

# Neonatal worm infestation: a rare entity

## Abstract

Worm infestation is very common in school going children especially in developing country but it is rarely seen in infancy or neonates. We present a case of Neonatal *Enterobius vermicularis* infestation manifesting as anemia and poor weight gain.

**Keywords:** neonate, worm infestation, anaemia, nutrition assessment

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## Introduction

Worm infestation is a common health problem seen both in tropical and subtropical countries. Nearly 7% of Indian population is known to be infested with hookworms. The incidence is much higher in children with around 2million children under the age of 4years having hookworm infection.<sup>1</sup> It may be explained by their frequent contact with the soil that is contaminated with the eggs. However Neonates are mostly indoors and hardly have any such contact. There are very few case reports reporting worm infestation in infants or neonates<sup>2-7</sup>. *Enterobius vermicularis* (E V) is a white slender nematode with a pointed tail. In humans, they reside in the cecum, appendix, and ascending colon.<sup>8</sup> The life cycle takes place within the lumen of the gastrointestinal tract.<sup>9</sup> Ingested eggs hatch in the stomach and upper small intestine leading to larval forms which migrate to the ileum, caecum, and appendix. After moulting twice they become adults. Adult females settle in the lower ileum, caecum, appendix or ascending colon leading to ulcerations at the site of attachment causing haemorrhage and secondary infection. Four methods of transmission exist:

- direct infection by fingernail contamination or autoinfection
- Exposure to viable eggs on soiled bed linen and other contaminated environmental objects
- By contaminated dust containing embryonated eggs
- Retrograde infection; after hatching on the anal mucosa, larvae migrate into the sigmoid colon, and caecum.<sup>4-8</sup> We present a Neonate with *Enterobius vermicularis* infestation causing poor weight gain and blood in stools.

## Signs and symptoms<sup>10-12</sup>

The most common symptoms are itching mostly at night, in and around the anus and around the perineum and is caused by the female pinworms migrating to lay eggs around the anus. The mechanisms causing this intense pruritus have not been explained. The itching leads to continuously scratching the area around the anus, which can further result in tearing of the skin and complications such as secondary bacterial infections. Other symptoms include, insomnia and restlessness. A considerable proportion of children suffer from loss of appetite, weight loss, irritability, emotional instability, and enuresis.

## Diagnosis<sup>13-15</sup>

Eggs are invisible to the naked eye, but they can be seen using a low-power microscope. Adult pinworms are clearly visually detectable,

usually during the night when they move near the anus. Transparent adhesive tape applied on the anal area will pick up deposited eggs, and diagnosis can be made by examining the tape with a microscope. This test is most successful if done every morning for several days, because the females do not lay eggs every day, and the number of eggs vary.

Pinworms do not lay eggs in the faces. As such, routine examination of faecal material gives a positive diagnosis in only 5 to 15% of infected subjects, and is therefore of little practical diagnostic use. In a heavy infection, female pinworms may adhere to stools that pass out through the anus, and they may thus be detected on the surface on the stool. Adult pinworms are occasionally seen during colonoscopy. On a microscopic level, pinworms have an identifying protruding ridges running the length of the worm.

## Treatment<sup>16</sup>

The treatment of *E. vermicularis* is one dose of pyrantel pamoate 11mg/kg, or mebendazole 100mg, or albendazole 400mg orally with a second dose in 2weeks to treat possible reinfection. It is also recommended that family members be treated to eliminate asymptomatic reservoirs.

## Case report

**Case:** A preterm male neonate weighing 1.2kg was admitted in NICU for respiratory distress and was started on oxygen therapy and intra venous fluids. His APGARS were 7/7/8. There was no history of any significant illness in mother and there was no history suggestive of chorioamnionitis. Chest X ray done was normal. Baby began to improve with oxygen and tube feeds were started at 12hours of life. Oxygen was stopped by 24hours. On day 2 baby was on full feeds. Baby was shifted to mother side for KMC on day 3. Baby was accepting feeds well and had no other complains. Baby was kept under observation and subsequently on examination there was only 40grams weight gain over next 3weeks. Baby was evaluated with septic screen which was negative (CRP- 0.8mg/dl, leucocyte count 8,600/mm<sup>3</sup>) Electrolytes (Na 138, K 4.2meq/l), Urine examination, Renal Function Test (Urea 28mg/dl, creatinine 0.6mg/dl), 2D Echo all were normal. Systemic examination was normal. Feeding was checked for quantity and technique. Baby was getting exclusive breast feeds with human milk fortifier. ABG was also done and urine output was monitored, both were normal. Ph was 7.36 and urine output was 2.5ml/kg/hour. Stool output was also normal. Haemoglobin done was low with a haematocrit of 25% at 21days of life. There was no jaundice and no evidence of haemolysis. Platelet count done was also normal with a

value of 2.6lac/mm<sup>3</sup>. Malaria was also ruled out in view of anemia. Careful history was sought from parents and mother gave history of passing some worms in stools by the neonate (Figure 1). A clinical diagnosis of *Enterobius vermicularis* infestation was made. Stool sample sent was positive for eggs of *Enterobius vermicularis* and for occult blood. A single dose of Albendazole 200mg was given to the baby. Subsequently in next 10 days baby had weight gain of around 100grams and was discharged. On follow up baby had weight gain of 110grams in a week.



**Figure 1** Enterobius vermicularis in a Neonate.

## Conclusion

Young infants coming from low socioeconomic families, having poor environmental hygiene and sanitation and presenting with poor weight gain and severe anaemia, should be suspected of having worm infestation if there is no other findings. The disease can be managed effectively through simple and well known intervention strategies.

## Contributors' statement page

Dr. Pandita conceptualized and designed the study, and drafted the initial manuscript.

Dr. Kishour reviewed and revised the manuscript.

Dr. Dharti critically reviewed the manuscript.

All authors approved the final manuscript as submitted and agree to be accountable for all aspects of the work.

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## Conflicts of interest

Author declares there are no conflicts of interest.

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