



A Clinical Case Report In The Management Of Phakka Roga W.S.R To Delayed Developmental Milestones In Children: An Ayurvedic Approach

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Abstract:

The term Development indicates combined growth of physical, cognitive, communication and socio-emotional factor at proper time. Any delay in achieving these milestones in 2 or more domains of development is considered as Global Developmental Delay, which has a prevalence of 52.9 million cases worldwide. In Ayurveda Phakka roga mentioned by Acharya Kashyapa, explains about the impaired development of physical and psychomotor factors of a child resulting in walking disability. A 2 year 2 months old male child was brought to Panchakarma OPD of Ayurveda College Coimbatore having complaints of inability to stand and walk without support, improper speech associated with impaired socioemotional factors. The child was admitted and treated with appropriate external therapies and internal medications in two sittings. Before and after treatment he has been assessed and noticeable improvements in speech, walking without support, waving a bye was observed. Ayurveda treatment thus proves to be highly effective in the management of developmental delays.

Keywords: Global developmental delay, Milestones, Phakka, Santarpana

Introduction:

Developmental delay is called so when a child does not reach an expected developmental milestone at the anticipated age. Developmental milestone includes sensorimotor, cognitive, communication and socio emotional behaviour. The Global estimation of WHO shows that 52.9 million children under 5 years of age struggle with developmental disabilities.¹ The major causative factors include trauma, low birth weight, genetic, exposure to toxins, poor nutrition, pregnancy complications, premature birth, etc. Developmental delay is broadly divided into 2, viz., Global

developmental delay, where 2 or more milestones affected² & Specific developmental delay where any one developmental factor is impaired. In Ayurveda, etiopathogenesis of delay can be understood through scattered references like janma bala pravrutta vyadhi, sareera vrudhikara bhava, asthimajja gata vata, graha roga etc. A much similar condition is described in Kashyapa Samhita called as Phakka roga where a child is unable to walk even after attaining one year of age associated with the affected overall development.³

Patient Information:

A 2 years 2 months old male child had reported to the outpatient department with complaints of inability to speak (rarely monosyllable), unable to stand and walk without support, lack of gestures for requirements like food, toys etc

History of Present Illness:

The patient was apparently normal since birth and had normal development up to the age of 5 months. Gradually, the patient's mother started noticing a delay in his activities such as rolling over, standing with and without support, speech, walking with support etc in comparison to the children of the same age group. Patient's mother waited till age of 2 years and found no improvement. So, she consulted Panchakarma OPD of Ayurveda College and Hospital, Sulur, Coimbatore for treatment.

Antenatal History:

Non-consanguineous marriage, healthy parents and no history of abortion or chronic illness. Mother had regular ante natal check-ups and no history of Rh incompatibility, hypothyroidism,

hypertension, jaundice, malnutrition, diabetes or infection during her pregnancy and had proper macro and micro nutrient supplements throughout the period. No history of mental stress was reported.

Natal History:

Patient is second child of parent, completed 35 weeks of gestation, weighed 3.5kg at birth. Delivery by LSCS due to lack of engagement of head. Post labour was uneventful.

Post Natal History:

No history of neonatal jaundice or severe diarrhoea post birth. Baby cried immediately after birth and breast feeding was started from the very first day. At age of 1 year, patient had a fall from bed, but there was no history of severe trauma. No other post-natal complaints were noted. The quantity of breast milk was insufficient, so formula milk (similac) was provided till 6 months along with breast feed. Weaning was started by the age of 6 months with rice. From 9th month formula milk was replaced with cow's milk.

Developmental History:**Gross Motor:**

MILE STONE	NORMAL AGE ³	ATTAINED AT
Neck holding	3 months	4 th month
Rolls over	5 months	7 th month
Sitting with support	6 months	8th month
Sitting without support	8 months	9 th month
Standing with support	9 months	1 year 2 months
Standing without support	12 months	Not attained
Walking without support	15 months	Not attained
Runs and explores drawers	18 months	Not attained

Fine Motor:

MILE STONE	NORMAL AGE	ATTAINED AT
Palmar grasp	6 months	9 th month
Pincer grasp	9 months	1 year
Scribbling, 2 blocks, turns book pages	15 months	Not attained
Scribbling, 3 blocks	18 months	Not attained
6 block tower	2 years	Not attained

Social and Adaptive:

MILE STONE	NORMAL AGE	ATTAINED AT
Social smile	2 months	2 nd month
Recognises mother and anticipates feeds	3 months	3 rd month
Recognises stranger, stranger anxiety	6 months	6 th month
Waves bye bye	9 months	Not attained
Comes when called plays simple ball games	12 months	1.5 years
Jargon	15 months	15 months
Copies parents in task	18 months	Not attained
Asks for food, drink, toilet and pulls people to show toys	2 years	Not attained
Share toys and knows full name and gender	3 years	-

Language:

MILE STONE	NORMAL AGE	ATTAINED AT
Alert to sound	1 month	1 month
Cooing	3 months	3 rd month
Laughs loud	4 months	4 th month
Mono syllable	6 months	7 th month
Bi syllable	9 months	10 th month (Stopped within 2 months)
1-2 words with meaning	12 months	Not attained
8 to 10 words with meaning	18 months	Not attained
2 to 3 word sentences using I, me, you	2 years	Not attained

Treatment History:

Occupational therapy was given for 3 months but only mild improvement like rare enunciation of maa, baa was elicited in speech

Physical Examination Findings at the time of admission (28/9/24):

Weight – 10.5 kg, Height – 86cm, Head circumference – 48 cm, Chest circumference – 53 cm, Child able to chew, maintains eye contact for a few seconds, Speaks rarely that too only monosyllable like ‘ma’ ‘ba’. But he does not follow instructions, difficulty in holding objects, cannot climb stairs, cannot express demands for food and toilet, fulfils his demands by crying, pointing – not present, not calling ‘amma’ or ‘appa’

Central Nervous System Examination:

Higher Mental Function: Conscious, alert, and oriented, Speech – very less, only monosyllable

Cranial Nerve Examination: No apparent cranial nerve palsy, 8th CN – turns to sound, 9th and 10th CN– gag reflex affected, 12th CN – no tongue atrophy or deviation, ptosis, and nystagmus – absent

Co-ordination: Finger nose test – unable to perform, Heel shin test - unable to perform
Sensations – intact

Motor System: Gait – not able to elicit, Posture – genu varum, Bulk – no atrophy or pseudo atrophy elicited, Tone – normal, Reflexes – exaggerated, Grip – weakness present

Diagnosis:

As per the clinical symptoms and ASQ 3 Questionnaire, the child is diagnosed with developmental delay.

1. SCORE AND TRANSFER TOTALS TO CHART BELOW: See ASQ-3 User's Guide for details, including how to adjust scores if item responses are missing. Score each item (YES = 10, SOMETIMES = 5, NOT YET = 0). Add item scores, and record each area total. In the chart below, transfer the total scores, and fill in the circles corresponding with the total scores.

Area	Cutoff	Total Score	0	5	10	15	20	25	30	35	40	45	50	55	60
Communication	25.17	0													
Gross Motor	38.07	0													
Fine Motor	35.16	0													
Problem Solving	29.78	0													
Personal-Social	31.54	0													

2. TRANSFER OVERALL RESPONSES: Bolded uppercase responses require follow-up. See ASQ-3 User's Guide, Chapter 6.

1. Hears well? Comments:	YES NO	6. Concerns about vision? Comments:	YES NO
2. Talks like other toddlers his age? Comments:	YES NO	7. Any medical problems? Comments:	YES NO
3. Understand most of what your child says? Comments:	YES NO	8. Concerns about behavior? Comments:	YES NO
4. Walks, runs, and climbs like other toddlers? Comments:	YES NO	9. Other concerns? Comments:	YES NO
5. Family history of hearing impairment? Comments:	YES NO		

ASQ-3 24 Month Questionnaire

OVERALL (continued)

3. Can you understand most of what your child says? If no, explain: ☐ YES ☒ NO
Can't speak more than one syllable.

4. Do you think your child walks, runs, and climbs like other toddlers his age? If no, explain: ☐ YES ☒ NO
Can't walk without support.

5. Does either parent have a family history of childhood deafness or hearing impairment? If yes, explain: ☐ YES ☒ NO

6. Do you have any concerns about your child's vision? If yes, explain: ☐ YES ☒ NO

7. Has your child had any medical problems in the last several months? If yes, explain: ☐ YES ☒ NO

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FINE MOTOR

- Does your child get a spoon into his mouth right side up so that the food usually doesn't spill? ☐ YES ☐ SOMETIMES ☒ NOT YET
- Does your child turn the pages of a book by herself? (She may turn more than one page at a time.) ☐ YES ☐ SOMETIMES ☒ NOT YET
- Does your child use a turning motion with his hand while trying to turn doorknobs, wind up toys, twist tops, or screw lids on and off jars? ☐ YES ☐ SOMETIMES ☒ NOT YET
- Does your child flip switches off and on? ☐ YES ☐ SOMETIMES ☒ NOT YET
- Does your child stack seven small blocks or toys on top of each other by herself? (You could also use spools of thread, small boxes, or toys that are about 1 inch in size.) ☐ YES ☐ SOMETIMES ☒ NOT YET
- Can your child string small items such as beads, macaroni, or pasta "wagon wheels" onto a string or shoelace? ☐ YES ☐ SOMETIMES ☒ NOT YET

FINE MOTOR TOTAL _____

PROBLEM SOLVING

Count as "yes" Count as "not yet" ☐ YES ☐ SOMETIMES ☒ NOT YET

- After watching you draw a line from the top of the paper to the bottom with a crayon (or pencil or pen), does your child copy you by drawing a single line on the paper in any direction? (Mark "not yet" if your child scribbles back and forth.) ☐ YES ☐ SOMETIMES ☒ NOT YET
- After a crumb or Cheerio is dropped into a small, clear bottle, does your child turn the bottle upside down to dump out the crumb or Cheerio? (Do not show him how.) (You can use a soda-pop bottle or baby bottle.) ☐ YES ☐ SOMETIMES ☒ NOT YET
- Does your child pretend objects are something else? For example, does your child hold a cup to her ear, pretending it is a telephone? Does she put a box on her head, pretending it is a hat? Does she use a block or small toy to stir food? ☐ YES ☐ SOMETIMES ☒ NOT YET
- Does your child put things away where they belong? For example, does he know his toys belong on the toy shelf, his blanket goes on his bed, and dishes go in the kitchen? ☐ YES ☐ SOMETIMES ☒ NOT YET
- If your child wants something she cannot reach, does she find a chair or box to stand on to reach it (for example, to get a toy on a counter or to "help" you in the kitchen)? ☐ YES ☐ SOMETIMES ☒ NOT YET

PROBLEM SOLVING TOTAL _____

PERSONAL-SOCIAL

- Does your child drink from a cup or glass, putting it down again with little spilling? ☐ YES ☐ SOMETIMES ☒ NOT YET
- Does your child copy the activities you do, such as wipe up a spill, sweep, shave, or comb hair? ☐ YES ☐ SOMETIMES ☒ NOT YET
- Does your child eat with a fork? ☐ YES ☐ SOMETIMES ☒ NOT YET
- When playing with either a stuffed animal or a doll, does your child pretend to rock it, feed it, change its diapers, put it to bed, and so forth? ☐ YES ☐ SOMETIMES ☒ NOT YET
- Does your child push a little wagon, stroller, or other toy on wheels, steering it around objects and backing out of corners if he cannot turn? ☐ YES ☐ SOMETIMES ☒ NOT YET
- Does your child call herself "I" or "me" more often than her own name? For example, "I do it," more often than "Juanita do it." ☐ YES ☐ SOMETIMES ☒ NOT YET

PERSONAL-SOCIAL TOTAL _____

OVERALL

Parents and providers may use the space below for additional comments.

- Do you think your child hears well? If no, explain: ☒ YES ☐ NO
- Do you think your child talks like other toddlers her age? If no, explain: ☐ YES ☒ NO
Does not say more than one syllable

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PROBLEM SOLVING (continued)

- While your child watches, line up four objects like blocks or cans in a row. Does your child copy or imitate you and line up four objects in a row? (You can also use spools of thread, small boxes, or other toys.) ☐ YES ☐ SOMETIMES ☒ NOT YET

PROBLEM SOLVING TOTAL _____

PERSONAL-SOCIAL

- Does your child drink from a cup or glass, putting it down again with little spilling? ☐ YES ☐ SOMETIMES ☒ NOT YET
- Does your child copy the activities you do, such as wipe up a spill, sweep, shave, or comb hair? ☐ YES ☐ SOMETIMES ☒ NOT YET
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- Does your child push a little wagon, stroller, or other toy on wheels, steering it around objects and backing out of corners if he cannot turn? ☐ YES ☐ SOMETIMES ☒ NOT YET
- Does your child call herself "I" or "me" more often than her own name? For example, "I do it," more often than "Juanita do it." ☐ YES ☐ SOMETIMES ☒ NOT YET

PERSONAL-SOCIAL TOTAL _____

OVERALL

Parents and providers may use the space below for additional comments.

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- Do you think your child talks like other toddlers her age? If no, explain: ☐ YES ☒ NO
Does not say more than one syllable

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COMMUNICATION (continued)

- Does your child correctly use at least two words like "me," "I," "mine," and "you"? ☐ YES ☐ SOMETIMES ☒ NOT YET

COMMUNICATION TOTAL _____

GROSS MOTOR

- Does your child walk down stairs if you hold onto one of her hands? She may also hold onto the railing or wall. (You can look for this at a store, on a playground, or at home.) ☐ YES ☐ SOMETIMES ☒ NOT YET
- When you show your child how to kick a large ball, does he try to kick the ball by moving his leg forward or by walking into it? (If your child already kicks a ball, mark "yes" for this item.) ☐ YES ☐ SOMETIMES ☒ NOT YET
- Does your child walk either up or down at least two steps by herself? She may hold onto the railing or wall. ☐ YES ☐ SOMETIMES ☒ NOT YET
- Does your child run fairly well, stopping herself without bumping into things or falling? ☐ YES ☐ SOMETIMES ☒ NOT YET
- Does your child jump with both feet leaving the floor at the same time? ☐ YES ☐ SOMETIMES ☒ NOT YET
- Without holding onto anything for support, does your child kick a ball by swinging his leg forward? ☐ YES ☐ SOMETIMES ☒ NOT YET

GROSS MOTOR TOTAL _____

"If Gross Motor Item 6 is marked 'yes' or 'sometimes,' mark Gross Motor Item 2 'yes.'"

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OVERALL (continued)

- Do you have any concerns about your child's behavior? If yes, explain: ☒ YES ☐ NO
- Does anything about your child worry you? If yes, explain: ☒ YES ☐ NO
Delayed growth than children of same age

Management:

During the first visit at hospital on 19/07/2024, Patient was prescribed with the following medication for 15 days.

- Saraswata arishtam (200ml)+ bala arishtam (50ml)+ dashamoola arishtam (50ml)+ jeeraka arishtam (50ml)+ Ashwa Gandha arishtam

(100ml)+ Yogendra ras (8)+ brihat vata Chintamani ras (8)+ Smriti sagara ras (8)+ kumara kalyanaka ras (8): 5ml-5ml-5ml-5ml [After Food]

2. Saraswata ghritam (50ml)+ brahmi ghritam (50ml)+ maha kalyanaka ghritam (50ml): 5ml-0-5ml [on empty stomach]

During the second sitting on 28/08/2024, Patient was prescribed with the following medicines for 30 days. Patient was Advised for IP admission on 28/09/25

1. Saraswata arishtam (200ml)+ mustarishtam (50ml) + Chandana asavam (50ml)+ saribadya asavam (50ml)+ Ashwa gandharishtam (100ml)+ Yogendra ras (8)+ kumara kalyana ras (8)+ brihat vata Chintamani ras (8): 5ml-5ml-5ml-5ml [After Food]
2. Saraswata ghritam + brahmi ghritam + maha kalyanaka ghritam: 5ml-0-5ml [on empty stomach]
3. Bala Ashwagandhadi kuzhambu + dhanwantara kuzhambu + maha masha tailam for external application

TREATMENT GIVEN – 1 st Sitting DOA- 28/9/24, DOD- 16/10/24	TREATMENT GIVEN – 2 nd Sitting DOA- 20/05/25, DOD- 30/5/25
EXTERNAL THERAPIES- 1. Abhyangam with bala ashwagandhadi tailam + mahamasha tailam× 8 days (Due to development of itching all over the body, nalpamradi tailam was added for abhyangam from 6th day) 2. Matra vasti with mahanarayana tailam +bala ashwagandhadi tailam× 19 days 3. Talam with amalaka + yashti madhu + musta + white butter ×17 days 1. Bamboo stick bandhanam with mahanarayana tailam× 17 days 2. Kovidara swarasa administered with honey× 17 days 3. Pichu whole spine with maha masha and bala ashwagandhadi tailam × 6 days INTERNAL MEDICATIONS- 1. Saraswata arishtam + mustarishtam + Chandana asavam + saribadya asavam + Ashwagandharishtam + Yogendra ras + kumara kalyana ras + brihat vata Chintamani ras	EXTERNAL THERAPIES- 1. Abhyangam with bala ashwagandhadi kuzhambu + mahamasha tailam + kayathirumeni tailam + dhanwantara kuzhambu× 11 days 2. Matra vasti with narayana tailam +bala ashwagandhadi tailam ×11 days 3. Talam with amalaka + yashti madhu + musta + white butter× 11 days 4. Shiro abhyangam with bala ashwagandhadi kuzhambu + mahamasha tailam + kayathirumeni tailam + dhanwantara kuzhambu× 9 days 5. Pratisaranam ×9 days 6. Navarathepu with dasamoola kashayam, bala kashayam, ashwagangha and masha kashayam ×7 days INTERNAL MEDICATIONS- 1. Saraswata arishtam + Abhaya arishtam + ashwagandha arishtam + brihatvata Chintamani ras + Yogendra ras 2. Saraswata ghritam + mahakalyanaka ghritam

2. Saraswata ghritam + brahmi ghritam + maha kalyanaka ghritam 3. Bala Ashwagandhadi kuzhambu + dhanwantara kuzhambu + maha masha tailam for external application DISCHARGE MEDICINES- 1. Saraswata arishtam + mustarishtam + Chandana asavam + saribadya asavam + Ashwa gandharishtam + Yogendra ras + kumara kalyana ras + brihat vata Chintamani ras ×30 days 2. Bamboo stick bandhanam with mahanarayana tailam ×30 days 3. Bala Ashwagandhadi kuzhambu + dhanwantara kuzhambu + maha masha tailam for external application× 30 days 4. Amalaka + musta + yashti madhu + butter - for talam× 30 days	+ dadimadi ghritam + brahmi ghritam 3. Tab. Smriti sagara ras 4. Bala ashwagandhadi kuzhambu + maha masha tailam + kayathirumeni tailam + dhanwanthara kuzhambu for external application. DISCHARGE MEDICINES- 1. Rasa sindooram + tamra bhasmam + abhraka bhasmam + siddha makradhwaj ras(10): 1 pinch After Food BD ×20 days 2. Saraswata ghritam (50ml)+ mahakalyanaka ghritam (50ml)+ dadimadi ghritam (50ml)+ brahmi ghritam (50ml): 1 tsp-0-1tsp [Before Food]×20 days
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Along with ayurvedic treatments following interventions were made like Paper blowing exercise, sucking through straw, chewing edible sticks, tongue exercises, attention improving activities were given, parent counselling also was done.

Assessment after the Treatment:

At the end of first IPD admission on 16/10/24- Patient was able to stand without support, wave bye-bye, walk 2-3 steps without support and was able to walk fast with support, drooling of saliva had reduced, recognition of care takers had improved, grip strength had improved.

At the time of second IPD admission on 30/05/25 – Patient eye contact – improved, response on name call – improved, walks

without support, climbs steps without support, tongue movement – forward protrusion improved, initiates speech when needs attention, blowing and sucking skills improved, shows initiative to play with toys, listens to rhymes and story books.

Discussion and Result:

The current study shows the effect of Ayurvedic treatment along with multidisciplinary intervention in the management of developmental delay. The patient presenting with delayed developmental milestones was prescribed with some ayurvedic treatment plans like Abhyangam, Matra Vasti, Talam, intake of swarasa, pichu, bandhanam, Shiroabhyangam, Navara thepu & Asya Pratisarana. After the first course of

treatment patient was able to stand without support with reduced drooling of saliva, wave a bye-bye, walk for 2-3 steps without support and was able to walk slightly faster with support, there was an improvement in the recognition of care takers, with improved Grip strength. The study shows a significant result in overall development of the child by the completion of second course of treatment with improved eye contact, walking without support, climbing steps, with better blowing & sucking skills etc, which included Ayurvedic treatments along with intervention of some exercises for improving the strength of facial muscles and tongue, attention improving activities & Parent counselling. Abhyangam shows effect in the improvement of muscle bulk & power, Talam with amalaka, yashti madhu, musta & navaneetam proves its effect on the development of higher mental functions including recognition of parents & waving a bye. Bandhanam adds its value by correcting the leg posture viz Genu varus. Pichu given with mahamasha tailam & balashwagandhadi tailam proves to be effective in providing strength to the lower limbs, Mukha & Shiroabyanagam helped in stimulating the blood supply & nervous activity hence improving the speech, sucking blowing & attention. Kovidara (Coccinia grandis) swarasa (having antioxidants like flavanoids, saponins, cardenolides shows effects on reduction in acetylcholine esterase activity, reduction in Lipid peroxidation level and increase in superoxide dismutase, glutathione and catalase in brain enhancing, learning and memory) ⁵ when administered along with honey helped reducing the drooling of saliva. Navara thepu being a

nourishing therapy helped in improving the motor activities of the child. Along with the external therapies, the internal medications including arishtam, ghritam & some rasa preparation proves to be effective in the development of milestones.

Saraswatharishtam contains Brahmi, shatavari, Swarna etc helped in cognitive functions, memory & speech improvement and active ingredients like eugenol, serine shows neuroprotective & neuroplastic activity.^{6,7}

Mustarishtam having Musta, Yavani, Ardraka and Chandanasava, Saribadyasava having Chandana, Musta, Pippali etc & Abhayarishtam containing Haritaki, Shunti, Dhanyaka etc, helped to tackle Agnimandya which is the main cause for every disease. As well as improved the strength & nourishment.

Aswagandharishtam acts as neuroprotective, enhances cognition & memory and reduces stress.⁸

Yogendra rasa acts as a Yogavahi (catalyst) when administered along with other drugs, Yogendra rasa, Kumar Kalyana rasa, Brihatvata Chintamani rasa containing Swarna Bhasma & Makshika Bhasma etc has neuroprotective & antioxidative properties, mitigates cell damage & has ability to cross BBB.

Smritisagara ras containing Shuddha Parada, Gandhaka & Haratala (Yogaratanakara Apasmara Chikitsa) helps in improving memory and acts against neuropathy.

Saraswatha ghritam, Mahakalyanaka ghritam, Brahmi ghritam & Dadimadi ghritam helps in speech development, enhances memory, strength, neuroprotective,

cures emaciation, improves digestion and being in ghritam form can cross BBB.

Bala Ashwagandhadi kuzhambu, Dhanwantara kuzhambu, Maha masha tailam having Bala, Ashwagandha, Dasamoola proves effective in providing bone & muscle strength and hence helps in locomotion.

Siddhamakaradhwaj ras contains Swarna Bhasma which helps in enhancing child's immunity, physical strength, metabolism, and intellect.

Tamra Bhasma has copper as its main ingredient which helps in brain development and gives effective anti-oxidative defence.

Abhraka Bhasma having mica, helps to treat brain and neuro-psychiatric disorders, neuralgia and ataxia conditions.

Rasa sindoor containing nyagrodha, gandhaka and abhraka helps to boost immunity and strength.

Conclusion:

An effective management of global developmental delay can be achieved using ayurvedic panchakarma therapy in combination with physical therapy and speech therapy. After the course of treatment, the patient's higher mental functions and motor activities have started developing. Walking without support, climbing stairs, sucking, blowing, initiating play, attention span and concentration, response to command have improved drastically. Hence, the appropriate internal medications, and therapies like basti, abhyangam, pichu, tala and bandhanam, can be utilized for proper management of

developmental delay with great results and no side effects.

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