Isolation of a Single Live Adult Male Round Worm from Ectopic Site during Autopsy

S.S.Raut[1],V.V.Rajhans[1], V.S.Rathod[1], S.R.More[1], H.V. Godbole[2], M.D. Dake[2], V.M.Gujar[1], S.B.Madewad[2]
[1].Department of Microbiology, Dr.S.C.G.M.C. Nanded, Maharashtra, India
[2].Department of Forensic Forensic medicine and toxicology, Dr.S.C.G.M.C. Nanded, Maharashtra, India

Case Report

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ABSTRACT

Ascaris lumbricoides-commonly known as round worm- is cosmopolitan, having world-wide distribution, especially prevalent in the tropics like India. The incidence of round worm infection can go as high as 80-100% in rural areas with poor sanitation.

The adult worm commonly lives in the small intestine, 85% in jejunum and 15% in ileum, retaining its position by the virtue of its own muscle tone. But it is also a restless wanderer, showing great inquisitiveness as it tends to probe itself into any aperture it may find on the way. So, although rare, it is possible to come across this commonest and largest intestinal nematode at some odd sites.

We, hereby, are reporting a rare case of recovering a live adult round worm from bronchial tree during autopsy. A 60 years old female patient died in this hospital while under treatment for acute gastro-enteritis with fractured femur.

As this case was registered as a medico-legal case, a medico-legal-autopsy was done as per rule. During the routine examination of lungs, a live worm was observed in the right bronchus just below the tracheal bifurcation. Careful examination of the worm revealed it to be an adult, male round worm, Ascaris lumbricoides.

Other findings in trachea, bronchus and lung were normal, especially no signs of chocking were seen. The diseased was a beggar. Nutritional status and personal hygienic status was very poor. It is quite possible to acquire round worm infection in such scenario.

Keywords : *Ascaris lumbricoides*, medico-legal-autopsy, acute gastro-enteritis, round worm infection.

INTRODUCTION:

Nematodes are probably the most abundant and wide spread animal group often occurring in huge numbers in very diverse environments[1]. The largest number of helminthic parasites of human beings belongs to the class of nematodes and Ascaris lumbricoides is the most common of human helminthic parasites[2].

Ascaris lumbricoides- commonly known as round worm- is cosmopolitan, having worldwide distribution, especially prevalent in the tropics like India.

The calculated global mortality from ascariasis was about 20,000 (mainly to intestinal complications) and morbidity about 10, 00,000 cases (mainly to malnutrition and pulmonary complication)[3].

The adult worm commonly lives in small intestine, 85% in jejunum and 15% in ileum, retaining its position by the virtue of its own muscle tone. But it's also a restless wanderer, showing great inquisitiveness as it tends to probe itself into any aperture it may find on its way[2, 4].

So, although rare, it is possible to come across this commonest and largest intestinal nematode at some odd sites.

We, hereby, are reporting a rare case of recovering a live adult round worm from bronchial tree during autopsy.

CASE HISTORY

A 60 years old female patient died in this hospital while under treatment for acute gastro-enteritis with fractured femur. As this case was registered as a medico-legal case, a medico-legal-autopsy was done as per rule. During the routine examination of lungs, a live worm was observed in the right bronchus just below the tracheal bifurcation.

THE WORM THAT WAS FOUND

The body of the worm was cylindrical, tapering gradually at one end, somewhat less so on the other. Colour was pin kish cream. A lateral line was seen

*Corresponding author:
Dr. S.S.Raut
Department of Microbiology, Dr.S.C.G.M.C. Nanded, Maharashtra, India.
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as a whitish streak along the entire length of the body.

Figure 1:
Total length was 18 cm, and diameter was 3-4 mm. The posterior end was slightly curved. Vulvar waist was absent.

Depending on these observational findings, the recovered worm was confirmed to be an adult male of ascaris lumbricoides.[2, 3, 4, 5]

Figure 2:
Other findings in trachea, bronchus and lungs were normal, especially; no signs of chocking were seen.

After recovery of the above mentioned worm, all other probable sites in the body were inspected carefully. No any other worm was recovered from the Gastro intestinal tract or any other ectopic site. Intestinal contents, especially from the jejunum and the ileum were examined macroscopically and microscopically. Neither the worm nor the eggs of round worm were seen.

OTHER SIGNIFICANT FINDINGS

Old, unhealed and probably uncared infected wounds were observed on the body. The largest was over the pubic area, measuring 5 inch by 2 inch, tissue deep and it was foul smelling.

Neck of the left femur bone was found fractured. Left tibia too was fractured at junction of middle and lower 1/3rd.

Around 100ml of yellowish foul smelling purulent fluid was obtained from peritoneal cavity.

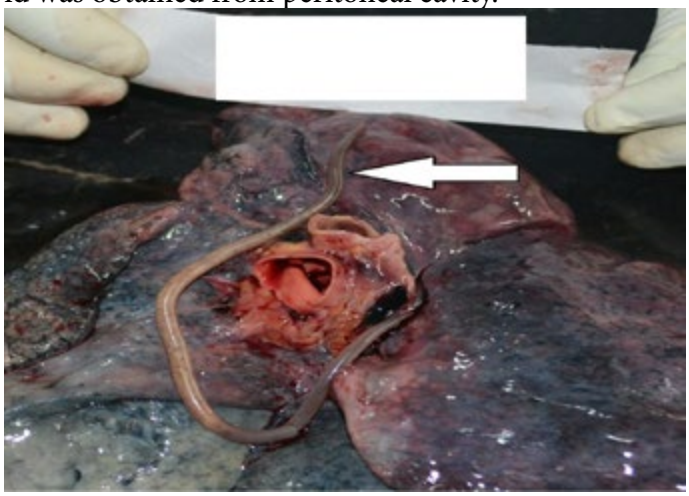

Figure3:

DISCUSSION

The diseased was a beggar. Nutritional status and personal hygienic status was very poor. It is quite possible to acquire round worm infection in such scenario.

Although the exact reasons behind such wandering of round worm are not clearly understood; yet, fever (generally above 1020 F) and some other inflammatory responses given by the host probably explain the same. Male worms are more responsive to such stimuli than the female worms[5].

Finding only a single worm is very surprising. Absence of round worm eggs in the intestinal contents compels to assume that no other worm was parasitizing the subject in this case or at least was expelled out much before.

What intrigued us more; was the otherwise normal findings in the respiratory tract, despite the obvious presence of this worm in the trachea.

The diseased in this case was febrile, but as there were no signs of chocking, it seems that the worm must have entered the respiratory passage after the diseased succumbed to its illness. The putrefactive changes in the body after death must have raised the core body temperature, mainly in the intestines and this rise in the temperature must have made the worm to leave its normal habitat and start wandering.

The cause of death given on Provisional most mortem report was as "Death due to septicemia in case of fracture neck femur left side"[6].

Hence this was a rare incidence in which a single, adult, male round worm was isolated from an ectopic site during autopsy with the findings pointing towards post mortem migration of the worm at that unusual site.

Ascariasis is at the top in the list of neglected tropical diseases, having global prevalence of 807 million. India is among the regions of highest prevalence[4,7].

But recovery of adult round worms during autopsy

from ectopic sites is very rare even in this scenario. In May 1977, six adult Ascaris lumbricoides were found post mortem in the pelvis and calyces of the left kidney of a 25-year-old woman in Mexico. Prior to death, three worms had emerged from a subcutaneous abscess, which at autopsy was found to communicate with the colon through fistulas to the upper ureter above an occluding calculus, and from the renal capsule to the skin near the left iliac crest[8].

According to a Lancet editorial, the ascaris burden worldwide is so enormous that if placed head to tail, the worms would encircle the world 50 times[9].This condition hasn't improved much.

The infective form in ascariasis for human beings is the embryonated eggs and the mode of transmission is feco-oral[10]. Eggs survive in the soil for longer periods. Thick outer wall enables them to sustain for months or years in cold and dry conditions[11].

No practical means of killing ascaris eggs in the soil has been discovered[5].

Fig 4: The recovered round worm preserved in 10 % Formalin.

TO CONCLUDE

This is a very rare case of finding a live single adult male Ascaris lumbricoides worm from an ectopic site during autopsy and that too suggestive of a post-mortem migration.

Eradication of ascaris is difficult. But considering the life cycle of round worm and the mode of its transmission to human beings, control can be effected by

-Careful sewage management

-Avoiding use of human feces as manure

-Improvement in personal as well as social hygiene[1]

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