. By the way, for patients who have dentures but are spending time with them removed, it may be better to wear them all the time except during and after surgery by consulting dentist.

The longer the oral care treatment is performed, the more contaminated the surrounding area will be and the more will be the mode of transmission. So, treatment period shortening is also one of the important factors. Use an electric brush as a way to perform oral care in a short time [12].

Electric brushes are roughly divided into two types: sonic brushes and rotary brushes. The former has many phases and the latter is good for handling. Unfortunately, disposable products for electric brush are not currently available in Japan. Therefore, it is necessary to prepare a procedure for disposal of electric brush body. Similar to the portable suction machine mentioned above, the main body covered with swab and coated with vinyl. Naturally, the vinyl that covers the device should be replaced every time.

Dental curing light

A possible way to reduce time is to make the operative area sterilized with highly qualified facilities Example: In using dental curing headlight. The oral cavity is very deep, and lighting is necessary to clean accurately at molars to the bedside. If the operative field is clear, the oral condition of the patient can be seen, the shorter the cleaning period will be. There are a variety of cordless portable lights available in the market, so it is best to choose a device that is easy to use. The body of the light needs to be covered to prevent it from being flicked, around during oral care treatment. On the other hand, elderly people have less strength to open their mouths, and they

may get tired during oral care. So to cope up with this, the use of a bite block or mouth angle hook is recommended so that the surgery can be performed easily. The bite block should be tied with an octopus thread and hung outside the mouth to prevent accidental ingestion.

Measures to be taken during surgery

Wear a mask, goggles, cap, gown or plastic apron, and gloves in accordance with the standard precautions [13]. They should take preventive measures to avoid contamination of the surrounding area during oral care treatment. After disinfecting the hands, wear hygiene gloves and touch only the inside of the mouth, never the outside of the mouth. They should not touch the surrounding environment or touch unsterilized equipment during the procedure. If a gloved finger touches a non-wiped area, the glove is immediately contaminated and further procedure care cannot be performed with those gloves. In case of contact, a rubbing hand disinfection method over gloves is used [14-16]. This eliminates the time required to change gloves and reduces the time required for oral care treatment. This method can be used when there is no hand washing sink nearby. In addition, various gel preparations, such as toothpaste, should not be taken directly from the mouth of the tube with gloved fingers. You want to make sure to take out the gel or other material from the tube onto a clean area and scoop it out from there with your fingers or a brush.

Another important thing to consider is the preferable numbers of people who will be performing oral surgery are two. One person should only touch the patient's oral cavity but not any other area and the other person is responsible for preventing contamination of the rest of the oral cavity. If you are dedicated to operating equipment switches, suctioning, and securing intubation tubes, you can contribute greatly to preventing infection. Finally, disposable sets are very useful if you can perform oral care without worrying about the cost involved. Each pack includes a suction brush, suction sponge, sponge brush, mouthwash, and mouth paste. There is a set of three that are used every eight hours and a set of six that are used every four hours. Although expensive, if these devices are used effectively and oral care is provided, sufficient infection prevention measures can be taken.

Umetsu, et al. stated that it is necessary to wear personal protective equipment gloves, face shield, and apron during oral care because biological materials such as blood and saliva are dispersed. Frequent implementation of oral care in clinical practice makes us experience splashes of blood-containing saliva and makes us acutely aware of the need to have a way to deal with it [17]. A surgeon familiar with the standard precautions must perform oral care in an appropriate manner. In addition, the establishment of thorough sterilization and disinfection methods and aseptic handling of the equipment and instruments used are of utmost importance. In 2017, Yokota and colleagues called for the introduction of more dental education and especially education for oral care in nursing education [18]. The Ministry of Health, Labor and Welfare also holds seminars on the prevention of infectious diseases such as AIDS and hepatitis six times a year to raise awareness of the importance of correct knowledge among dental professionals [19].

Conclusion

For both medical and dental practices, it is important to implement specific measures to prevent nosocomial infections to provide oral care in the current coronary crisis. In addition, there is a need today, to control costs and implement more advanced standard precautions within the scope of Japan's unique insurance system.

Conflict of Interests

No

References

1. Sakamoto H, Ishikane M, Ueda P (2020) Seasonal influenza activity during the SARS-CoV-2 outbreak in Japan. JAMA 323:1969-1971.
2. Sakaguchi H, Takano K, Fujimoto A, Kanehisa Y, Itoda M (2005) The condition of dentists located within the long term care hospitals and the facts of their oral care and dysphagia rehabilitation I. Japanese Journal of Gerodontology19:313-318.
3. Yoshioka M, Yokoyama M, Ichikawa T (2009) Oral health care for severe human cases encountered in Intensive Care Unit: professional oral care at Tokushima University Hospital Intensive Care Unit. Shikoku Acta Med 65:12-19.
4. CDC. Guidelines for preventing health-care-associated pneumonia.
5. Konishi H, Araki K, Sunakawa M, Takase K, Kato H (2007). A survey of dental association members' consciousness on prevention and control of nosocomial infection: (Part 1) Prevention and control of nosocomial infection in daily dental practice. Japan Soc Cons Dent 50:455-465.
6. Hakozaki S, Nagata R (2017) Current status of ward nurses' oral care and a comparison with the content of the existing manual. Japan J Occu Med Traumatol 65:75-81.
7. Mizobe J (2018) Measures to infection control in dental hygienist. J Japan Soc Dent Mat Dev. 37:215-218.
8. Shibuya Y (2010) Prevention of nosocomial infection & Importance of oral care. Japan J Oral Maxillofacial Surg 56:346-351.
9. (2014) Electronic version of the Nikkei.
10. Kanayama A (2014) Accumulation of multidrug-resistant Pseudomonas aeruginosa isolates at X hospital under the jurisdiction of Takatsuki City public health center. IASR 9:227-228.
11. (1985) The 24th reevaluation of drug efficacy.
12. Sunakawa M, Sumi Y (2003) Infection control on the occasion of oral care for the dependent elderly. Japanese Journal Of Gerodontology 18:227-233.
13. Guidelines for nosocomial infection control in general dentistry. (2014) Executive Committee for the Verification of Countermeasures against Nosocomial Infection in Dental Practice. 1-30.
14. Nishikawa M, Kobayashi H, Kajiura T, Sugawara E, Endo H (2014) Influence of alcohol on the tensile strength of nitrile examination gloves. J Health Care Asso Infect 8:35-38.
15. Taguchi M (2013) Experiments on the influence of various gloves using antiseptic hand rub. J Japan Endodontic Association 34:135-139.
16. Oie S (2021) 3rd Enteral nutrition injection set, disinfection of infusion route. Maruishi Pharmaceutical Infection Control. NEWS.
17. Umetsu A, Mihashi M (2017) Investigation of Spattering and Intraoral Environment During Oral Care of Patients. Japan J Infect Control Prev 32:186-192.
18. Yokota F, Takahashi I, Tamura T (2005) The Problem of Oral Care in Long-term Hospitalized Patients, The Japan Geriatrics Society 20:146-149.
19. Yamaguchi S (2019) Nosocomial infection control in dental practice from view point of dental public health administration. Annals Japan Prostho Society 11:122-126.