ASSISTED TOOTHBRUSHING SUPPLEMENT TO THE ORAL SOFT TISSUE IRRITATION TEST ON THE COLLIS CURVE TOOTHBRUSH

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INTRODUCTION

A large percentage of the residents in long-term care facilities are unable to achieve an acceptable level of oral hygiene due to mental and physical incapacities and thus need to rely on nursing staff for daily oral care. Moreover, a recent nationwide health survey by the National Institute of Dental Research indicates a tremendous decline in the number of adults who have lost all their natural teeth. Since 1960, the rate of toothlessness has dropped 60 percent in the 55 through 64 age group. At a time when we have a shortage of nursing personnel and with the elderly increasing at a greater rate than any other segment of the population, an increased burden is being placed upon institutions to provide more oral care for more individuals who become less and less able to care for themselves.

Proper toothbrushing to remove dental plaque is the procedure most commonly recommended for oral hygiene, and persons of all ages find acceptable plaque removal to be difficult and time consuming. Significant morbidity is associated with chronic inadequate oral hygiene. In addition, lack of self-esteem related to poor dental status has been observed in some nursing home patients, with the consequence being withdrawal from social interaction leading to personal isolation.[1, 2]

Doctor George C. Collis developed the curved bristle toothbrush after observing his mother struggle to provide daily oral hygiene for his father who had suffered from a stroke and was no longer able to care for himself. The family caregivers and the aides in long-term care facilities that provide assisted toothbrushing are providing a complicated and difficult procedure.

Assisted toothbrushing is significantly different from self brushing. In self brushing one plans in their mind where the toothbrush is going to be placed and automatically our body responds by a movement of the jaw or tongue

and etc. to make room for the head of the brush. With assisted brushing what movement we do get is a result of the head of the brush coming in contact with the tongue, cheek, teeth, and etc. The instantaneous biological feedback to pressure and pain associated with self brushing is absent or significantly slowed with assisted brushing. Injury to hard and soft tissue could potentially occur prior to receiving the feedback.

The specific aim of this controlled clinical trial was to monitor normal and abnormal tissue response when using the Collis Curved Toothbrush for assisted brushing.

MATERIALS AND METHODS

The protocol provided by the Council on Dental Materials, Instruments, and Equipment, for the Oral Soft Tissue Irritation Test, was used. Subjects were recruited from the seventy-two (72) candidates that participated in the self brushing study. The toothbrush evaluated in this study was the Collis Curve Adult. The reason for only evaluating the curved bristle toothbrush is that a control brush has not been established for assisted brushing and the Collis Curve Toothbrush is the only one specifically designed with assisted brushing in mind.

There were nine (9) husband and wife teams, giving us eighteen (18) subjects that signed the additional informed consent (Appendix I) and were entered into the study. The protocol was the same except this time they brushed their spouse's teeth twice daily for one minute each time. To allow for couples on conflicting schedules, we allowed them to brush their own teeth once daily for one minute in addition to the twice daily their spouse brushed for them. This increased the brush exposure by fifty percent from two (2) times a day to three (3) times a day.

None of the subjects were trained caregivers and no instruction was given them on how to prevent injury of the oral tissues. Each subject was given a Collis Curve Adult toothbrush and asked to provide daily oral hygiene for their spouse.

All forms and examinations were completed and conducted in the same manner as the self brushing study.

FINDINGS

Eighteen (18) subjects agreed to volunteer for the study. There was one (1) subject that came down with the flu and two (2) that had schedule conflicts and were unable to complete the study. This left fifteen (15) subjects to evaluate.

The demographics of the group are shown in Table I.

The assisted brushing study was conducted for two weeks immediately following the self brushing study. Therefore, the final visit examination of the self brushing study served as the baseline examination of the assisted brushing study. There were no abnormalities observed in any of the twelve (12) areas evaluated in the fifteen (15) subjects at the baseline examination or the one-week and final examination of the assisted brushing study.

None of the subjects reported unexpected or serious reactions during the study and no dental treatment was received.

DISCUSSION

Many of the subjects stated they had never thought about what a humbling experience it was to have someone else (even a spouse) brush their teeth for them. They stated it gave them a new appreciation for caregivers and the difficulty they experience in providing care on a daily basis.

They all stated they could see the importance of using a toothbrush that does not infringe upon the tongue or the cheeks when providing assisted brushing. The consensus was that the curved bristle brush made it possible for them to provide adequate oral hygiene for their spouse even though they were untrained as a caregiver.

CONCLUSION

The finding of this study indicates the Collis Curve Toothbrush is safe to use for assisted brushing as provided by the manufacturer and should be considered when recommending oral physiotherapy aids for the individual needing assistance with brushing.

REFERENCES

1. Kuypers, J.A., Bengston, V.L. Social breakdown and competence: A model of normal aging. Hum Devel 16:181-201, 1973.

2. Berkey, D.B., Holtzman, J.M. "Oral health" in Geriatric Medicine Annual, 1987, Medical Economics Books, Oradell, New Jersey, 222-236.