

## Case Report

# A rare and interesting case of Scarabiasis

Sangeetha Merrin Varghese<sup>1\*</sup>, Austoria A. J.<sup>2</sup>, Manju Koshy<sup>3</sup>, Jithin Mathew Abraham<sup>4</sup>

<sup>1</sup>Department of Community Medicine, Believers Church Medical College, Thiruvalla, Kerala, India

<sup>2</sup>Department of Community Medicine, Sree Mookambika Institute of Medical Sciences, Kulasekaram, Tamil Nadu, India

<sup>3</sup>Department of Biochemistry, Believers Church Medical College, Thiruvalla, Kerala, India

<sup>4</sup>Department of Anaesthesiology, Believers Church Medical College, Thiruvalla, Kerala, India

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### \*Correspondence:

Dr. Sangeetha Merrin Varghese,

E-mail: [sangjithin2011@gmail.com](mailto:sangjithin2011@gmail.com)

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### ABSTRACT

Scarabiasis or Canthariasis or Beetle disease is an ectoparasitic infection of the gastrointestinal tract, in which the beetles temporarily infest the digestive tract and rarely the urinary tract. Dung beetle belongs to Scarabaeidae family. It is mostly seen in children aged between 2 to 5 years, who play outdoor for prolonged hours without undergarments. It is a temporary infestation in which early stages of development of beetle takes place in the anus and the adult beetle flies, out of the anus while defecation. A boy aged 3 years and four months presented to the pediatric OPD with complaints of peri umbilical abdominal pain, vomiting, nausea, mucus in stool along with “black insects” in his stool. The clinical examination revealed that the pulse rate, blood pressure and temperature were normal. Per rectal examination and ultrasound of the abdomen was normal. Routine examination of stool and urine was also found to be normal. The beetle was identified by the medical entomologist as dung beetle belonging to family Scarabidae. This report implies that the boy had an infestation with the larvae of dung beetle in the gastro intestine. The family belonged to the high range area of Mundakayam. Agriculture is the main source of income for people and main plantation being Rubber. Natives breed cattle for their livelihood and agriculture. During contact with mud or while playing outdoors naked, he would have come into contact with the eggs or the beetle, which hatched into larvae and caused canthariasis.

**Keywords:** Canthariasis, Dung beetle, Larvae, Saline purgative, Scarabiasis, Scarabid

### INTRODUCTION

Dung beetles (family Scarabaeidae) are one of the largest families of beetles worldwide. Animal dung, especially cattle droppings, has long been regarded to serve as food and microhabitat for both adult and larval stages of beetles.<sup>1</sup> This biological behavior will bring dung beetles in close contact with parasites eggs in human and animal excreta on the ground. Scarabiasis or Canthariasis or Beetle disease is a condition in which the beetles temporarily infest the digestive tract and rarely the urinary tract. Scarabs usually fly away from the anus after defecation.<sup>2</sup> Insectal diseases such as myiasis, scoleciasis and canthariasis are the

infestations of the living or dead tissues of live vertebrates by developing larvae of the insects. Canthariasis, the second important insectal disease, after myiasis and can infect gastrointestinal tract, urogenital system, nasal sinuses, ears and faces of mammals.<sup>3-5</sup>

Dung beetle infestation has been reported from tropical countries like India (north-east) and Sri Lanka.<sup>3,6</sup> There are some reported cases as mentioned in the literature from as early as 1976 from Kerala (South India), and also recently from Tamil Nadu.<sup>2,7</sup> Dung beetles are useful in making the soil more fertile as it rolls out very small pieces of cow dung (which is commonly seen close to cattle sheds) and stores it

by burying it in different spots thus spreading the organic manure and helping in nutrient recycling.<sup>8</sup> The beetle can survive in that mass for the whole life. Once it infests the intestine, they can complete the whole life cycle in the human intestine, as the Beetle adapts to the medium here which is somewhat similar to its natural habitat.<sup>6</sup> The mode of infestation is still a controversy. Most suggested one is that of the larvae of the beetle crawling in through the unprotected anus of the naked child playing in the infected soil and cow dung mixture. Another view is that of the adult beetle climbing the anus at the gravid stage and laying eggs inside, which later develops into adult beetle and flies away. Faeco-oral route of egg, getting into the intestine cannot be ruled out.<sup>3,6</sup>

In this case report, we describe a rare case of Scarabiasis caused by the infestation of dung beetle larvae in a three- and half year-old boy, presented to the pediatric OPD of Government Medical College, Kottayam.

## CASE REPORT

A child of 3 years and four months, belonging to a middle class family was brought to the pediatric OPD in March 2016 with complaints of passing live black insects in stool, peri umbilical abdominal pain, nausea, vomiting and mucus in stool. Four months back, mother incidentally noticed two black insects coming out of the stool when he defecated in the open. The stools were hard in consistency and the insects were emerging out of it. Although she was curious, she thought that the beetles were probably already present on the ground before passing the stools. The very next day, mother asked the child to defecate in the open area after making sure that there were no insects on the ground and to her relief, there were no black insects in stool.

Two to three weeks later, she again noticed 5 beetles in stool. She immediately took the child to a private hospital, but they didn't believe the story and sent them back. The complaints persisted on and off for 3 months and they consulted two other pediatricians in this period, but they too sent them back. During this time, the mother also checked the stools regularly for the black insects. Then one day, the child started complaining of abdominal pain. He had a lack of appetite too. These complaints persisted for about 2 weeks, followed by 2 episodes of vomiting and 3 episodes of loose stools with mucus and 1 episode of black insects in stool. The mother desperate to show the doctors that the insects were really coming out of the stool, caught a beetle that flew out of the child's anus and brought it along with the child to the pediatric OPD of Government medical college, Kottayam.

- No history of fever
- No history of itching sensation anywhere on the body nor in the peri-anal region.
- No complaints of blood in stools
- No history of pain while passing faces
- No history of constipation

- No history of fecal incontinence
- No history of urinary problems
- No history of eating insects or hiding insects

## Past history of asthma present

### Personal history

The child was given a bath twice daily. He used to wash hands before meals. However, he often practiced open defecation and also played on the ground without wearing any trousers or undergarments. He also occasionally drank raw cow's milk without boiling.

## No history of similar incident in other family members

### Environmental findings

Lives in a house with cemented floor and tiled roof. Do not have cattle shed and there are no pets at home.

### Examination findings

Weight and Height- normal for age. Per rectal examination and ultrasound of the abdomen was normal. Routine examination of stool and urine was found to be normal.

### Treatment

Oral Metronidazole and saline purgatives were given.

## DISCUSSION

Scarabiasis or Canthariasis is a rare condition but an important insectal disease in human caused by the beetles (coleopteran insects) or their larvae.<sup>9</sup> The boy belonged to Mundakayam, a town in Kanjirappally Taluk in the Kottayam District of Kerala. It is the doorway to the high ranges of southern Kerala and is a land of coffee, pepper, cocoa and natural rubber. Agriculture is the main source of income for the people. The family did not own cattle shed and had no pets at home. However, natives bred cattle for their livelihood and for agriculture.

Although the child was well nourished and maintained good personal hygiene, he was kept half naked for most of the day and played in the soil. Being an agricultural community, the soil getting mixed with cow dung was common, as they stored cow dung for agriculture purposes.

Loss of appetite, diarrhea and abdominal pain are the common symptoms.<sup>2,6</sup> In India maximum number of cases have been reported from North-Eastern states like West Bengal and Tripura.<sup>3</sup> The proposed possibility of human infestation was the entry of the larvae through the anus and its development in the rectum into adult beetles which then escape and fly out of the anus. It is also hypothesized that, the adult beetles are attracted to the peculiar odor of faeces of some children and enter the

rectum through the anus of children sleeping on the floor close to cattle shed, without underclothes.



**Figure 1: Mundakayam area of Kottayam in Kerala map (courtesy- central survey office).**



**Figure 2: The live beetle (Scarabid) that flew out of the child’s anus (courtesy Dr. Jithin Mathew Abraham).**

They do not actually colonize the gut, as no larvae or eggs have been detected in the stools. The beetle simply stays inside the lower G.I. tract and exits. The beetles are

ectoparasites and hence they do not invade the mucosa.<sup>2</sup> The beetle was identified by the medical entomologist as the dung beetle (Figure 2: Photograph of the beetle that was isolated from the child) belonging to family Scarabaeidae. Prevention is by proper underclothing and not allowing the child to play in contaminated soil.

**CONCLUSION**

The idea behind presenting this interesting case is to highlight the fact that such infestations still occur in forward states like Kerala and the need to think and act rationally when such a case is presented. This case report also highlights the need of making toddlers wear underclothes especially while playing on the ground and to strictly avoid the practice of open defecation even by infants and toddlers.

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