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Clinical Report

Dental Care for Physically or Mentally Challenged at Public Dental Clinics

Kiyoshi Mochizuki, Keiichiro Tsujino, Yumi Ohtawa, Masashi Yakushiji*, Kou Nomura**, Tatsuya Ichinohe** and Yuzuru Kaneko**

Division of Pediatric Dentistry, Department of Clinical Oral Health Science, Tokyo Dental College, 2-9-18 Misaki-cho, Chiyoda-ku, Tokyo 101-0061, Japan
* Department of Pediatric Dentistry, Tokyo Dental College, 1-2-2 Masago, Mihama-ku, Chiba 261-8502, Japan
** Department of Dental Anesthesiology, Tokyo Dental College, 1-2-2 Masago, Mihama-ku, Chiba 261-8502, Japan

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Abstract

Recently, local administration bureaus have established a number of dental clinics and centers for the physically or mentally challenged (PMC) in collaboration with local dental associations. The aim of this study was to investigate dental treatment and general supportive care for the PMC in dental clinics in Tokyo. A dental clinic for the PMC located in northwestern Tokyo in a district with a population of about 680,000 was selected for the study. The variables studied based on dental records included total number of patients, type of disability, medical history, systemic condition, age, treatment regimen and type of general supportive care. The largest group of new patients was under 9 years of age. The highest total number of patients visiting the clinic belonged to the 60–69-year-olds group and the 70–79-year-olds group. We also investigated type of disability in patients treated under intravenous sedation at time of dental treatment. The most common condition was dementia resulting from Alzheimer’s disease (42.74%), autism, cerebral palsy or mental retardation, in descending order. The percentage of patients referred from other medical institutions was 17.4%, including those from private dental clinics and Dental University Hospitals. Type of disability in patients transferred from other medical institutions included developmental disorders (28.2%), senile defects (26.9%), chronic and psychiatric diseases (44.9%). The number of patients who located and visited the clinic by themselves greatly exceeded the number transferred by request. This suggests that a permanent system should be put in place offering public specialized dental clinics where the PMC may obtain treatment.

Key words: Disability—Dental care—Dental treatment—Public dental clinics—General management care

Introduction

Dental care for the physically or mentally challenged (PMC) should be performed in consideration of the effect of that care on their systemic conditions. General supportive
care at the time of dental procedures varies depending on factors such as communication with patients during treatment, medical history, age, dental treatment priorities and problems of prognosis/maintenance.

PMCs usually visit either private dental clinics, the department of dental surgery in general hospitals/Medical University Hospitals or Dental University Hospitals. These patients present with various problems and risk factors, such as systemic problems due to chronic disease, physical disabilities, severe mental retardation, involuntary movement of the whole body and advanced age. Private dental clinics often refer such patients to the department of dental surgery in general hospitals or Dental University Hospitals in order to control their systemic conditions at the time of dental treatment. However, these patients are sometimes unable to visit such hospitals for a variety of reasons: the hospitals are located far away; they cannot get there by themselves; or they cannot obtain assistance in commuting there. Instances of long distances to travel between the patient’s home and the referred facility are easily imagined. When a patient receives treatment, the method of travel often used is public transportation. Poor facility accessibility is probably a factor in cases where the patient has not sought care. Not all patients needing treatment reside in locations allowing them easy access to transportation. Improvement of Quality of Life requires establishment of dental clinics for PMCs which offer easy access. Recently, local administration bureaus have established a number of dental clinics and centers for such patients in collaboration with local dental associations. In Tokyo, 16 clinics in total have already opened. Each clinic operates in accordance with local government policy on budget and conditions for general supportive care. The care package varies depending on the facility. For example, anesthesiologists from University Hospitals perform general supportive care; anesthesiologists, pediatric dentists and/or specialists in dental treatment for PMCs are dispatched from University Hospitals to provide dental treatment; and dentists who are members of local dental associations perform dental treatment. These facilities are broadly divided into hospitals specializing in prevention of dental caries/periodontal diseases, those which perform dental treatment without sedation, and those which perform dental treatment with sedation, based on patients’ general supportive care and treatment limitations. This aim of this study was to investigate dental treatment and general supportive care for PMCs in dental clinics in Tokyo, and to ascertain the visiting patterns and care provided. Such information would be useful in framing operational policy for such facilities. State of dental treatment and general management over the last 5 years, type of patient disability, referral by local dental association, referral rate and coordination with other medical institutions were investigated.

Materials and Methods

A dental clinic for the PMC located in northwestern Tokyo in district with a population of about 680,000 was selected for the study. The basic operational policy of this facility is as follows: dental treatment is performed within the responsibility and limits of the primary medical institution; there should be no age limitation; dental treatment for bedridden patients over 65 years of age in this area should be performed separately under a home visit program, although such patients may be treated at this facility if the dentist in charge considers that dental care by home visit is insufficient and transfer is necessary. Patients difficult to handle at this clinic or who require general anesthesia should be transferred to high-level hospitals.

This dental clinic is open twice a week, and a dental anesthesiologist and pediatric dentist are dispatched from Tokyo Dental College Hospital on one of the consultation days, Thursday. On the other day, Saturday, a dental anesthesiologist and a pediatric dentist from A-Dental University Hospital perform dental treatment in the morning, and a dental
anesthesiologist and a specialist in treatment for the PMC from B-Dental University Hospital take charge in the afternoon session. Dental anesthesiologists from the above-mentioned University Hospitals are responsible for general supportive care and 3 dentists from the local dental association and the pediatric dentist or PMC treatment specialist dispatched from the Dental University Hospital perform dental treatment.

The study period was 5 years, from 2001 to 2005. The number of new patients was calculated based on new patient records. The number of new patients and number of patients seen on all consultation days (twice a week) were checked from medical history records. The following variables were also studied from dental treatment records on consultation days by specialists from Tokyo Dental College. They included total number of patients, type of disability, medical history, systemic condition, age, treatment regimen and type of general supportive care.

**Results**

Table 1 shows the number of new patients presenting during the course of this study. A total of 448 patients visited this dental clinic. Of them, 199 patients visited the facility on Tokyo Dental College consultation days. The number of patients who were referred from other dental-medical institutions was 78, as shown in Table 2, including 72 patients from private dental clinics belonging to the dental medicins.

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<tr>
<th>Table 1 Number of initial medical examination patients</th>
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<tr>
<td>Investigation years</td>
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<tr>
<td>---------------------</td>
</tr>
<tr>
<td>2001</td>
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<td>2002</td>
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<td>2003</td>
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<td>2004</td>
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<td>2005</td>
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<td>Total</td>
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<tr>
<th>Table 2 Referred from other dental-medical institutions</th>
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<tbody>
<tr>
<td>Private dental clinics</td>
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<tr>
<td>------------------------</td>
</tr>
<tr>
<td>72</td>
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<tr>
<th>Table 3 Type of disability in patients transferred from other institutions</th>
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<tr>
<td>Developmental disorders (28.2%)</td>
</tr>
<tr>
<td>Mental retardation 13</td>
</tr>
<tr>
<td>Autism 3</td>
</tr>
<tr>
<td>Down syndrome 1</td>
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<tr>
<td>Cerebral palsy 3</td>
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<tr>
<td>Epilepsy 2</td>
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<tr>
<td>Senile defects (26.9%)</td>
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<tr>
<td>Cerebrovascular disease 15</td>
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<tr>
<td>Alzheimer’s disease 6</td>
</tr>
<tr>
<td>Other chronic or psychiatric diseases (44.9%)</td>
</tr>
<tr>
<td>Cardiopathy-respiratory insufficiency 11</td>
</tr>
<tr>
<td>Diabetes 2</td>
</tr>
<tr>
<td>Hypertensive 10</td>
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<tr>
<td>Schizophrenia 6</td>
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<tr>
<td>Renal failure 1</td>
</tr>
<tr>
<td>Cancer 1</td>
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<tr>
<td>Rheumatism 3</td>
</tr>
<tr>
<td>Renal failure 1</td>
</tr>
<tr>
<td>Cancer 1</td>
</tr>
<tr>
<td>Schizophrenia 6</td>
</tr>
<tr>
<td>Rheumatism 3</td>
</tr>
<tr>
<td>Visual and auditory disabilities 1</td>
</tr>
<tr>
<td>Total 78</td>
</tr>
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local dental association and 6 patients from Dental University Hospitals. Table 3 shows type of disability in patients transferred from other dental or medical institutions. These included developmental disorders (28.2%), senile defects (26.9%), chronic or psychiatric diseases (44.9%). Dental treatment requests from other dental institutions are shown in Table 4. The most common regimen among oral surgery was tooth extraction (47.4%) and the second most common was caries restorative treatment (43.6%).

Tables 5 and 6 show age distribution of new patients and total number of patients for the 5-year study period, from 2001 to 2005. The largest group of the new patients was under 9 years of age. The highest total number of patients who visited the clinic belonged to the 60–69-year-olds group and the 70–79-year-olds group. Type of disability in new patients is shown in Table 7; patients with multiple diseases were counted more than once. The most common disease was cardiovascular disease, followed by cerebro-vascular accident and mental retardation. Table 8 shows therapeutic regimen, which was counted more than once where the same patient received multiple treatments. Over the 5 years, the most common treatment was periodontal treatment, followed by dental caries restor-
Type of general management care by dental anesthesiologists, as well as total number of patients, are shown in Table 9. The most frequently used therapy was intravenous sedation (238 cases), followed by monitoring of sphygmomanometry, electrocardiogram and oxygen partial pressure (208 cases), and inhalation sedation (7 cases). Table 10 shows type of disability in patients treated with intravenous sedation at time of dental treatment, together with major disability (a major symptom). The most common symptom was dementia resulting from Alzheimer’s disease (101 cases: 42.4%), followed by autism, cerebral palsy or mental retardation.

Discussion

The dental clinic targeted in the current study is located in northwestern Tokyo, in one of the city’s 23 wards. This particular ward had
an average population of about 680,000 at the
time of the study. The percentage of the
population 65 years old or over in this region
was 17.4%. It has been 12 years since this
public dental clinic for both healthy patients
and PMCs was established in 1995. This
institution is run by the local administrative
office, and 4 dental chairs have been set up in
a health center at the municipal office. The
local dental association operates this clinic as
a subcontractor to the district. It is open twice
a week and manned by dentists from the local
dental association. Where necessary, such as
when general anesthesia is required, dental
anesthesiologists and specialists in PMC care
are dispatched from University Hospitals.
These dental anesthesiologists, pediatric den-
tists or specialists provide an initial examina-
tion for new patients. The patients are then
assigned to dentists from the dental associa-
tion or specialists. Patients with autism or
other specific syndromes are always treated
by the same specialists. Specialists dispatched
from University Hospitals provide lectures on
dental treatment in PMCs to dentists from the
local dental association, as well as providing of
dental treatment.

The number of patients referred to the
clinic from other dental-medical institutions
during the study was 78, which occupied
17.4% of the total number of new patients,
and most of these were transferred from local
private dental clinics. However, the majority
of new patients visited the clinic by their own
or their parents/guardians’ will, after obtain-
ing information about the clinic through an
official notification from the local administra-
tive office. The clinic provides a free shuttle
bus service by advance reservation. The local
administrative staff is responsible for the
shuttle bus service operation. This service may
be one of reasons that the patients and/or
their families, who are socially disadvantaged,
select this clinic. The location of the clinic,
which is placed within the local administrative
office, may also be a decisive factor in choos-
ing this clinic. Patients who were transferred
from the department of dental surgery at
general hospitals or Dental University Hospi-
tals were resident in this area and did not
need general anesthesia.

The most common disability type in patients
transferred from other dental-medical insti-
tutions was sequelae from cerebro-vascular
accident, followed by heart disease and respi-
rationary disease. Hence, the most frequently
requested procedure was tooth extraction, as
general supportive care was critical.

In terms of age distribution, the largest
group of new patients was under 9 years of
age, but the highest number of patients who
visited the clinic belonged to the 60–69-year-
olds group and the 70–79-year-olds group.
The reason may be that the number of actual
treatment days in children was lower because
caries was rare, they mainly visited the clinic
for caries prevention, or they didn’t want to
miss school for dental treatment. On the
other hand, it seems that elderly patients
exhibited various symptoms and had time
to visit the clinic. In terms of type of disability
in new patients, this was counted more than
once where patients had more than one
disease. The most common diseases were
cardiovascular disease and cerebro-vascular
accident, probably due to the high percentage
of elderly patients. The details of medical
procedures include crossover. The most com-
mon treatments were for periodontal disease,
followed by caries restorative treatment. This
may have been due to decrease in maxillo-
facial motor function caused by hypoactivity
and/or brain damage leading to mastication
and swallowing problems, so that a lot of food
residue remained in the oral cavity. Further-
more, it has also been suggested that this may
be due to an inability to maintain oral hygiene,
including routine dental plaque control
4. The most common therapy provided by
dental anesthesiologists was intravenous sedia-
tion, followed by monitoring of sphygmo-
manometry, electrocardiogram and oxygen
partial pressure. Nitrous oxide sedation was
the least used therapy. Intravenous sedation
was used most for patients with dementia
resulting from Alzheimer’s disease, followed
by autism, cerebral palsy or mental retarda-
tion. This method is frequently used due to
loss of comprehension regarding dental care needs, communication difficulty, learning disability, or involuntary movement. Patients with cerebro-vascular accident, heart disease or respiratory disease often undergo dental procedures under monitoring of the cardiovascular system.

Recently, many local administrative offices have set up dental clinics for the PMC in cooperation with dental associations. There are two patterns: with or without Dental University Hospital involvement. As a result, some regional differences may occur: for example, general supportive care or dental procedures using sedation may not be provided due to lack of anesthesiologists. However, establishment of such dental clinics results in providing dental treatment for the PMC, who might not otherwise be able to get treatment. The dental clinic in targeted in this study, basically, does not provide dental procedures requiring general anesthesia. In such cases, or where the patient requires specialist treatment, they are referred to high-level hospitals.

Typically, dental clinics seldom actively treat patients who present with risks due to their general condition. Such patients are referred to key local hospitals and university hospitals, where general management is possible. This is because it is necessary to prevent occurrence of medical mishaps and because the investment needed to provide such care is difficult to recoup. Nevertheless, not all patients referred to University Hospitals visited those facilities. Instances of long distances to travel between the patient’s home and the referred facility are easily imagined. When a patient receives treatment, the method of travel often used is public transportation. Poor facility accessibility is probably a factor in patients failing to seek care. Not all patients needing treatment reside in locations allowing them easy access to transportation. In addition, not all patients needing care have the ability to travel alone. An attendant to accompany them to and from the hospital and a means of travel can not always be provided. For groups of such patients, that is, individuals needing care, PMCs, and the elderly, who desire to go to medical institutions such as University Hospitals but lack the means to do so, providing facilities that can care for them in their community is probably linked to an improvement in patient QOL. Increasing the return on treatment for individuals needing care and PMCs under Japan’s current dental insurance system is difficult. Under current conditions, where there is a lack of consistency between long-term care insurance and medical insurance, if medical institutions specializing in dentistry for the PMC do open privately they cannot raise their revenue base without having patients pay their own expenses. Not all patients can pay high medical fees, so even if a treatment facility is run privately it may only receive few visits by patients with low incomes. To improve QOL, patients needing care must be encouraged to seek care. To encourage patients to seek care, public dental treatment facilities must be located near residential areas. Additionally, a transportation system linking the patient’s home and clinic is needed for groups of patients who lack a means of travel. Establishment of a more convenient transportation system and lower charge system so that patients can easily visit facilities are needed.

Dental care and treatment without regional differences should be provided for the PMC. However, the government policy of health care cost cuts may make this difficult. In this study, the number of patients who located and visited the clinic by themselves greatly exceeded the number of patients transferred. Consequently, a permanent system offering public specialized dental clinics capable of treating any patients with any kind of disability should be put in place.

References

2) Franks AST, Winter GB (1974) The management of the handicapped and chronic sick

Reprint requests to:
Dr. Masashi Yakushiji
Department of Pediatric Dentistry,
Tokyo Dental College,
1-2-2 Masago, Mihama-ku,
Chiba 261-8502, Japan
E-mail: yakusiji@tdc.ac.jp