

## PANDU (ANEMIA) IN CHILDREN AND ITS CORRELATION WITH PURISHAJ KRIMI (WORM INFESTATION)

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### ABSTRACT

**Background:** The word pandu in Sanskrit literature refers to Shweta, Peeta Sanwalit Shukla, either Ishat Pandu or Dhushar. The term pandu denotes a varna, or color, which can be In contrast to shankha, ketaki flower, pakwa madanphala, apakwa parushak phala etc. Many scriptures, including the Vedas and Puranas, include accounts about the origins of the term pandun Scriptures (Mahabharat), Samhitas. **Material and Method:** A comprehensive review of literature, including academic journals, books and online resources was conducted. Insights from experts in Ayurveda, traditional medicine and public health were also considered. **Result and Conclusion:** This article may aid in the management of the affected area or lessen its burden through the teaching and enforcement of routine deworming procedures for children, appropriate waste disposal techniques, and the adoption of more economical and hygienic eating habits in addition to improved nutrition.

**KEYWORDS:** pandu roga, anemia, krimi, Doshas.

### INTRODUCTION

Worldwide, anemia, also known as pandu, is a major health issue that affects people of all ages, including those in developed and developing nations, as well as those in preschool age, school age children, pregnant and non-pregnant women, males, and the elderly. Anemia is most commonly caused by iron deficiency; however, other illnesses such as hemoglobinopathies, intestinal parasite infections (Krimi), malaria, and other nutritional

disorders can also cause anemia. Reduced hemoglobin levels in the blood are referred to as anemia. In Ayurveda it is also known as Panduroga. It means pallor of the skin (Pale yellow). There are five different types of pandu roga: vata, pitta, kapha, sannipataj pandu, which is the fourth kind, and mridabhakshanjanya pandu, which is the fifth kind. Pallor on the skin is a prominent diagnostic feature of panduroga, a disease known for its predominant sign of panduta (Pallor) caused by a quantitative and qualitative deficiency of raktudhatu (Blood tissue), either in the form of hemoglobin or red blood cells (RBCs). The most prevalent infection in the world, intestinal worm infections primarily afflict impoverished and underprivileged societies. Most species that cause infections are *Ascaris lumbricoides* (Roundworm), *Trichuris trichiura* (Whipworm), and hookworms (*Ancylostoma duodenale* and *Necator americanus*). Worm infection can seriously jeopardize children's health, education, and productivity in addition to causing anemia, malnourishment, and poor mental and physical development.

## MATERIALS AND MATHODS

### Charaka samhita

The panduroga has been described in Chikitsa Samhita, according to Acharya Charaka. Panduroga can result from consuming large amounts of viruddha (Incompatible food), kshara (Alkaline food), lavanya (Salt), and amla (Sour or acidic food). as well Anger, fear, anxiety, and sexual desire are among the etiological factors of Pandu Roga, along with asatmya (wrong) eating and activity during the period of digestion of meals, diva swapna (Sleeping during the day), and suppression of natural drives. Based on factors that have an impact, Acharaya Charakahas classified Pandu roga into five categories:

- 1) Vataja,
- 2) Pittaja,
- 3) Kaphaja,
- 4) Tridoshaja (Sannipataja) and
- 5) Mritbhakshanajanyaja (Due to eating of mud)

### Mritbhakshanajanyaja pandu

A person who regularly consumes soil depraves the Vata; Ksharaguna and Kharaguna deprave the Pitta; and Madhuras vitiates the Kapha. Eating soil regularly blocks shrotas, causing bala (Strength), ojas, etc., and pandu roga to occur. Rupa of mritbhakshanajanyaja are as follows:

Atisara (Diarrhoea), Krimi Roga (Worm infestation) Shuna ganda, akshikuta, bhru (Swelling in cheeks, eyelid, and eyebrows) Shuna pannabhimehanah (Swelling in feet, umbilical region and genitals) Saasruk kaphanavitam (Stool contains blood and mucus).

### **Krimi in samhita**

Acharya Charak states that there are a total of twenty krimi found in the Charak Samhita. These krimi are divided into two categories: vikaraja (Pathogenic) and sahaja (non-pathogenic). The Krimi are referred to as Drishta and Adrishta in Vyadhirupiya Vimana. Further classification of Vikaraj Krimi was done into two categories: Abhyantara Krimi (Internal) and Bahya Krimi (External). There are two varieties of Bahya Krimi: Yuka and Pippalika.

Three subgroups of Abhyantara Krimi are distinguished: (1) Shleshmaja; (2) Raktaja; and (3) Purishaja.

### **Bahya krimi (External)**

The external krimi are mostly located on the body's outer regions, Including the skin, Hairs, lashes, Clothing, Loma and Shamashru, according to Acharya Charaka.

Charaka says that Yuka and Piplika are external krimas, but Acharya Vagbhatta thought that Yuka and Leeksha were, and Harita asserts that the bahya krimas are Yuka, Leeksha, Charmdi, Charmyukika, Binduki, Vartula, and Matkuna.

The three forms of Abhyantara Krimi are Purishaja, Shleshmaja, and Raktaj. In Dhamini, pakvashaya, amashaya, and rakhta vahini sira, these kinds of krimi can be found.

### **Sign and Symptoms of krimi**

Except for Charak Samhita, all the Ayurvedic Samhita has given explanations.

The general symptoms of krimi are: Vivarnata (Skin depigmentation), Shool (Pain), Hridroga (Cardiac disease), Daurbalata (Lassitude), Bhrama (Vertigo), Mandagni (Loss of appetite), Atisara (Diarrhoea), Chhardi (Nausea or vomiting), and Jatharagarjanam. (Bloating), fainting, malaise and Swasa (Dyspnoea).

**Sleshmaja krimi**

Except for Sushruta Samhita, the views expressed in Charak Samhita and other samhita are comparable to those of Sleshmaja Krimi. The upper gastrointestinal system, thorax, head, and neck are associated with the sleshmaja krimi. Yawning, sneezing, fever, dyspepsia, nausea and vomiting, emaciation, and bodily soreness and roughness are among the typical symptoms. The similarities plus a few more symptoms, such as a cold, cough, and heartissue, are also explained by Ashtanga sangraha. Acharya Sushruta states that shleshmaja krimi causes lung disease, thorax, eye, ear, nose, and lung disease with degeneration of the bone marrow, palate, and arms.

**Purishaja krimi**

These krimi are associated with an infection of the lower gastrointestinal tract, which can lead to anal pain and diarrhea, an oral cavity odor, a pilomotor reflex, and rough skin. Ashtanga sangraha clarifies that the gandupada krimi is the cause of certain moresymptoms including paleness of complexion, food aversion, cramping in the abdomen, weakness, cardiac issues, bloating, and diarrhea.

**Raktaja krimi**

These krimi are called Kustha Vishrapa and Pidika by Acharaya Sushuruta. In contrast, the Charaka Samhita describes it as "Kushthaik Karmanah" in one word. The symptoms of these krimi include hypersensitivity, prickling and itching pain, and erosion of the skin, muscles, cartilage, and veins when they grow extensively.

**Nidana**

Mridabhakshanjanya Those who are inclined to eat soil tend to develop pandu. Owing to ignorance, both young children and the elderly frequently consume dirt. The Kapha dosha is provoked by the dirt or soil of Madhura Rasa, the Pitta dosha is provoked by the earth or soil of Lavana rasa, and the Vata dosha is provoked by the earth or soil of Kasaya Rasa. Three forms of Pandu, namely Vatika, Paittika, and Kaphaja, arise from consuming soil. Although there are three Doshas associated with this illness, the primary cause of this particular sort of Pandu is ingesting soil. Because of this, this particular variety of pandu is classified differently in terms of its symptoms, indicators, and course of treatment. Harita describes the Rukshanah Proktah type of Pandu Roga, which causes dryness in the body. He describes five types of Bhoomi, including Krishna, Peeta Varnini, Rakta Varna, Shweta (Sita), and Neela Bhoomi. The rasa of Bhoomi can be identified by its color and the rasa of water present.

Gangadhar Roy explains that astringent earth aggravates Vata and Tridosha, leading to specific disorders and aggravating Doshas.

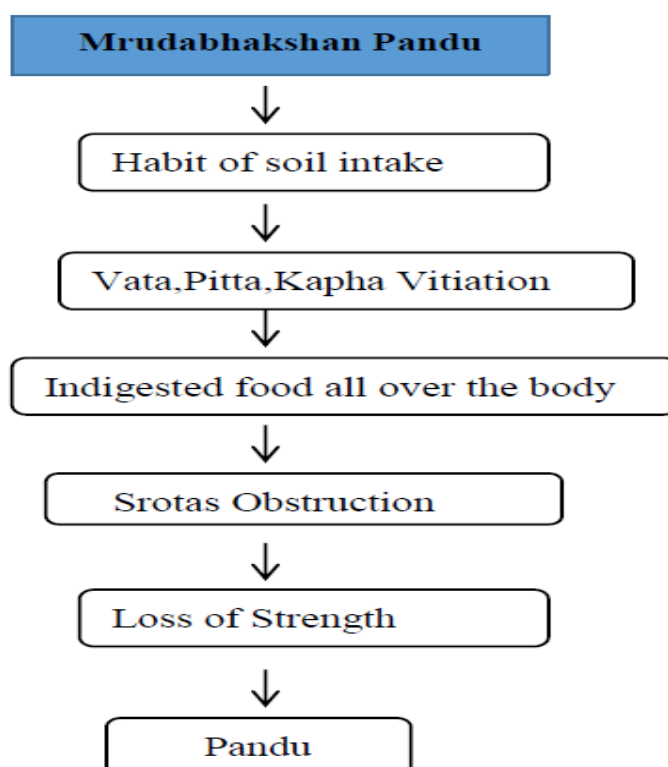
### Rupa

The Features of this type of Pandu are-

- Shuna ganda, akshikuta, bhru (Swelling in the cheeks, eyelids and eyebrows)
- Shhuna pannabhimehanah (Swelling in feet, umbilical region and genitals)
- Krimikoshtha (Worm infestation)
- Atisara (Loose motion)
- Sasruk Kaphanvitam (Stool being associated with blood and mucus)

### Mrudbhakshanajanya pandu's samprapti

When soil enters Amashaya, it creates Shagirvaivarnya and Dhatus Ruksha. by the "Jatharagni" for the Pachana, and it enters the Rasavaha Srotas in the same form that it was consumed. It then creates an obstruction in these Srotas, preventing the passage of any substance that is physiologically necessary. As a result, the patient's Indriyas are less able to appropriately and sincerely receive their own Arthas. Additionally, this harms Jathragni and Sattadhatu (satva).



**Overview of treatment for mrudbhakshanja pandu**

Children from marginalized social groups continue to suffer from worm infestations that cause a disproportionately higher morbidity and even mortality, despite the availability of increasingly effective and broad-spectrum anthelmintics in the last three to four decades. To close this enormous quality gap, a system of integrated prevention actions, specialized therapy, and group therapy is strongly recommended. It must be used universally, with robust community backing and continuing collaboration between physicians and other health care providers.

**Acharya charak**

Pandu can be treated based on the dosha according to a particular hetu (etiological variables). Typically, the Snehan and Shodhana (Vaman and Virechana) can treat Pandu roga. Following the snehan surgery, the patient was instructed to take emetic and cathartic medications (Shodhana) to help clear the body of dosha. After Shodhana, the patient should be given a full diet consisting of old shali rice, godhuma combined with Masoor (lentils), Mudga (green gram), Adhaki (pigeon pea), Yava (barley), mamsa rasa, etc. Particular medications should be provided based on the severity of the doshas. The patient with panduroga should be treated with panchgavya ghrita, kalyanak ghrita, and mahatikta ghrita for the treatment to be effective.

In addition to sneha dravya therapy for vataj pandu, medications for pittaj pandu administration include acrimonious and conserving drugs; for kaphaj pandu treatment, katu, ushna, and ruksha drugs are administered; and for sannipataj pandu treatment, several procedures were employed. Medical practitioners cure mridbhakshanajanya pandu roga based on dosha. To remove mud from the patient, they recommend tikshna shodhana and subsequently medicated ghrita to strengthen the body. According to Acharya Charaka, if a patient is unable to give up their habit of eating mud, they should be given a medication that includes clay combined with neem leaf, katurhini, vidanga, ela, Ativisha, Patha, Brihati fruit, Indrayava, or murva (Chikitsa Sthana 16/117-122).

**Sushruta samhita**

Acharya Sushruta describes the panduroga in Uttartantra (Chapter 44). Panduroga's synonyms are Kamala, Kumbhahvaya, Apanaki, Laghavaka, and Alasakhya. There are four varieties of panduroga according to Sushruta: 1) Vataja, 2) Pittaja, 3) Kaphaja, and 4) Sannipataj, which is also explained by Acharya Charak. Comparing panduroga Nidana

Samprapti (etiopathogenesis) to Charaka Samhita and Sushruta Samhita reveals many parallels. Many herbo-mineral preparations, including Lauha (iron) and Mandura (rust of iron), can be used to treat panduroga, according to Acharya Sushruta. Chikitsa Sthana mentions treating all kinds of upadrava in the same way. (Uttar tantra 44/42).

### Ashtanga sangraha

Acharya Vagbhatta is the author of Ashtanga Sangraha. In Chikitsa Sthana (8/67) and Nidana Sthana (13/17-21), rishis have provided descriptions of panduroga symptoms, treatments, and kinds of the disease. These descriptions are likewise followed by Acharya Charaka and Acharya Sushruta.

### Treatment of krimi

According to Acharya Charak the treatment of krimi is done by the three basic methods:

- 1) Apakarshana (Elimination of dosha by the vamanadi panchkarma methods)
- 2) Prakritivighata (Demolition of pathogenesis)
- 3) Nidana parivarjana (Nonexistence from etiology)

1) **Apakarshana:** These krimi are called Kustha Vishrapa and Pidika by Acharya Sushruta. In contrast, the Charaka Samhita describes it as "Kushthaik Karmanah" in one word. The symptoms of these krimi include hypersensitivity, prickling and itching pain, and erosion of the skin, muscles, cartilage, and veins when they grow extensively.

(i) **Vamana:** Vaman is the process by which the higher srotas eliminate vitiated doshas. When the kapha becomes corrupted, it creates the amashaya, which then produces the kaphaja vikara and kaphaja krimi. With the use of vaman treatment, these are ended.

(ii) **Virechana:** The purpose of virechana is to eliminate vitiated doshas from the area of the gastrointestinal tract. The medications utilized in this karma should be krimighna, possessing the purgative properties that aid in eliminating intestinal parasites and clearing their intestines.

(iii) **Shirovirechan:** Shirovirechan sanshodhan karma is the process of clearing the dosha from the head (sinus) by means of the nasal tract. The medications ushna guna and katu tikta rasa are used in this, affecting the nasal mucosa and causing it to exude vitiated materials. This process gets rid of the vitiated dosha and krimi.

2) **Asthapana basti:** The procedure known as asthapana basti is done to remove the krimi from the big intestine. The Karshan Guna, which is administered and reachable by



Kashaya Dravya, at the parasite's location and stop krimi's growth and activity. There are three different kinds of bastis: Anuvasana, Asthapana, and Uttara. The significance of asthapana basti in krimiroga has been proposed by acharyas.

- 3) **Prakriti vighata:** The Vinasha of Utpadaka Karana is called Prakriti Vighata. Following the dosha extermination, mala sanghata and krimi are obtained via sanshodhan chikitsa. The krimi may return if the prakriti is not altered. Using medications that prevent the growth of krimi, which have an aversion to kapha, and purifying for prakriti vighata is the suggestion given by Acharya Charak.
- 4) **Nidana parivarjana:** The primary Ayurvedic idea of nidana parivarjana is its emphasis on the significance of ahara and vihara, or daily lifestyles. It is employed to stop the causal variables, which aids in the creation of krimi. The writings mention other forms of ahara, including kapahavardhaka ahara, madhura, dugdha, dahi, snigdha, divashayana, and others, all of which should be avoided as they are the cause of krimiroga.

## DISCUSSION

We can therefore deduce that the vitiation of Tridosha with a predominance of one of the Doshas is the problem of Mrudabhakshanjanya Pandu Rog. Worm infestations and their manifestations account for the majority of traits. Mrudabhakshanjanya Pandu Roga can be effectively treated with ayurvedic medicine.

## CONCLUSION

This article may aid in the management of the affected area or lessen its burden through the teaching and enforcement of routine deworming procedures for children, appropriate waste disposal techniques, and the adoption of more economical and hygienic eating habits in addition to improved nutrition.

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