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A study on the role of matravasti in Hirschsprung disease in children

Case Report

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Abstract

Hirschsprung disease (HSCR), or congenital intestinal aganglionosis, is a birth defect characterized by the complete absence of neuronal ganglion cells from a portion of the intestinal tract. Symptoms include constipation, bloating of the belly, and loss of energy and appetite. Diagnosis of the disease includes an abdominal x-ray which shows a bulge in the large intestine caused by stool, barium enema, anorectal manometry, or biopsy of the rectum. In Ayurveda, congenital diseases come under *janmabala pravritta vyadhi*. It leads to vitiation of the *rasavaha*, *annavaha* and *malavaha* srothas of the fetus, later leading to *dusti* of *vata* in *pakwashaya* and guda. The treatment involves normalization of *Vata* in the body using a protocol that pacifies the *Vata*, including *Vasti*. Considering the age of the patient, *Matravasti* was done using *Sukumaraerandam* and a few internal medicines for the mother. It consists of drugs that pacify *Vata* as well as those which improve digestion.

Key Words: *Matravasti*, *Sukumaraerandam*, Hirschsprung disease, *Baddhagudodaram*, *Janmabala pravritta vyadhi*, *Malabandham.*

Introduction

Hirschsprung disease (HSCR), or congenital intestinal aganglionosis, is a birth defect characterized by a complete absence of neuronal ganglion cells from a portion of the intestinal tract, most commonly the large intestine (1). The stool moves slowly or becomes stagnant in the area lacking the ganglionic cells, up to which the stool moves normally. HSCR is most attributed to defective craniocaudal migration of neuroblasts originating from the neural crest during the first twelve weeks of gestation, resulting in functional intestinal obstruction (2). Genetic syndromes like Down's syndrome are also linked to this disorder. The symptoms begin to be noticed within the first few weeks of the birth of the child. Symptoms of the newborn include not having a bowel movement in the first 48 hours of life, slow swelling and bloating of the belly, and vomiting green or brown fluid. Late symptoms include constipation which is worsened over time, small, watery, or bloody stools, and loss of energy and appetite(3). Diagnosis of the disease includes an abdominal x-ray which shows a bulge in the large intestine caused by stool, barium enema, anorectal manometry, or biopsy of the rectum. Allopathic treatment of Hirschsprung disease involves surgery in which the abnormal part of the large intestine is removed and re-anastomosis is done. To compensate for this reduction and prevent infections, the diet of the child must be modified with more quantity of nutrition.

In Ayurveda, congenital diseases come under *Janmabala pravritta vyadhi*, the cause of which is the *mithyaahara vihara* of the pregnant mother (4). It leads to vitiation of the *rasavaha*, *annavaha* and *malavaha* srothas of the fetus, later leading to *dusti* of *vata* in *pakwashaya* and guda. *Vasti* is the best treatment for vitiated *Vata* (5). Hence the treatment involves normalization of *Vata* in the body using a protocol that pacifies the *Vata*, including *Vasti*.

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Case report

A three-and-a-half-month-old female child was brought by her parents to the *Kaumarabhritya* OP with the diagnosis of Hirschsprung disease. The child's mother complained about the difficulty in defecation after 16 days of birth.

Case history

The child was born by normal vaginal delivery at full term with a birth weight of 3.5 kg. There was no history of maternal infection or use of medication during pregnancy. The mother's age at the time of conception was 23. She did not have hyperthyroidism nor was diabetic. The child passed meconium after birth. Later, the mother started to notice difficulty in defecation, with the child passing stools only once in 3-4 days. The parents consulted a doctor in a hospital nearby their house and the child was administered an enema, but it was of no particular benefit. Following this, they consulted a renowned allopathic pediatrician and were advised to take a full-thickness rectal biopsy,

but no beneficial result was obtained. The same doctor advised them to consult in another allopathic hospital and the child was said to undergo surgery. But the parents were reluctant. To find an alternate method of cure they came to *Kaumarabhritya* OP. They also took advice from a government medical college prior to starting Ayurvedic treatment.

Clinical assessment

During the examination, the child was conscious and crying. Her vitals were stable. Urination was normal and the child had a good appetite. Her sleep was also normal. Examination of the abdomen revealed distension with no tenderness. Soft bowel sounds were heard per abdomen. Biopsy revealed that the section from proximal to dentate line showed occasional scattered ganglionic cells. Sections below and above the dentate line showed the absence of ganglionic cells. Assessment of the symptoms indicated that there was vitiation of the Apana Vayu in guda and pakwasaya. The *Rasavaha srothas, Annavaha srothas,* and the *Malavaha srothas* were identified to be afflicted as per the symptoms. The *roga* condition was diagnosed to be *malabandha* (constipation) due to *badhagudodaram* (intestinal obstruction) (6).

Management

The treatment of *pakwasayagatha Vata*, *vibandham* and *badhagudodara* is *udawartha hara kriya* (7). Hence a protocol was selected to bring about *vatanulomana* and relieve *malabandha*. The age of the patient was given special attention. The protocol included a few internal medicines for the mother and *matravasti* for the child.

Table 1: Internal medication for the mother

S. No	1	2	3
Name of formulation	*Gandharva hasthadi kashayam* (8)	*Sudarshanam gutika*(9)	*Shatawari gulam*(10)
Dose	15 mL in 45mL lukewarm water	2 tablets	1 teaspoon
Frequency	Twice daily	Twice daily	Once daily
Route of administration	Orally before food	Orally after food	Orally in the morning
Duration	30 days	30 days	30 days

It is proven that medication administered to a breastfeeding mother reaches the baby and affects his health too. Hence internal medication was provided to the mother to accelerate the process of *rogamukti*. *Gandharvahasthadi kashayam* has a cleansing effect on the intestines and is also indicated for *malashodana* (evacuation of feces) and *pavanasya Shanthi* (normalization of Vata). *Sudarshanam gutika*, widely used as an antipyretic is also functional as a mild laxative. It is also used as a digestive in gastrointestinal conditions. *Shatawari gulam* was a supplementary medication given to the lactating mother to improve breast milk production and quality of breast milk.

Table 2: Treatment for the child

S No.	**1**
Name of the formulation	*Sukumara erandam* (11)
Dose	10 ml
Frequency	Once daily
Route of administration	Through anus
Duration	30 days

Sukumaraerandam is one the popular laxative used for bowel movements. It is comprised of ingredients that prevent inflammation and pain while also aiding digestion and regular bowel movements. Hence it was given in the form of *Matravasti* (12).

Methods

The child was given 10 mL of *Sukumaraerandam* the morning on the first morning of treatment. The medicine was administered using a glycerine syringe and catheter. The same treatment was continued keeping the child in thorough observation for a period of 30 days.

Observations and Results

On the first day, following *Matravasti*, the bowel was evacuated shortly with loose yellowish stools along with the *Thailam*. There was no complications post-treatment and the child slept peacefully following breastfeeding. The efficacy of *Matravasti* using *Sukumaraerandam* in *malabandham* in an infant was assessed considering the clinical symptoms of the patient before and after the duration of the treatment. The patient showed marked improvement in her conditions.

Table No. 3: Changes in clinical symptoms before and after treatment

S No.	**Signs & Symptoms**	**Before treatment**	**After treatment**
1	Constipation	Type 1	Type 5
2	Consistency	Hard lump-like stools with difficult to pass	Loose, soft blocks & easily passing out stools
3	Frequency	Once in 4 -5 days, induced daily with a suppository	Daily with no use of suppository

The constipation of the child was assessed before and after the treatment by using the Bristol stool chart.

BRISTOL STOOL CHART
Type 1: Separate hard lumps (hard to pass)
Type 2: Lumpy, sausage-shaped
Type 3: Sausage-shaped with cracks on the surface
Type 4: Sausage-shaped or snake-like; smooth and soft
Type 5: Soft blobs with clear-cut edges (easy to pass)
Type 6: Fluffy pieces with ragged edges; mushy
Type 7: Entirely liquid, watery, no solid pieces

The patient was prescribed the following as discharge medicine and her parents were asked to bring her for a review after three months

S. No	Name of formulation	Dose	Route of administration	Frequency
1	*Brahmierandam*	2 ½ mL	Oral	Before sleep at night
2	*Aravindasavam* (13) + *Mustarishtam* (14)	2 ½ mL	Oral	Twice daily
3	*Mahadhanwantharam Tab* (15)	1 Tablet	Oral	With Arishtam

After three months, the parents informed that the child was passing well-formed stools every day and there was no sign of constipation. The health of the child was also satisfactory.

Discussion

Hirschsprung disease (HCSR) is a common condition resulting in intestinal obstruction in neonates and megacolon in infants and adults (16). One out of 5000 newborns are diagnosed with Hirschsprung disease (17). It is caused by the absence of autonomic ganglion cells which are derived from the neural crest, in the terminal hindgut. Common symptoms in children include chronic constipation and swelling in the abdomen (18). Diagnosis of the condition involves imaging techniques, anorectal manometry, and rectal biopsies (19). The condition is relieved temporarily by administering an enema**.** Doctors recommend ostomy surgery followed by a pull-through procedure (20). In Ayurveda, Hirschsprung disease can be correlated to *Baddhagudodara* (21) and *Malabandha*. Being a congenital disease, it can be included in *Janmabala pravrutha vyadi*. The *nidana* of these kinds of diseases is usually attributed to the *mithyaharavihara* of the mother during *garbhakaala*.

The treatment chosen for this disease would involve treatment of the *Apana vayu* and *srotho avarodha*. *Vasti* is considered desirable for *dosas* of *Vata* predominance or *vata alone*. It is the foremost among all the modalities of management of Vata. Considering the age of the patient *Matravasti* was chosen as it was desirable for *baala* and as no strong regimen was required. *Sukumaraerandam* is primarily used for aiding digestion and enhancing bowel movements. It is an *Ayurvedic* laxative and relieves constipation. *Bilwa* (*Aegle marmelos Correa* ex roxb) has the property of balancing all the dosas. *Syonaka* (*Oroxylum Indicum* vent) has pain-relieving and anti-inflammatory properties. *Patala (Stereospermum suaveolens* dc) balances the dosas and relieves the pain. *Agnimantha* (*Premna integrifolia* linn) balances the *Vata dosha*. *Shalaparni* (*Desmodium gangeticum* dc) balances *Vata* and *Kapha dosa* and is good for the digestive system. *Brihati* (*Solanum Indicum* linn) and *Punarnava* (*Boerhavia diffusa* linn) are having an anti-inflammatory effect. *Prishnipari*(*Psudarthira viscida* linn) is anti-infective. *Kantakari* (*Solanum virginianum*) also has similar properties. *Gokshura* (*Tribulus terrestris* linn) balances *Vata* and *pitta* and has a calming effect on the nerves. *Jivanti* (*Leptadenia reticulata* retz) is anti-inflammatory. *Ashwagandha* (*Withania somnifera* dunal), is a powerful immunomodulator. *Eranda* (*Ricinus communis* Linn) balances *Vata* and *Kapha dosas*. *Shatavari* (*Asparagus racemosus* willd) has multiple benefits including being a rejuvenative, antacid, antitumor, anti-microbial, laxative, antispasmodic, antioxidant, and adaptogenic drug. *Darba* (*Imperata cylindrica* p.beauv) is anti-bacterial and anti-spasmodic. *Atidarbha*(*Typha elephantina* roxb) is a good hemostatic. *Shasa*(*Saccharum arundinaceum* retz) is widely used for *gudavyadis*. *Kusha* (*Desmostachya bipinnate* stapf) is used in the treatment of blooding piles. *Ikshu* (*Saccharum officinarum* linn) is having laxative and anti-septic properties. *Mundika* (*Sphaeranthus indicus* linn) is the drug for hernia and hemorrhoids. *Bhadrika* (*Aerva lanata Juss.* ex. schult) pacifies pitta *dosha*. *Pippali* (*Piper longum* linn) activates *agni*. *Saindava* used in this formulation balances pitta. *Jeera* (*Cuminum cyminum* linn) is an excellent digestive stimulant. *Draksha* (*Vitis vinifera* Linn) eases bowel movements. *Gambhari* (*Gmelina arborea* roxb) is an analgesic. *Sunti* (*Zingiber officinale* roscoe) aids digestion. *Guda* (Jaggery) improves digestion and eliminates acidity. *Yashtimadhu* (*Glycyrrhiza glabra* linn) treats ulcers and hyperacidity. *Eranda thaila* (*Ricinus communis* linn) is a good laxative and alleviates *Vata*.

Brahmierandam is a simple laxative medicine that is safe for children. *Brahmi* is also having an anti-inflammatory effect and tackles many gastrointestinal issues. *Aravindasavam* works as a general tonic for children. It helps to improve appetite, digestion, health, immunity, and strength. It corrects malabsorption and is found beneficial in many deficiency disorders. *Mustarishtam* is mainly prescribed for the treatment of digestive problems like indigestion, gastroenteritis, irritable bowel syndrome, and mal-absorption syndrome. *Dhanwantharam* tablet is widely used to treat digestive disorders like flatulence, gastritis, and bloating. So, these formulations were prescribed as *shamana aushadha* post-discharge to improve the general condition of *annavaha* and *malavaha* srothas.

Conclusion

In the above case study, correlating with symptoms, Hirschsprung disease in the patient was related to *Baddhagudodara* and *malabandha*. It was a condition of *Apana Vayu vaigunya* hence treatment was done for *vataanulomana*. *Vasti* was chosen to be the main treatment for *Vata* and considering the age of the patient, *Matravasti* using *Sukumaraeradam* was chosen, considering the qualities of this formulation. The patient showed significant improvement after 90 days of scheduled treatment. Hence it was confident to discharge the patient after prescribing *shamana*

aushadha. The clinical response of the patient was well appreciated but whether the aganglionic region will regenerate or not is a situation of advanced research.

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