

Dohsa-Hou Therapeutic Approach of Completely Edentulous down syndrome Patient before Rehabilataion with a Dental Prosthesis- a Case Report

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Abstract- Down's syndrome is a very common genetic disorder associated with medical and physical problems such as cardiac disorders, hearing disability, infectious diseases, intellectual disability and developmental delays. Down's syndrome is caused due to non-disjunction of chromosome 21 and translocation of an extra copy of the same chromosome. Oral manifestations include hypodontia, periodontitis, premature exfoliation of teeth, xerostomia, misaligned teeth and decreased vertical occlusal dimension. Due to poor oral hygiene and impaired host defense mechanisms in these patients, the prevalence of periodontal disease is high. This can ultimately lead to tooth loss resulting in edentulism for which prosthetic rehabilitation becomes a necessity. The dental treatment of such patients is challenging and complicated due to the intellectual disability that limits their ability to learn, communicate and adapt to the environment. Behavioural management is sometimes required for Down's syndrome patients. This article discusses a case of Down's syndrome who presented with fully edentulous oral cavity and had psychiatric symptoms. The case was managed with a Dohsa-hou therapeutic approach for prosthetic rehabilitation of the oral cavity.

Keywords-Down's syndrome, complete denture, Dohsa-hou, treatment, behavioural problem

INTRODUCTION

Down's syndrome (DS) is one of the most common congenital disorders.¹The incidence of DS has been variously reported as 1 in 800 live births to 1 in 1,100 live births. A

recent study puts the incidence at about 1 in 1,000. There is no association between DS and any given culture, ethnic group, socioeconomic status or geographic region.²

Many clinical symptoms of this chromosomal malformation are caused by additional chromosome 21. The appearance of three instead of two chromosomes is referred to as trisomy. Extra chromosome 21 leads to symptoms such as: metabolic disorders, tissue dimorphism, internal organs disorders and characteristic phenotype in physical appearance, muscle hypotony and mental retardation.² The age when children with DS achieve gross motor function is at approximately twice the age of performing motor skills by children typically developed.³ Cognitive development is also delayed among children with DS.⁴ A slower rate of such areas of development as intelligence, attention, verbal communication, learning, memory and performing motor abilities is observed.

Psychiatric disorders prevalence (e.g., depressive, obsessive-compulsive, and psychotic-like disorders) is 18 to 38% in individuals with Down syndrome.⁵ Common symptoms in depressive disorder include depressed mood, decreased interest, psychomotor slowing, sleep disturbance, and weight change. Conversely, social withdrawal and compulsive behaviour are associated features in depressed adults with DS.⁶ Such circumstances may be a result of an unclear understanding of the mechanism of deterioration. As such, these types of conditions markedly impact the lives of the individuals, as well as their family.

Despite the importance of emotional and behavioural problems in Down syndrome, intervention and treatment studies for these problems are limited. Psychotropic medication is the most frequently used approach for psychiatric symptoms and behavioural problems. Several studies have reported beneficial effects on their problems to some extent. However, psychosocial treatments for such problems in adults with DS are rarely reported.⁷

Dohsa-hou is a psychosocial treatment approach, which has been used in clinical practice mainly in Japan and East Asian countries.⁸ Dohsa-hou was used as psychological rehabilitation in various disorders including DS. This approach uses body movement, bodily feeling, and the experience of relaxation and body movement as a means of therapeutic intervention and communication.⁹ Although clinicians have described case reports of Dohsa-hou in children and adolescents with Down syndrome, suggesting improvement in psychological and social function, this case report utilizes Dohsa-hou approach as means of

therapeutic intervention and communication during rehabilitation of patient for complete denture prosthesis.

CASE REPORT

An 18 year old female patient with Down's syndrome was referred to the Department of Prosthodontics after extraction of some missing teeth from Oral Surgery department. She came with her guardian for the treatment. The chief complaint as given by the patient's guardian was difficulty in mastication due to multiple missing teeth. When reported, she was completely edentulous. Behavioural management of the patient was difficult due to her uncooperativeness and non-compliance due to intellectual disability and dental phobia. Complete denture prosthesis was planned for her prosthetic rehabilitation along with Dohsa-hou technique for behavioural management. Informed consent was obtained from the patient's guardian prior to the procedure.

The patient came to the department with her guardian as her parents had abandoned her as a child. Therefore family history of similar syndromic features could not be obtained. On general examination, patient presented no other medical problem. The patient was short and mentally retarded. Patient presented with a classic face of DS patient on extraoral examination with small chin, slanted eyes, poor muscle tone and a flat nasal bridge. Intraoral examination revealed completely edentulous oral cavity, a comparatively reduced denture bearing area as the oral cavity was smaller and a relatively large protruding tongue. The oral mucosa of the patient was healthy. Radiographic examination with an orthopantomograph (OPG) before the prosthetic procedure showed no residual roots, bony spicules, cysts or any other pathological condition.

The initial four to five appointments over a span of 15-20 days were utilised exclusively for the behaviour management of the patient with the Dohsa-hou technique. The patient refused to sit on the dental chair initially and waited in the reception area of the department. She was also reluctant to talk and express herself. We established a rapport with the patient during these initial appointments by giving her impression material in her hands and letting her play with it, speak and touch in a friendly manner (Figure 1). Gradually the patient became comfortable, began to smile and trust us with letting us visualise her oral cavity.

After the fifth appointment, primary impression was made in the sixth appointment with putty silicon impression material (Figure 2). The advantage of this material being fast setting and no need to heat the material. This was followed by border moulding in a single stage technique and final impression with a light body impression material (Figure 3). Jaw relation was taken in the eighth appointment (Figure 4). Following, trial of the waxed up denture was taken evaluating the form, function, aesthetics and patient approval. It was observed that the jaw size of the patient was less so second molars were reduced at the stage of try in. A final prosthesis was then delivered to the patient in the tenth appointment. Oral hygiene instructions were given to guardian and was instructed to remove the prosthesis at night and clean the oral cavity. The patient was scheduled for a 3 month follow up.



Figure 1: Dohsa-hou technique applied on the patient



Figure 2: Primary impression



Figure 3: Final Impression with light body impression material



Figure 4: Jaw-relation of the patient



Figure 5: Right side view of Trial denture



Figure 6: Left side view of final prosthesis

DISCUSSION

Patients suffering from DS vary widely as to their degree of intellectual impairment. Maximum patients report with a mild to moderate IQ range and require no modifications in the treatment setting. Along with intellectual impairment, there is also a severe delay in language development. These patients have poor verbal skills but better understanding skills.¹⁰

More number of dental appointments are needed to explain the procedure to the DS patients and to gain their trust in the clinician. However, they report to be very co-operative once the trust is gained through subsequent appointments. Scheduling the appointments earlier in the day is recommended as both the patient and the clinician are more rested.

Complete medical history to be obtained prior to the procedure as DS patients report with a variety of medical problems and physician consultation may be required.¹¹

There is an extremely high rate of missing teeth in both primary and permanent dentitions. There are some reports in the literature suggesting successful prosthetic rehabilitation of DS patients that leads to improvement of their quality of life.¹²⁻¹⁷ However, reinforcement of oral hygiene instructions is essential for the long term success of the prosthesis in DS patients.

CONCLUSION AND FUTURE SCOPE

Down's syndrome patients should be treated carefully with appropriate behavioural management techniques. Dohsa- hou technique as presented in this case report helps in the dental treatment of DS patients. Also, the need of prosthetic rehabilitation is high in these patients due to the high prevalence of hypodontia and premature exfoliation of teeth.

It is preferable to treat a mentally challenged patient like a Down's syndrome patient for edentulous oral cavity with implant supported prosthesis rather than removable complete denture prosthesis due to non-compliance of such patients in wearing the denture and decreased manual dexterity which is required for proper wearing of denture. In this case report, the complete denture that was prepared can be used as a stent for placement of implants for implant supported overdenture or complete denture in the future. Due to economic issues this treatment could not be carried out in this patient.

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