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Analysis on the Reasons of Reducing the Backwashing of Stomatological Equipment in Disinfection Supply Center

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ABSTRACT

In the disinfection supply center, it is possible to improve the qualified rate of cleaning, to ensure the success of sterilization, to prevent and control the occurrence of infection in stomatological hospital. Methods: A total of 18,857 oral instruments were washed from July to October 2015 and January to April, respectively, and 2,040 pieces were returned. Through analysis and comparison, the factors related to the increase of the instrument washing rate were analyzed and tracked. The results showed that the rinsing rate of oral instrument was reduced from 14.17% to 7.63%. Conclusion: In the hospital disinfection supply center equipment before the implementation of pretreatment and classification equipment into the mouth of the cleaning basket, to improve the cleaning pass rate, and reduce the back to work.

Introduction

Subject: Reduce the backwash of oral instruments. Reason: oral cavity is the body of bacteria, viruses and other places the largest number of pathogenic microbial sojae in the oral disease diagnosis and treatment process, oral devices directly contact the patient's saliva, blood, oral mucosa and dental tissue, pathogens spread a great opportunity. Dental equipment, a wide range of complex shapes, the use of frequent, serious pollution[1], if not thoroughly cleaned, will affect the quality of subsequent disinfection and sterilization, and hepatitis B, hepatitis C and AIDS and other blood-borne diseases and gastrointestinal infectious diseases[2] can easily lead to iatrogenic cross infection.

1 Materials and Methods

1.1 General Information Retrospective Statistics

In July and October 2015, a total of 9,194 oral instruments, and 1,303 backwash equipment were cleaned. In January to April, 2016,9,663 oral instruments and 737 washing equipment were cleaned in total to conduct comparative analysis. Daily visual inspection method of the joints, teeth, grooves, lacunae, occlusal surface smooth, no stains, blood stains, toothless powder and scale residue for qualified.

1.2 Method

According to the particularity of oral instruments, a total of 9,663 cleaned equipment cleaned from January to April 2016 and 737 backwashing equipment, were selected. Take a combination of manual cleaning and mechanical cleaning. Mechanical cleaning before the sub-equipment for the sub-seizure, select the appropriate cleaning basket and put the name of the department to identify signs to prevent confusion, and then enzyme immersion, scrub,

ultrasound and other pretreatment, for different pollutants. Select the appropriate cleaning agent, according to the manufacturer's instructions to configure the concentration, and control the water temperature and soaking time[3].

1) Oral work tip. First classified into the oral net basket, soaked in multi-enzyme cleaning solution for 5-10 min, with a special soft brush in the liquid under the light scrub. After removing the dirt which can be seen by eyes, place the tip in a special cleaning rack and then clean it by machine.

2) Eye mirror, probe, pressure needle, extraction pliers, dental collar and other oral instruments. Classified and soaked in multi-enzyme cleaning solution (according to the manufacturer's instructions) for 10 min, with a special soft brush or scouring cloth in the liquid surface, gently brushing the probe, toothbrush and tooth collar, concave trough, remove the visible dirt that can be seen in naked eyes. The toothbrush can be placed in an open manner, so that the joints can be completely open, the water and the pliers of various parts, including the full contact at the groove, for severe blood and then perform ultrasonic cleaning for 3 min, and finally clean in washing machine. Brush and pack the basket when doing personal protection, to avoid sharp injuries and occupational exposure[4].

3) Select correct operating procedures and cleaning agents. According to the manufacturer's instructions, select correct operating procedures and appropriate cleaning agent, lubricant, preparation concentration and temperature, and increase the pre-wash step. When placing the basket, place the position. During the cleaning process, strengthen to observe the size of water pressure, pure water conductivity, cleaning machine arm rotation times, rotation is smooth. After the work every day, in order to maintain the machine, with particular attention to observe whether the rotating arm screws are loose and whether the water hole is blocked. In case of the above, the manufacturer's technical staff should take maintenance measures in a timely manner to ensure the quality of cleaning. From time to time clean and maintain each machine, and when there are problems, get technical staffs from factory timely to carry out maintenance to ensure the quality of cleaning.

1.3 Strengthen Communication and Coordination with the Support of Departments

Department staff should take the initiative to communicate in various dental departments, dentist and nurses that use the oral equipment should initially clean the equipment in time with water or disinfectant and remove the visible pollutants, so as to extend the service life of equipment. In our department, every day staffs regularly collect equipment which has been used, so that equipment can be cleaned in time.

1.4 According to the Three Requirements of the Disinfection Supply Center, Develop Operational Procedures

According to the three requirements of disinfection supply center, tap water quality should be in line with the provisions of GB5749, pure water conductivity ≤ 15 μs / cm (25℃). In rinsing and washing, soft water should be used; pure softened water should be applied in the final rinsing and disinfection. In pre-wash stage, the water temperature should be ≤ 45℃. Disinfection supply center was established; the softener (the main component of sodium chloride, and chloride ions is used to replace the calcium and magnesium ions in the water, so that the hardness of the water reduces) is added into the water treatment system. Through once a week and each times with 5 kg, then changed to 3 days plus 1, each times with 5 kg, the rate of pure water conductivity has always been within the normal range (1 - 2 μs / cm), and the phenomenon of water spots on the device surface has been significantly reduced[5].

1.4.1 Check the Instrument

Use the magnifying glass or visual inspection with light source to check each piece of equipment, utensils and articles after drying; the surface of the instrument and its joints, the teeth should be smooth without blood stains, stains, scale and other residual substances, rust and damage. In this case, the cleaning is qualified; vice versa, failed, and the devices should be returned to the decontamination area. The blood stains, stains, scale and other substances left on the equipment should be re-cleaned until compliance with regulatory requirements. Rust the device out of rust, damage to the device function or serious corrosion should be promptly repaired or destroyed and replaced with new equipment. Passivation is required before the use of new equipment.

1.4.2 Precautions During Cleaning

Work according to the characteristics of automatic cleaning machine cleaning (spray washing, without brushing function) and the characteristics of oral devices, the first ultrasonic washing, and then into the washing machine cleaning. Ultrasonic time controls within 3 minutes, mainly because too-long ultrasonic time will scratch the mirror of the odontoscope which is made by glass, so that the mirror blurred; too-long ultrasonic time will wear off the sharpness of teeth tweezers and the probe which are very sharp, then cutting edge deformed, which both affects the operator to use, shortens the life of the device, and increases the cost of medical care. Ultrasound

time controls within 3 minutes, to achieve the effect of pretreatment and to reduce the wear and tear of the devices. And we use a special cover with stainless steel woven basket containing the probe, which can better prevent the probe deformation and bluntness. The use of combining routine monitoring and regular monitoring makes the quality of cleaning equipment continuously improved[6].

2 Results

Results are shown in Table 1.

Table 1 Oral Instrument Wash Back Comparison (%)

Time	Total Number	Failed
July-October, 2015	9194	1303 (14.17)
January-April, 2016	9663	737 (7.63)
X2 value		209.2
P value		< 0.001

3 Discussion

1) Focusing on the quality of cleaning equipment can effectively guarantee the success of sterilization. Cleaning quality control is an important part to ensure the success of sterilization, any residual organic matter such as blood, mucus, pus, protein will hinder disinfection and sterilization factors and microbes. The effective contact with the formation of bacteria and spores of protective film, affecting the sterilization effect[7], and oral instruments are the transmitting vectors of hepatitis B, hepatitis C, AIDS and other blood-borne diseases and gastrointestinal diseases. Oral disease diagnosis and treatment are dependent on oral instruments, serious pollution makes it an important medium for cross infection[8]. Effective cleaning can remove organic and inorganic pollutants to prevent corrosion of equipment, extend the service life of the equipment, reduce medical costs, thus it is important for the prevention and control nosocomial infections (especially blood-borne diseases) to improve the quality of medical care has a very important significance[9].

2) The use of combining routine monitoring and regular monitoring makes the quality of cleaning equipment continuously improved. From the table can be seen, oral device backwash rate from 14.17% to 7.63%, the difference was statistically significant ($P < 0.05$), effectively reducing the backwashing rate of oral instruments, and better ensuring the quality of oral equipment sterilization[10].

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