



## Case Report

# Banana fibers camouflaging as a gut worm in a 6-month-old infant

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### ABSTRACT

Worm infestation issue is a common health condition observed mostly in Asian countries. The prevalence of worms in children is higher due to the habit of playing in mud or outdoors which is not found in the case of an infant. Very rarely worm infestation is observed in infants. There is a need for an investigation to be carried out for live worms in the stool. Sometimes the change in the diet of the infant, irregular bowel movements, and worm-like things in stool makes an alarming situation. We report the original case of a 6-month-old infant camouflaging for worm infestation due to the presence of the thread-like parasite in stool. The routine stool and chemical analysis of black thread thing from stool revealed solid diet fibers of banana and not any parasitic infection.

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## 1. INTRODUCTION

Worm infestation issue is a common health condition observed mostly in Asian countries. Almost 7% of the Indian population is found to be manifested by the hookworms [1]. The occurrence of live worm is higher in children under the age of 4 years as compared to an infant. Moreover, the prevalence of worms in children is higher due to the habit of playing in mud or outdoors which is not found in the case of the infant [2]. The infant needs more parental care so rarely found to have contact with external surrounding contact. Very rarely worm infestation is observed in infants. Sometimes investigation is needed to be carried out in case of live worms observed in stool or due to change in the bowel movements [3]. Sometimes the

change in the diet of the infant, irregular bowel movements and worm-like things make an alarming situation. The investigation of the stool for worms becomes mandatory if the re-occurrence of the same passing of stool from the infant persists for consecutive days. Thus, the history of infant diet and symptoms along with the routine stool analysis is needed to be monitored thoroughly before the conclusion. Many times physicians observed to give many new probiotics formulations to infants to resolve the gastrointestinal discomfort [4-10].

## 2. CASE REPORT

A 6-month-old infant with no pathological medical history was observed with frequent diarrhea like condition and

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suspected parasite (black long thread-like thing) in the stool (Figures 1 and 2). Before the health issue, history says that the baby was introduced with a solid diet which included the fruit like a banana. Screening for worms in the stool was negative. The infant was otherwise asymptomatic for other medical conditions, and the results of physical examination were normal. This case was unique as no parasites were found. Further, the thread-like substances from infant stool were examined under a microscope and compared with a sample taken from a banana. Based on the diet history, Schultze reagent (oxidizing mixture consisting of a saturated aqueous solution of potassium chlorate  $KClO_3$  and varying amounts of concentrated nitric acid  $HNO_3$ ) was used to analyse the presence of banana fibers and was found positive. No recurrence of black threads (Figure 2) has been noted after the change of diet from banana to another solid diet along with breast milk.



**Figure 1:** The thread-like pattern observed in the infant stool, day-1



**Figure 2:** Minute black fibers observed in the infant stool, day-2.

### 3. DISCUSSION

The appearance of the banana fibers in the stool mimicking parasite appears surprisingly without knowing the infant diet history. Banana contains cellulose as a major fiber type [11]. This case study deletes the misconception of having intestinal parasites at first sight by the appearance of thread-like parasites in the stool. Ultimately in the infant, the mature worm is found attached to the gut wall and thus during their life cycle are rarely observed in the stool; diagnosis depends on finding and microscopic identifying of worm eggs in the stool. This makes a proper diagnosis of worms [1]. Similarly, the roundworm, *A lumbricoides*, is asymptotically observed in the stool late as the worm. On the contrary, the tapeworm is also a sizable intestinal parasite that is usually observed asymptomatic, results in gastrointestinal symptoms. Mostly, roundworms and tapeworms are observed as mung bean sprouts which is confirmed by further diagnosis during stool investigational studies [12].

During investigating stool contents, the negative result for parasitic infections and the appearance of the thread-like structural suspect are evaluated by a careful history of the infant's diet. The history of consumption of banana diet fiber was first time evaluated by chemical analysis using Schultze reagent. Various cases were reported for black fibers by consumption of food by infant and were found negative for parasite infestation without proper conclusions. We proved by chemical analysis that banana fibers remain undigested fibers resembling a worm-like structure. Thus, infant history helps to solve many health issues during the diagnosis of gastrointestinal disorders.

### 4. CONCLUSIONS

As rare as it is, the worm infestation is observed in infants but most of the time the history of infant diet reveals the clinical conditions. The fruits like banana contain the fibers that are not digested and observed as black threads resembling the parasite sometimes in infants.

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## 5. REFERENCES

1. Nampijja M, Auple B, Lule S, Akurut H, Muhangi L, Webb EL, et al. Effects of Maternal Worm Infections and Anthelmintic Treatment during Pregnancy on Infant Motor and Neurocognitive Functioning. *J Int Neuropsychol Soc.* 2012;18(6):1019-30. doi: 10.1017/S1355617712000768.
2. Digra KK, Pandita D, Pandita A. Neonatal Worm Infestation: A Rare Entity. *J Pediatr Neonatal Care.* 2017;6(3):00242. doi: 10.15406/jpnc.2017.06.00242.
3. Leung FH, Watson W. The parasite that wasn't: a case of mistaken identity. *Can Fam Physician.* 2011;57(10):1145-7.
4. Patil A, Disouza J, Pawar S. Shelf life stability of encapsulated lactic acid bacteria isolated from Sheep milk thrived in different milk as natural media. *Small Rumin Res* 2019;170:19-25. doi: 10.1016/j.smallrumres.2018.09.014.
5. Patil A, Disouza J, Pawar S. Granules of unistain lactobacillus as nutraceutical antioxidant agent. *Int J Pharm Sci Res.* 2017;9:1594-9. doi: 10.13040/IJPSR.0975-8232.9(4).1594-99.
6. Patil A, Disouza J, Pawar S. Health benefits of Probiotics by Antioxidant Activity: A review. *Pharma Times.* 2018;50:1-3.
7. Patil A, Disouza J, Shivaji Pawar. Probiotic potential of *Lactobacillus plantarum* with the cell adhesion properties. *J Glob Pharma Technol.* 2018;10(12):1-6.
8. Patil A, Pawar S, Disouza J. *Lactobacillus rhamnosus* ARJD as a Functional Food with Potential Antioxidant and Antibacterial Abilities. *Acta Scient Pharm Sci.* 2019;3(8):63-70. doi: 10.31080/ASPS.2019.03.0341.
9. Patil A, Disouza J, Pawar S. Evaluation of *Lactobacillus plantarum* growth in milk of Indian buffalo breeds based on its physico-chemical content. *Buffalo Bull.* 2019;38:345-52.
10. Patil A, Dubey A, Malla MA, Disouza J, Pawar S, Alqarawi AA, et al. Complete Genome Sequence of *Lactobacillus plantarum* Strain JDARSH, Isolated from Sheep Milk. *Microbiol Resour Announc.* 2020;9(2):e01199-19. doi: 10.1128/MRA.01199-19.
11. Young TP. Banana Fibers Masquerading as Worms in the Stool of a 14-Month-Old Girl. *Clin Pediatr (Phila)* 2015;54(4):382-3. doi: 10.1177/0009922814533409.
12. Kutty PK. Breastfeeding and risk of parasitic infection-a review. *Asian Pac J Trop Biomed* 2014;4(11):847-58. doi: 10.12980/APJTB.4.201414B355.