Dental Implant Status of Patients Receiving Long-Term Nursing Care in Japan

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ABSTRACT

Background: The increase in implant patients is expected to give rise to a new problem: the changing general health status of those who have had implants placed.

Purpose: The aim of this present study was to find out the needs of and proper measures for elderly implant patients in long-term care facilities.

Materials and Methods: A questionnaire was sent by mail to 1,591 long-term care health facilities, daycare services for people with dementia, and private nursing homes for the elderly in the Osaka area, which is in the middle area of Japan, in order to extract patients with cerebrovascular disease or dementia who were possibly at risk of inadequate oral self-care, as well as patients with implants.

Results: Approximately half of all facilities responded that they cannot recognize implants, and many facilities did not know anything about oral care for implant patients. Residents with implants were reported at 19% of all facilities. Also, the facilities pointed out problems with implants relating to the difference in oral care between implants and natural teeth.

Conclusions: There are people with implants in some 20% of caregiving facilities, and there is a low level of understanding regarding implants and their care among nurses and care providers who are providing daily oral care.

KEY WORDS: clinical study, elder care, implant survival, overdenture, peri-implantitis

BACKGROUND

The increase in implant patients is expected to give rise to a new problem: the changing general health status of those who have had implants placed.[1–3] Japan has the highest life expectancy in the world, and in 2007 it became the world's first "super-aging" society. The proportion of elderly people in Japan currently stands at 23.8%, and those who require nursing care are also increasing to 4.2% of those aged 65 to 74 and 29.2% of those aged 75 or over, with mainly cerebrovascular disease and dementia.[4] These conditions carry the risk of insufficient oral care by patients themselves because of disability of the limbs or reduced awareness of oral hygiene.

Costa and colleagues[5] reported an increased incidence of peri-implant disease accompanying poor implant maintenance as a result of inability to carry out oral care. Visser and colleagues[6,7] reported actual cases of problems regarding implants in patients with dementia. The objective of this present study was to find out the needs of and proper measures for elderly implant patients in long-term care facilities.

MATERIALS AND METHODS

A questionnaire was sent by mail to 1,591 long-term care health facilities (LCHFs), daycare services (DCSs) for

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people with dementia, and private nursing homes (PNHs) for the elderly in the Osaka area, which is in the middle area of Japan, in order to extract patients with cerebrovascular disease or dementia who were possibly at risk of inadequate oral self-care, as well as patients with implants. The questionnaire comprised a total of 26 questions, which were broadly classified into (1) overview of the facility (4 questions), (2) dentistry in general (3 questions), (3) oral care status (9 questions), and (4) implants (10 questions).

Details of the facilities were as follows: LCHFs are residential facilities for use by elderly persons aged 65 or older in receipt of certification from their municipal authorities that they require care. The medical services at these facilities are mainly rehabilitation aimed at enabling residents to return home, and there are many residents requiring assistance with oral hygiene; DCSs are daycare facilities aimed at those with dementia receiving care at home, who attend the facilities to receive care for their everyday living and functional training; PNHs are residential facilities that mainly provide services for everyday living. Their services need to be paid for, as these facilities are not eligible under the care insurance scheme. This study was approved by the Ethics Committee of Osaka University Graduate School of Dentistry.

RESULTS

Responses to the questionnaire were received from 189 facilities (83 LCHFs, 68 DCSs, 38 PNHs), a response rate of 11.9% (Table 1). The results for the 189 facilities that were analyzed are given below.

Overview of the Facility and Oral Care Status

Mean number of residents was 86 (± 29.8) in LCHFs and 68 (± 63.5) in PNHs. Oral care assistance was provided at over 90% of facilities of each type, and overall oral care assistance was high at 96%. The staff in charge of oral care assistance were mainly care workers, nurses, and dental hygienists.

Approximately half of all facilities provided oral care assistance after every meal. The most frequent care at DCS was after lunch (17/62 facilities, 28%). The time spent for oral care assistance was 5 minutes or less at over 80% of facilities (157/182, 86%). The proportion of residents who had difficulty carrying out their own oral care was approximately 40% of residents at LCHFs (34.6/85.6) and 12% at PNHs for people with dementia (8.1/68) (Table 2).

Implants

Approximately half of all facilities responded that they cannot recognize implants (93/189, 49%), and 71% of all facilities did not know anything about oral care for implant patients. Residents with implants were reported at 19% of all facilities (35/189), while many facilities did not comprehend the number of residents with implants (49/189, 26%), as they usually do not check at the time of patient admission or they were unable to make correct judgment.

The average number of residents with implants who had difficulty carrying out their own oral care was one or two individuals, and approximately half of the facilities that reported residents with implants had one such resident (17/35, 49%). Also, they pointed out problems with implants relating to the difference in oral care between implants and natural teeth (Table 3).

DISCUSSION

The response rate for the questionnaire in the present study was 11.9%, which was slightly lower than the response rate for a typical postal survey.[8] If we assume

TABLE 1 Overview of Facilities

	LCHFs	DCSs	PNHs	Total
Facilities contacted	590	679	322	1591
Facilities that responded	83	68	38	189
Response rate (%)	14.1	10.0	14.1	11.9
Number of residents, mean (± SD)	85.6 (± 29.8)	NA*	68 (± 63.5)	—
Number of beds, mean (± SD)	86.7 (± 32.9)	NA*	71.4 (± 30.1)	—

*DCSs are not residential facilities and do not have beds.
LCHFs = long-term care health facilities; DCSs = daycare services; PNHs = private nursing homes; NA = not applicable.

TABLE 2 Oral Care Status

	LCHFs	DCSs	PNHs	Total
Assistance, *n* (%)				
Yes	82/83 (99)	62/68 (91)	38/38 (100)	182/189 (96)
No	1/83 (1)	5/68 (7)	0/38 (0)	6/189 (1)
Unanswered	0/83 (0)	1/68 (1)	0/38 (0)	1/189 (1)
Frequency, *n* (%)*				
After every meal	52/82 (63)	22/62 (35)	22/38 (58)	96/182 (53)
1–2 times a day	25/82 (30)	20/62 (32)	11/38 (29)	56/182 (31)
Weekly	3/82 (4)	1/62 (2)	1/38 (3)	5/182 (3)
Monthly	0/82 (0)	0/62 (0)	0/38 (0)	0/182 (0)
Other†	2/82 (2)	19/62 (31)	3/38 (8)	24/182 (13)
Unanswered	0/82 (0)	0/62 (0)	1/38 (1)	1/182 (1)
Time, *n* (%)*				
Less than 3 minutes	43/82 (52)	18/62 (31)	12/38 (32)	73/182 (40)
3–5 minutes	28/82 (34)	37/62 (60)	19/38 (50)	84/182 (46)
5–10 minutes	6/82 (7)	6/62 (10)	4/38 (11)	16/182 (9)
More than 10 minutes	3/82 (4)	1/62 (2)	2/38 (5)	6/182 (3)
Unanswered	2/82 (2)	0/62 (0)	1/38 (3)	3/182 (2)
Residents having difficulty carrying out oral care				
Number of residents, mean (± SD)	34.6 (± 28.0)	NA‡	8.1 (± 7.1)	—
Percentage of residents	40.4	NA‡	11.9	—

*Question asked only of facilities that answered "yes" to the question regarding oral care assistance.
†Includes the facilities that provide oral care after lunch and those that depend on residents to provide their own oral care.
‡DCSs are not residential facilities and do not have beds.
LCHFs = long-term care health facilities; DCSs = daycare services; PNHs = private nursing homes; NA = not applicable.

that there was selection bias between facilities that responded and those that did not, with facilities that did not respond having little interest in oral care and implants, then the actual situation may be worse than our results suggest.

In this study, it should be noted that assistance for daily oral care is usually primarily provided by the caregiver or a nurse. Over 70% of facilities responded that "some things are unclear" with respect to implant oral care; this indicates the possibility that people lacking knowledge of implant oral care are actually performing the oral care of residents who have implants in place without proper understanding. Moreover, the fact that 26% of the centers did not know if the patients had dental implants suggests that there is potentially a large number of patients with dental implants. The lower the quality and frequency of oral care assistance, the higher the risk of aggravation of oral hygiene conditions. Our results suggest insufficient care for implants is due to the lack of understanding of implants.

To improve the situation, some effective measures should be considered. The first measure is for those involved in care provision and family members to acquire knowledge relating to implants. In the future, care workers may increasingly come into contact with implants, and knowledge relating to implants will be as essential as knowledge of oral care. While it does not relate directly to implants, educating nurses in oral care for stroke patients is reported to improve their knowledge and attitudes toward patients[9]; in the same way, there is a need to cultivate a better understanding of implants by bolstering education and sharing knowledge among workers other than dental professionals and among the families of patients with implants.

In addition, a system must be devised to create an environment in which the presence of an implant can be readily judged. It would be effective to give patients having implants some sort of "implant card" to carry to make it easy to tell where in the mouth the implants are, how many there are, and what make they are. At the same time, consideration should be given to the cleanliness of the prosthetic devices used in actual treatment. Specifically, a shift from fixed prosthetic devices to removable devices would allow the intraoral situation to

TABLE 3 Implant Status

	LCHFs	DCSs	PNHs	Total
Overall knowledge of implants, *n* (%)*				
Good knowledge	10/83 (12)	3/68 (4)	5/38 (13)	18/189 (10)
Some knowledge	33/83 (40)	26/68 (38)	15/38 (39)	74/189 (39)
Little knowledge	32/83 (39)	29/68 (43)	17/38 (45)	78/189 (41)
No knowledge	6/83 (7)	8/68 (12)	1/38 (3)	5/189 (3)
Unanswered	2/83 (2)	2/68 (3)	0/38 (0)	4/189 (2)
Knowledge relating to implant oral care, *n* (%)*				
Good knowledge	4/83 (5)	1/68 (1)	3/38 (8)	8/189 (4)
Some knowledge	19/83 (23)	12/68 (18)	7/38 (18)	38/189 (20)
Little knowledge	38/83 (46)	23/68 (34)	21/38 (55)	82/189 (43)
No knowledge	18/83 (22)	28/68 (41)	7/38 (18)	53/189 (28)
Unanswered	4/83 (5)	4/68 (6)	0/38 (0)	8/189 (4)
Residents with implants, *n* (%)				
Yes	16/83 (19)	7/68 (10)	12/38 (32)	35/189 (19)
No	42/83 (51)	40/68 (59)	19/38 (50)	101/189 (53)
Unknown	23/83 (28)	19/68 (28)	7/38 (18)	49/189 (26)
Unanswered	2/83 (2)	2/68 (3)	0/38 (0)	4/189 (2)
Residents with implants having difficulty carrying out own oral care, *n* (%)†				
Yes	9/16 (56)	3/7 (43)	8/12 (67)	20/35 (57)
No	5/16 (31)	4/7 (57)	4/12 (33)	13/35 (37)
Unanswered	2/16 (13)	0/7 (0)	0/12 (0)	2/35 (6)
Problems or concerns regarding implant oral care assistance, *n*‡				
Not knowing whether residents had implants	33	26	10	69
Being unable to distinguish between implants and natural teeth	30	16	12	58
Not knowing the difference between oral care for implants and that for natural teeth	33	27	15	75

*Question answered according to respondent's subjective assessment.
†Question asked only of facilities that answered "yes" to the question regarding residents with implants.
‡Question asked of facilities with no experience in oral implant care. Multiple answers were allowed.
LCHFs = long-term care health facilities; DCSs = daycare services; PNHs = private nursing homes.

become more simple, thus lessening the burden on those providing oral care assistance.[10,11]

In the present survey, 17 of the 189 facilities responded that there was at least one person with an implant who had difficulty performing his/her own oral care. Bearing in mind the current increase in Japan in the number of patients receiving implants and in the number of elderly people receiving care, the number of residents with implants who have difficulty performing their own oral care will undoubtedly increase. In light of the results of the present study, there is a need to carry out field studies of intraoral complications such as the incidence of peri-implant disease.

CONCLUSION

While the present study was only a survey carried out in a certain area of Japan, it showed that there are people with implants in some 20% of caregiving facilities. Among the centers providing long-term nurse care included in the present investigation, knowledge about the patients' dental status, and in particular about dental implants and dental implant care, was very low.

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