WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 13, Issue 2, 736-743. Case Study ISSN 2277–7105

A CASE STUDY ON *PANCHKARMA* PROCEDURES IN THE MANAGEMENT OF IDIOPATHIC TOE WALKING IN CHILDREN

Dr. Diksha Kumari[1]* and Prof. Dr. Minakshi[2]

PG. Scholar[1], Prof. Dept. of Kaumarbhritya[2]

Rajiv Gandhi Government Post Graduate Ayurvedic College, Paprola Himachal Pradesh 176115.

Article Received on
25 November 2023,

Revised on 15 Dec. 2023,
Accepted on 05 Jan. 2024

DOI: 10.20959/wjpr20242-30981

***Corresponding Author**
Dr. Diksha Kumari
PG. Scholar, Rajiv Gandhi Government Post Graduate Ayurvedic College, Paprola Himachal Pradesh 176115.

ABSTRACT

Background of the Study: Idiopathic toe walking is a term used to describe a state in which a child, in the absence of a known cause, walks on his or her toes, as compared to the normal heel-toe gait. It has thus far been unknown how common it is for children to walk on toes. Neuropsychiatric conditions include among others ADHD, tics and autism. The diagnosis is thus used when other defined causes are excluded. Problems that may develop untreated ITW are shortened calf muscles with limited mobility in the ankle, pain, balance and foot problems. It has been shown that impaired ankle mobility is common in patients seeking orthopaedic help for foot problems. Treatment options includes physiotherapy, casting, botulinum toxin A and surgical procedures. There is no exact co-relation found for idiopathic toe walking in *Ayurvedic* literature. **Aim:** To assess the effect of *Panchkarma* procedures and physiotherapy in the management of idiopathic toe walking. **Material and Method:** In this case study, one case of idiopathic toe walking was registered and treated with multiple treatment modalities. Total period of treatment was of one sitting in which 15 days of *Abhyanga* with *Shasti Shali Pind Swedana* and then 7 days of *Matra Basti* by *Ksheer Bala Taila*. Physiotherapy includes stretch exercises was done twice for 15 days. **Results:** Treatment protocol delivered better result in idiopathic toe walking. **Conclusion:** *Panchkarma* procedures and physiotherapy are found to be quite effective and with no side effects in managing idiopathic toe walking.

KEYWORDS: Idiopathic toe walking, Neuropsychiatric conditions, *Panchkarma* procedures, Physiotherapy.

INTRODUCTION

Children with a seemingly typical development and who walked on their toes were first described by Hall in 1967.[1] Many of the children who toe-walk only have a mild contracture of the Achilles tendon or no contracture at all.[2] Thus, the term idiopathic toe walking or the synonymous 'habitual toe-walking' is mostly used today. The focus of the diagnosis was to exclude other defined medical conditions responsible for the toe-walking gait.[2] Consequently, when a clinical assessment of a child does not display a medical cause for toe walking, it may be labeled as ITW. ITW is therefore a diagnosis of exclusion in which the cause is unknown. There is no unanimous definition of ITW and it is therefore important for each author to define what is meant by ITW. Some considerations to be specified are.

-Duration of the toe walk

-Contracture of the Achilles tendon and calf muscles

- Coexisting neuropsychiatric symptoms

In previous studies, a family history was reported in 30 - 40% of children with ITW.[3-5] At two years of age, the majority of children have developed a prominent heel strike, which includes active dorsiflexion of the forefoot. Among clinicians working with children with pediatric neuropsychiatric disorders, there is a general impression that children with ADHD are more often toe-walkers than children with age appropriate behaviours. However, to the best of our knowledge, there are no scientific studies exploring this correlation. For children with an autism spectrum disorder or a communication/language disorder, the prevalence of ITW has been reported to be as high as 19 - 63%.[5-7] Children with ITW have been reported to have an increased prevalence of various developmental delays. A wide variety of treatment recommendations have been suggested for ITW. Treatment options includes physiotherapy, casting, botulinum toxin A and surgical procedures. There is no exact co-relation found for idiopathic toe walking in *Ayurvedic* literature. In *Ayurveda*, various *Panchkarma* procedures such as *Abhayanga, Shasti Shali Pind Swedena* and *Matra Basti* can be useful in treating idiopathic toe walking.

CASE REPORT

Age : 2years 5 months

Sex : Female

Religion : Hindu

Socioeconomic Status : Middle Class

Chief Complaints

Unable to walk since an appropriate age.

Unable to stand for longer time.

History of Present Illness

A 2 yr 5 months old child with her attendant presented in the OPD of Kaumarbhritya, RGGPG Ayurvedic College and Hospital Paprola on date 28-03-2023. Patient attendant told that she was unable to walk since an appropriate age. On further enquiry attendant told that she was also unable to stand for longer time and is only able to stand with some support.

History of Past Illness

No relevant history was found.

Birth History

According to child's mother, she was her first child delivered through LSCS, full term, having insignificant antenatal, natal history. Child attain all developmental milestones as per chronological age except stands on toe. She was diagnosed with idiopathic toe walking by orthopedicians.

Family History

No history of toe walking in parents.

On Examination

General Physical Examination

General appearance : Active

Skin : Normal

Head : Normal

Nose : Normal, no DNS

Ears : Normal

Neck : Normal, no webbed neck

Eyes : Normal vision

Upper limb : NAD

Lower limb : **IDIOPATHIC TOE WALKING**

Ext. Genitalia : Normal

Anthropometry

Head circumference : 34c.m.

Crown heel length : 48c.m.

Chest circumference : 32c.m.

Mid arm circumference : 13c.m

CNS Examination

Power	Right	Left
Upper limb	4/5	4/5
Lower limb	3/5	3.5/5

Tone	Right	Left
Upper limb	Wnl	Wnl
Lower limb	Wnl	Wnl

Bulk	Right	Left
Upper limb	Wnl	Wnl
Lower limb	Wnl	Wnl

DTR	Right lower limb	Left lower limb
Knee	+	+
Ankle	+	+

According to the idiopathic toe walking severity classification, it was considered.

Type II.[8]

MATERIAL AND METHODS

Treatment procedure includes table 1 and table 2.

Table 1: *Shodhana* Medications.

Procedure	Drug Used	Duration
Deepana – Pachana	Syrup trikatu	5 days
Abhyanga	*Bala Taila*	15 days
Shasti Shali Pind Swedena	*Shali Rice, Go-Dugdha, Bala kwath*	15 days
Matra Basti	*Ksheer Bala Taila (7ml)* initially and increased to 10 ml on 14th day	8 days

***Shamana* Medications**

Medicine	Dose	Duration	Anupana
Kumar kalyanak Ghrita	2 gm /day	1 montth	*Ushna Jala*
Syrup *Arvindasava*	2.5 ml bd	1 month	Equal amount of water

Physiotherapy includes stretch exercises was done twice for 15 days.

DISCUSSION

Role of *Abhyanga*

Abhyanga is *Kaphavatahara*, *Pushtikara (*health promoting) and *Ayuvardhaka* (increases life span). *Abhyanga* nourishes the superficial and deep muscles and make the muscles strong and joints stable. *Abhyanga* induce pleasantness and calming effects. The strokes used in *Abhyanga* like kneading; friction etc improves local circulation. The procedure which causes unctuousness, fluidity, softness, and moistness in the body is *Snehana* therapy. *Abhyanga* and *Shasti Shali Pind Swedena* both cumulatively help in reduction of spasticity and facilitate free movement of joint preventing from deformities and improves contractures in idiopathic toe walking. Massage of the entire body with medicated oils like *Bala taila, Narayana taila, Prasarini taila,* and *Mashadi taila* are very effective in facilitating free movement of joints.[9]

Role of *Shasti Shali Pind Swedena*

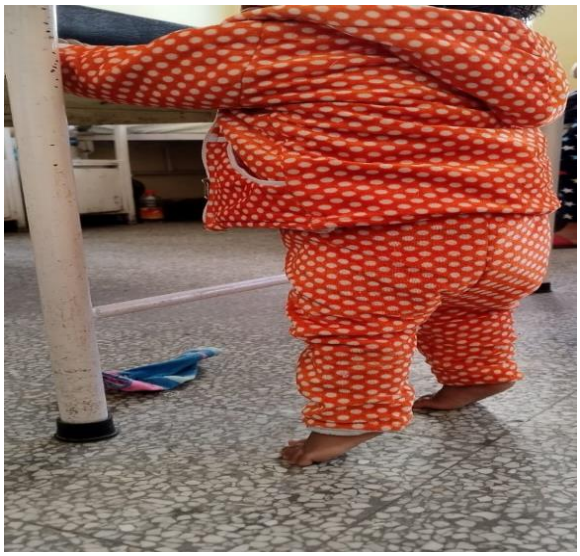
Shashtika rice (Oryza sativa Linn) is *Snigdha* (unctuous), *Bala vardhana* (tonic) and *Deha dardhyakrita* (makes the body strong). The heat provided by bolus of *Shashtika shali* dipped in *Balamula kwatha* (roots of *Sida cordifolia*) with *Godugdha* increases the blood flow locally, relieve muscle spasm, increase tendon extensibility and provides pain relief. *Bala* absorbed locally provides nourishment to muscular tissue and prevents from emaciation. Combined effect of *Abhyanga* and with Physiotherapy helps to reduce spasticity, facilitate the free movement of the joints and to prevent development of contractures in idiopathic toe walking It also provides nutrition to muscular tissue thereby preventing from atrophy and detrimental changes.[10] *Shasti Shali Pind Swedena* is the efficacious procedure in chronic *Vata* diseases.

Role of *Matra Basti*

Basti is effective and safe in children. It is a procedure where medicine is administered through genitourinary tract using *Bastiyantra*. Among all therapeutic procedures, *Basti* the most appropriate remedial measure for *Vata dosha. Basti* is having two actions, expelling the *Dosha* & nourishing the body as it is indicated in *Gambhiragata vata* (neurological conditions chronic and deep seated) also. *Matra Basti* is a sub type of *Anuvasana Basti* in which oil or ghee is given by rectal route in a small quantity. When medicated oil reaches rectum and colon, presence of short chain fatty acids in oil allows direct diffusion of drugs from epithelial cells in to capillary blood villi showing its generalized effect.[11]

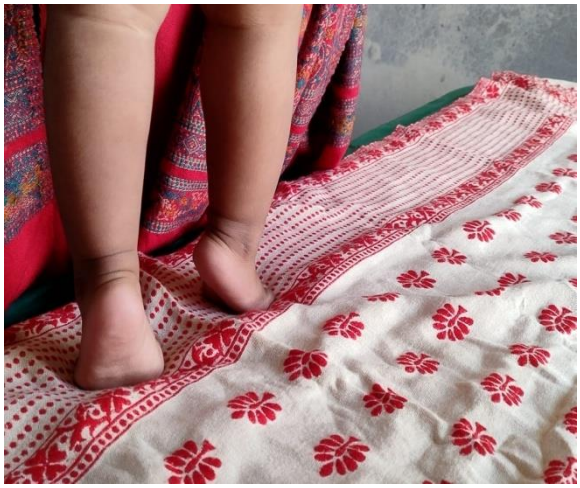
Role of Physiotherapy

In ITW treatment, physiotherapy formed one part of the treatment. Heel-cord stretching exercises, children performed passive stretching exercises to increase the length of the calf muscles and some children performed exercises to increase the active dorsiflexion of the ankle.[12-13]

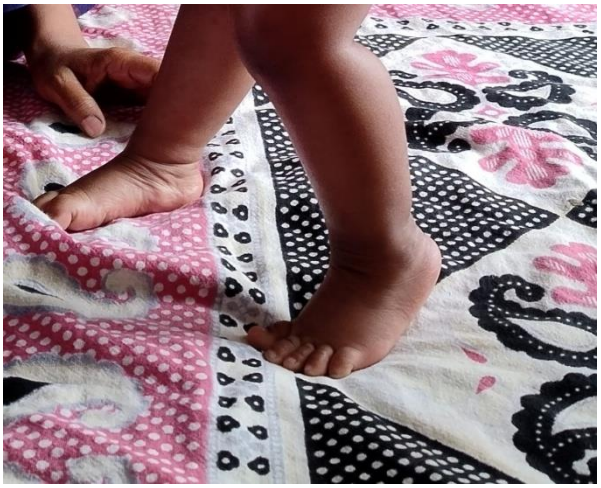


Day 1

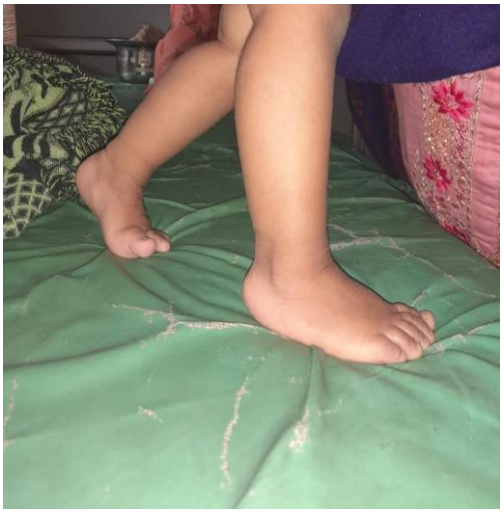
Day 3



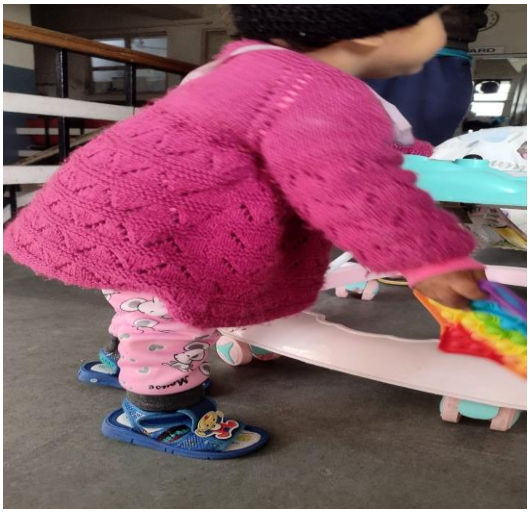
Day 4



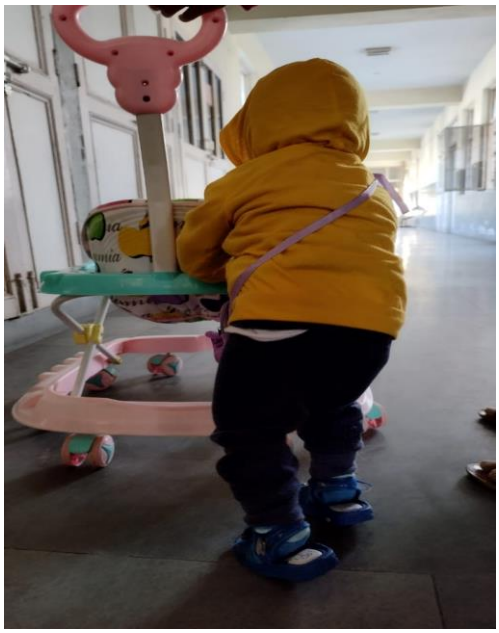
Day 5



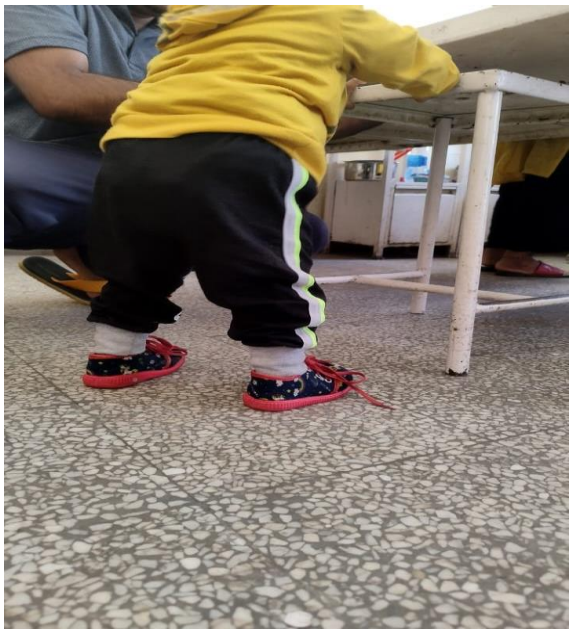
Day 7



Day 9



Day 10



Day 14

CONCLUSION

Various *Shodhana* and *Shamana* procedures have proved their efficacy in the management of idiopathic toe walking. *Sarvanga Abhyanga, & Shasti Shali Pind Swedena* reduce spasticity improves flexibility of joints, improves circulation and reduces pain. *Basti* is the major treatment for vitiated *Vata Dosha* and it improves gross as well as fine motor functions, provides nourishment, improves overall general condition and quality of life in children with idiopathic toe walking. Internal medications like *kumarkalyanak Ghrita* capable of enhancing sensory motor functions along with cognitive function of brain and immunomodulation. *Arvindasava* act as neuroprotective and antioxidant. Physiotherapy helps in improving the

active dorsiflexion of the ankle. Overall this intervention results in heel strike at initial contact phase of the gait cycle in toe walkers children.

REFERENCES

1. Hall JE, Salter RB, Bhalla SK. Congenital short tendo calcaneus *J Bone Joint Surg Br*, 1967; 49: 695-7.
2. Sala DA, Shulman LH, Kennedy RF, et al. Idiopathic toe- walking a review. *Dev Med Child Neurol*, 1999; 41: 846-848.
3. Stricker SJ, Angulo JC. Idiopathic toe walking: a comparison of treatment methods. *J Pediatr Orthop*, 1998; 18: 289-93.
4. Fox A, Deakin S, Pettigrew G, et al. Serial casting in the treatment of idiopathic toe-walkers and review of the literature. *Acta Orthop Belg*, 2006; 72: 722-30.
5. Engstrom P, Gutierrez-Farewik EM, Bartonek A, et al. Does botulinum toxin A improve the walking pattern in children with idiopathic toe-walking? *J Child Orthop*, 2010; 4: 301-8.
6. Shulman LH, Sala DA, Chu ML, et al. Developmental implications of idiopathic toe walking. *J Pediatr*, 1997; 130: 541-6.
7. Accardo P, Morrow J, Heaney MS, et al. Toe walking and language development. *Clin Pediatr (Phila)*, 1992; 31: 158-60.
8. Alvarez C, De Vera M, Beauchamp R, et al. Classification of idiopathic toe walking based on gait analysis: development and application of the ITW severity classification. *Gait Posture*, 2007; 26: 428-35.
9. Sharma PV, editor. *Chikitsasthana; Vatavyadhichikitsa Adhyaya. Charaka Samhita* of Agnivesha. 8th ed. Chapter 28, Verse 56. Varanasi, India: Chaukhamba Orientalia, 2007. p. 466.
10. Sharma PV, editor. *Nidanasthana; Vatavyadhi Nidana Adhyaya. Sushruta, Sushruta Samhita*. Chapter 1, Verse 74. Varanasi, India: Chaukhambha Visvabharati, 2005; 15.
11. Sharma PV, editor. *Chikitsasthana; Vatavyadhichikitsa Adhyaya. Charaka Samhita* of *Agnivesha*. 8th ed. Chapter 28, Verse 57. Varanasi, India: Chaukhamba Orientalia, 2007; p. 466.
12. Stricker SJ, Angulo JC. Idiopathic toe walking: a comparison of treatment methods. *J Pediatr Orthop*, 1998; 18: 289-93.
13. Hirsch G, Wagner B. The natural history of idiopathic toe-walking: a long-term follow-up of fourteen conservatively treated children. *Acta Paediatr*, 2004; 93: 196-9.