

# An Unusual Case of Ascariasis of the Appendix

Marcos Sforza<sup>1</sup>, Katarina Andjelkov<sup>2</sup>, Renato Zaccheddu<sup>3</sup>, Dejan Ivanov<sup>4,5</sup>, Slobodan Krstić<sup>6,7</sup>, Arnaldo Paganelli<sup>3</sup>

<sup>1</sup>UNIFESO School of Medicine, Rio de Janeiro, Brazil; <sup>2</sup>"Belmedic" Hospital, Belgrade, Serbia;

<sup>3</sup>"Dolan Park" Hospital, Bromsgrove, UK; <sup>4</sup>Clinic for Abdominal, Endocrine and Transplantation Surgery, Clinical Centre of Vojvodina, Novi Sad, Serbia; <sup>5</sup>School of Medicine, University of Novi Sad, Novi Sad, Serbia; <sup>6</sup>Clinic for Digestive Surgery, Clinical Centre of Serbia, Belgrade, Serbia;

<sup>7</sup>School of Medicine, University of Belgrade, Belgrade, Serbia

## SUMMARY

**Introduction** Amongst various causes responsible for the obstruction of digestive tract, intestinal ascariasis is certainly one of the least frequent.

**Case Outline** We report an extremely rare case of a 5-year-old male patient operated on for appendicitis due to adult *Ascaris Lumbricoides* worms intraoperatively detected in the appendiceal lumen.

**Conclusion** On examination patient's clinical features indicated acute appendicitis. Therefore, the treatment-of-choice could only be surgical. Classic appendectomy was performed and the postoperative course was uneventful, with full recovery.

**Keywords:** ascariasis; appendicitis; acute abdomen

## INTRODUCTION

Appendicitis is one of the most common conditions leading to the acute abdomen [1]. Pathogenesis is based on the obstruction of the appendiceal lumen. Among various causes responsible for the obstruction of the digestive tract, intestinal ascariasis is certainly one of the least frequent, although it is more common in certain regions of South-East Asia, Africa and South America where ascariasis is endemic [2-7]. The infection usually begins when people swallow worm eggs from infected foods or soil. When the eggs hatch in the small intestine, they become larvae and swim through the bloodstream to the lungs and then to the throat where they are swallowed. Back in the stomach and small intestine, the larvae become adults, mate and produce new eggs. The entire cycle, from eggs being swallowed to new eggs being produced, takes about 2 to 3 months [8]. Although *Ascaris* worms can be found in people of all ages, however, children are most likely to be heavily infected.

Parasites causing appendicitis are usually in the stage of eggs whereas adult worms are seen more rarely [8, 9]. Adult *Ascaris* worms live in the upper portion of the small intestine. Adult *Ascaris Lumbricoides* worms obstructing the appendix lumen is a rare cause of appendicitis [10].

## CASE REPORT

A 5-year-old child was admitted at the Emergency Department with a history of deteriorating abdominal pain in the right iliac fossa,

which started 24 hours before. The patient also reported episodes of nausea with no associated vomiting.

On examination the abdomen appeared mildly distended and very tender in the right iliac fossa. Blood tests showed increased WBC (12000) with a shift to the left. Eosinophil count was normal. Few air fluid levels in the right lower abdomen were seen on abdominal X-ray. Chest X-ray and urine tests were also performed but did not show any abnormality.

The patient was diagnosed appendicitis and taken to the operating room. The appendix was exposed through a Davis incision exhibiting inflammation. While incising its base, we could detect the presence of an *Ascaris Lumbricoides* worm occupying the whole appendiceal lumen and extending to the cecum (Figure 1). Appendectomy was completed and the patient was discharged 72 hours later after an uneventful post-operative recovery.

Prior to discharge he was examined and followed up by a paediatrician who administered systemic antihelminthic treatment.

## DISCUSSION

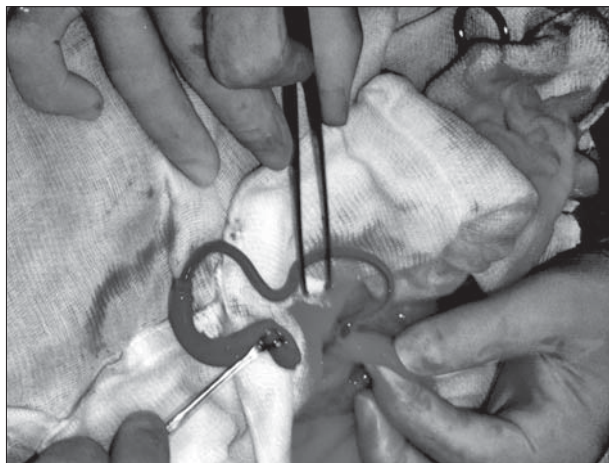
There are various pathological conditions leading to an appendiceal lumen obstruction with consequent appendicitis. The most common is hyperplasia of the lymphoid follicles with an incidence of 60%, whereas fecaliths are responsible in 35% of cases.

Rarer causes are inflammatory strictures, vegetable seeds, foreign bodies like inspissated barium from previous x-ray studies and parasites.

## Correspondence to:

Marcos SFORZA  
Bolnica „Colić“  
Surdulička 5, 11000 Belgrade  
Serbia

marcossforza@hotmail.com



**Figure 1.** Presence of an *Ascaris Lumbricoides* worm occupying the whole appendiceal lumen and extending to the cecum



**Figure 2.** After removing the appendix, the worm attached to the appendix lumen can be seen

The helminthic infection incidence as a cause of appendicitis is variable but can range from 1.5% to 27.2% in endemic areas, with ascariasis being one of the most important [2, 3, 4, 7, 10, 11, 12]. Wani et al. [10] showed that 72.7% of the ascariasis cases in a paediatric hospital were treated in a surgical ward with appendicitis representing around 27.2% of them. In another study based on 311 ascariasis patients, appendectomy constituted 10% of 145 surgical procedures performed [12].

When parasites are the cause of appendicitis, eggs as opposed to adult worms are the usual finding. Therefore the diagnosis is based upon micropathologic examination [8, 9]. In the study of Zoguéréh et al. [2], the presence of parasites in the appendix was in the form of eggs in all cases analysed. Alvares Solis et al. [7] found four adult

*Ascaris Lumbricoides* worms out of 36 cases of appendicitis due to helminthic infection. A case similar to ours has been described by Goenka et al. [6] even though they managed to treat the patient successfully via colonoscopy. This unusual approach which was carried out as the initial clinical examination, led them to suspect ileocecal tuberculosis.

In our case, the clinical picture was straightforward leading us to suspected acute appendicitis. Therefore, the treatment performed could only be surgical. The unusual finding entailed a bizarrely long adult worm occupying not only the appendix but also a part of the cecum (Figure 2). The patient also underwent a systemic antihelminthic therapy to clear any other possible area of subclinical parasitic infection.

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## Необичан случај апендицитиса изазваног паразитом *Ascaris lumbricoides*

Маркос Сфорца<sup>1</sup>, Катарина Анђелков<sup>2</sup>, Ренато Закеду<sup>3</sup>, Дејан Иванов<sup>4,5</sup>, Слободан Крстић<sup>6,7</sup>, Арналдо Паганели<sup>3</sup>

<sup>1</sup>UNIFESO Медицински факултет, Рио де Жанеиро, Бразил;

<sup>2</sup>Болница „Белмедик“, Београд, Србија;

<sup>3</sup>Болница „Долан Парк“, Бромсгров, Велика Британија;

<sup>4</sup>Клиника за абдоминалну, ендокрину и трансплантациону хирургију, Клинички центар Војводине, Нови Сад, Србија;

<sup>5</sup>Медицински факултет, Универзитет у Новом Саду, Нови Сад, Србија;

<sup>6</sup>Клиника за дигестивну хирургију, Клинички центар Србије, Београд, Србија;

<sup>7</sup>Медицински факултет, Универзитет у Београду, Београд, Србија

### КРАТАК САДРЖАЈ

**Увод** Од свих узрочника опструкције дигестивног тракта, интестинална аскаријаза се уобраја у најређе.

**Приказ болесника** Приказујемо необично редак случај петогодишњег дечака који је оперисан од запаљења слепог црева изазваног одраслом формом паразита *Ascaris lumbricoides*, који је током операције откривен у лумену слепог црева.

**Закључак** Након прегледа клиничка слика болесника указивала је на акутно запаљење слепог црева. Стога је једино могуће лечење било хируршко. Извршена је класична апендектомија. Постоперациони ток је протекао нормално.

**Кључне речи:** аскаријаза; апендицитис; акутни абдомен

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