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Research Article

AN AYURVEDIC APPROACH TO DOWN SYNDROME: A CASE REPORT

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ABSTRACT

Down syndrome or trisomy 21 is a genetic condition with a myriad of symptoms and the risk of the child having the syndrome increases as the age of conception of the mother increases. Children with Down syndrome usually has variety of health issues concerning almost all the systems. The syndrome is the one of the major causes for mental handicap. This case report deals with the Ayurvedic management of Down syndrome in a three and a half year old male child presented with complaints of delayed speech, drooling of saliva and inattentive behavior. The child was diagnosed with Down syndrome and was undergoing allopathic treatment for the same. The case was treated with Abhyanga (body massage), Utsadana (Ayurvedic Body scrub), Sirolepanam and Matravasti with Ayurvedic drugs and physiotherapy was also carried out. The patient showed considerable improvement of the presenting symptoms and was discharged after 21 days with instructions to take medicines internally, undergo physiotherapy and attend special school.

Keywords: Down syndrome, Abhyanga, Utsadana, Sirolepanam, Matravasti

INTRODUCTION

Down syndrome (DS) is one of the most prevalent genetic diseases appearing in about 1 in 400-1500 newborns. DS is one among the heading leading causes of intellectual disability.¹⁻³ The incidence of trisomy is influenced by maternal age and differs in population (between 1 in 319 and 1 in 1000 live births).⁴ DS presents with various health issues, including heart defects, hematopoietic disorders, mental retardation, gastrointestinal anomalies, weak neuromuscular tone, dysmorphic features of the head, neck and airways, audiovestibular and visual impairment, characteristic facial and physical features and Alzheimer's disease.⁵ Recent advances in medicine inclusive of Ayurveda treatment modalities can be effectively made use in increasing the life expectancy in children with DS.

CASE REPORT

A three and a half year old child has attended Kaumarabhritya outpatient department of KMCT Ayurveda Medical College, Manassery, Kozhikode. He was the second child of non-consanguineous marriage and was full term normal delivery baby. He was diagnosed with Down syndrome and initially took allopathic treatment and had undergone all other diagnostic tests. From there the child was advised to undergo growth and developmental monitoring, ophthalmological evaluation and to repeat thyroid function tests. Ayurvedic treatment started at the age of two and a half years for delayed speech and walking. The child got remarkable improvement after this treatment within the course of one year. He attended special school for 8 months where his social interaction with peer group improved. He has a brother seven years elder to him who is healthy. However, one of

his cousins, two years elder to him, has the same complaint. The present complaints for which his parents approached the Department were delayed speech (since one year of age), drooling of saliva (since two years of age), and inattentive behavior (since two and a half years of age). The patient was admitted as in patient for treatment under the Department. There was no past history of upper respiratory tract infection, echocardiogram was found to be normal and brainstem evoked response audiometry (BERA) showed normal hearing sensitivity. Ultrasonography of abdomen, kidney and urinary bladder did not reveal any abnormalities.

The study is carried out as per International conference of Harmonization-Good Clinical Practices Guidelines (ICH-GCP) or as per Declaration of Helsinki guidelines. The ethical clearance for the study was obtained from institution.

Natal History

Regular antenatal care was carried, and two doses of tetanus toxoid injection was taken. Age during conception was at 24 years. Birth weight was 2.2 kg (Low birth weight) and birth cry was present. On day 2, neonatal hyperbilirubinemia (NNHB) was observed along with polycythemia. Polycythemia was corrected by partial saline exchange and NNHB corrected by phototherapy. The baby was diagnosed with trisomy 21 phenotype with mongoloid slant, brachycephaly, clinodactyly, palmar single crease, sandal gap and loose skin folds over neck. The baby was exclusively breast fed for 3 months and after that top feeding with semi solid foods like smashed rice and ragi was started. Breast feeding was continued until two and a half years of age. All vaccinations were administered as per schedule. The child had mixed food habits and an inclination to pungent tastes. He also

had good appetite, regular micturition and bowel evacuation, though control on both was not attained. Sleep was sound and does not have any habits or allergy.

Clinical Observations

The patient was well nourished and moderately built with dysmorphic facies. On clinical examination, heart rate and pulse of 82 per minute, respiratory rate of 26 per minute and body temperature of 37°C were recorded. Brachycephaly with flat

occiput, anterior fontanelle not closed, flat face, hypertelorism with mongoloid slant, epicanthic folds, Brushfield iris, upward slanted palpebral fissures, flat nasal ridge, open mouth, microdontia with enamel hyperplasia, short hands, clinodactyly and sandal gap were observed. Hypotonia was present. Patent *ductus arteriosus* was present at the time of birth and was closed by two year of age. Simian crease was present at the time of birth and now it was absent. Mophometric parameters and developmental history are given in Table 1 and 2 respectively.

Table 1. Mophometric Parameters

	Attained	Normal Limit
Head Circumference	45 cm	49 cm
Chest Circumference	46.5 cm	52 cm
Height	79 cm	95 cm
Weight	10 kg	14 kg
Mid arm (Right)	14 cm	16 cm
Mid arm (Left)	14 cm	16 cm

Table 2. Developmental History

Milestone	Attained age	Normal limit
Gross motor development		
Neck control	3 ½ month	3 rd month
Pull to sit up	1 year	4 th month
Sit without support	1 ½ month	7-8 th month
Stand holding	3 rd year	9-10 th month
Psychological		
Social smile	3 rd month	3 rd month
Cognitive		
Becomes alert when mother is around	2 nd month	2-3 months
Reaching for dropped object	7 th month	7-8 th month
Laughs for a peak a boo game	9 months	8-9 months
Fine Motor		
Holds rattle	4 th month	4 - 5 months
Holds object in each hand	7 th month	7 th month
Language		
Babble	1 st year	5-6 months
Monosyllable	2 nd year	8-9 months
Bisyllable	Not attained	10-11 months

Intervention

Abhyanga (body massage) with Balaswagandhadi taila was given for four days followed by Utsadana (Ayurvedic Body scrub) with Triphala churna in Dhanyamla for three days. Sirolepanam with Panchagandha churna was carried out for five days and full body application of Njavara (medicinal rice) was carried out for seven days. Matravasti with Dhanwantharam tailam was carried out until discharge. Total duration of treatment was 21 days. Physiotherapy was done on all days. Discharge medicine advised were Kalyana avaleha choornam, Brahmi ghrithm and Balarishtam internally and Abhyanga with Balaswagandhadi taila externally. Physiotherapy and attending special school were also advised.

RESULT AND DISCUSSION

During the course of the treatment there was decrease in drooling of saliva, social interaction was improved and grasping power increased. Walking stability was improved and language development, motor activities and imitating power were increased. The child became more conscious and aware of his environment. As per Ayurvedic parlance, Down syndrome can be better understood as, Sahaja beej-abeeja bhaga-beeja bhaga

avayava janya vikara (disorders of germ cell, chromosome or gene)⁶. For the same mainly Vatahara treatments are to be resorted to along with Medya dravyas (nootropic drugs). Symptomatic treatment should also be followed depending on the condition. Treatments such as Abhyanga, Utsadana, Sirolepanam, full body application of Njavara and Matra vasti can be performed.

CONCLUSION

Down syndrome is a disease which is seen in approximately one in 1000 live births and its frequency increases with increasing maternal age. The life expectancy in the syndrome is around 50 years, though some of the patients live for longer periods. The case study reveals that Ayurvedic intervention carried out had a positive effect on the child as improvement was obtained in all the presenting complaints. Hence the same treatment plan can be adopted for similar diagnosed cases. Thus, Ayurvedic interventions can bring about positive changes in the life of patients with Down syndrome enabling them to lead better lives mentally and socially.

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