



## Case Report

Acute airway obstruction by *Ascaris lumbricoides* in a 14-month-old boyRichard Wei Chern Gan<sup>a,\*</sup>, Rohit Gohil<sup>b</sup>, Katherine Belfield<sup>c</sup>, Patrick Davies<sup>d</sup>, Matija Daniel<sup>b</sup><sup>a</sup> Ear, Nose & Throat Department, Queen's Medical Centre, Nottingham University Hospitals NHS Trust, Derby Rd, Nottingham NG7 2UH, UK<sup>b</sup> Ear, Nose & Throat Department, Nottingham University Hospitals NHS Trust, UK<sup>c</sup> Biomaterials-Related Infection Group, Orthopaedic & Accident Surgery, The University of Nottingham, UK<sup>d</sup> Paediatric Intensive Care Department, Nottingham University Hospitals NHS Trust, UK

## ARTICLE INFO

## Article history:

Received 25 May 2014

Received in revised form 20 July 2014

Accepted 22 July 2014

Available online 30 July 2014

## Keywords:

Airway obstruction

*Ascaris lumbricoides*

Ascariasis

Child

Eosinophilia

Eosinophilic pneumonia

## ABSTRACT

We describe the case of a 14-month-old child with airway obstruction caused by a mature *Ascaris lumbricoides* worm. The child had been admitted to the paediatric intensive care unit due to overwhelming sepsis, and during the course of his illness developed acute airway obstruction that resolved once the worm was removed from the airway. The *Ascaris* life-cycle is detailed, and a literature review of patients with airway obstruction due to *Ascaris* worms is presented.

© 2014 Elsevier Ireland Ltd. All rights reserved.

## 1. Introduction

Airway obstruction by *Ascaris lumbricoides* worms is uncommon but is known to occur. We describe the case of a 14-month-old child with airway obstruction caused by a mature *A. lumbricoides* worm. The *Ascaris* life-cycle is detailed, and a literature review of patients with airway obstruction due to *Ascaris* worms is presented.

## 2. Case report

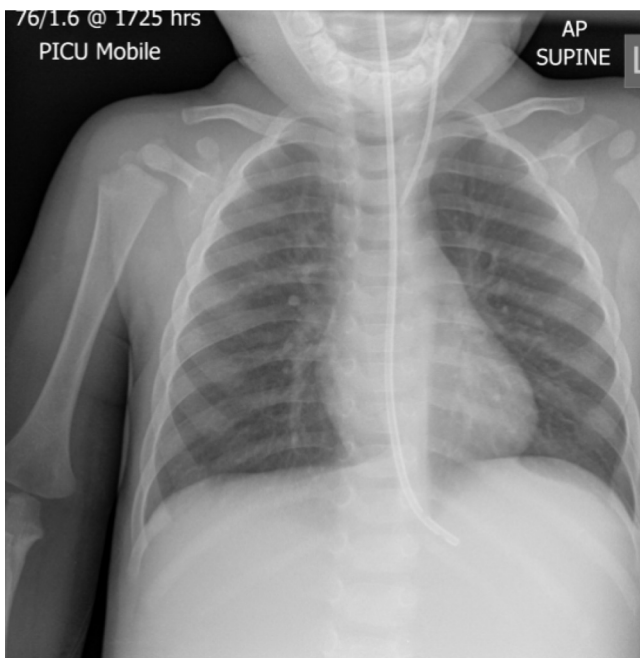
A previously well 14-month-old boy who had recently immigrated from Slovakia was admitted to a regional paediatric centre in the UK with septic shock following a 2-day history of chicken pox. This led to multi organ failure and disseminated intravascular coagulation requiring intensive care admission. He was intubated and ventilated on Day 1 of admission and was successfully extubated on Day 7.

On Day 11, the ENT team were consulted as he had developed intermittent stridor with tracheal tug and no desaturations. Flexible nasoendoscopy revealed an omega epiglottis, supraglottic oedema, and evidence of airway penetration by secretions. Chest X-ray revealed both lungs to be high in volume with slight prominence of central bronchovascular markings but with no specific diagnostic features (Fig. 1). He was treated with dexamethasone.

On Day 12, he had an episode of respiratory distress with airway obstruction. The attending nurse performed oral suction, and unexpectedly retrieved a worm from his oral cavity (Fig. 2), much to the shock and surprise of attending staff. His breathing subsequently improved. Macroscopic examination of the worm showed this to be a mature *Ascaris* worm. Subsequently he also developed bloody diarrhoea, with stool samples showing the presence of *A. lumbricoides*, and abdominal X-ray revealed thickwalled loops of bowel in the left iliac fossa (Fig. 3). The dose of dexamethasone was subsequently decreased and mebendazole was commenced. He no longer had stridor nor airway compromise. His overall clinical status improved until he was ready to be transferred back to his local hospital.

\* Corresponding author. Tel.: +44 7826843342.

E-mail address: [richardwcgan@gmail.com](mailto:richardwcgan@gmail.com) (R.W.C. Gan).



**Fig. 1.** Chest radiograph showing high lung volume with slight prominence of central bronchovascular markings.

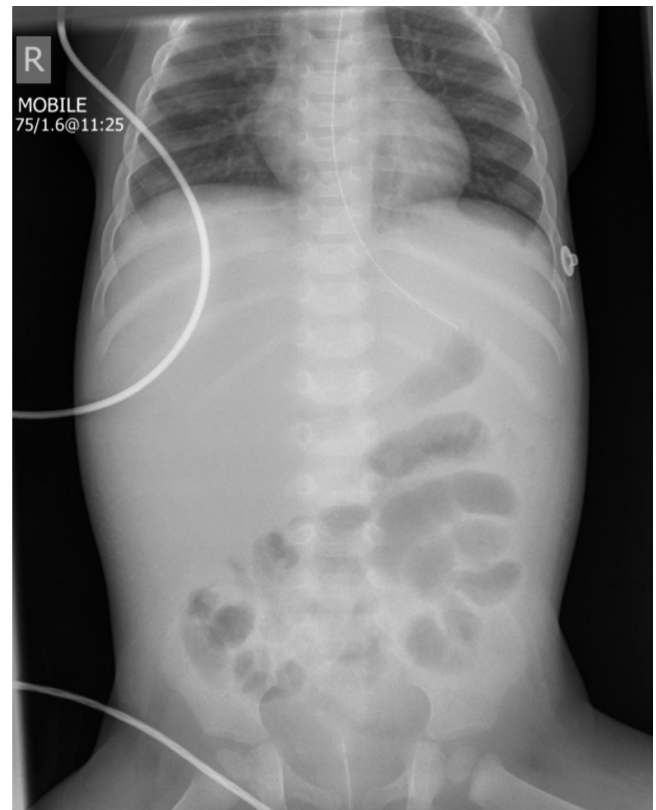
### 3. Discussion

*Ascaris* is a parasitic roundworm (nematode) of the intestinal tract, with human infection primarily being due to *A. lumbricoides*. It is the largest and most prevalent among the *Ascaris* genus [1]. The male adult worm is flesh coloured and ranges from 15 to 31 cm in length and 2 to 4 mm wide. It can be distinguished from females by its ventrally curved and pointed tail. Females grow up to 20–30 cm and are 3–6 mm wide. *A. lumbricoides* is commonly found in soil. Infection is globally endemic with an estimated 1.5 billion people infected across the world with highest rates in China, Southeast Asia, Western and Central Africa [2].

*A. lumbricoides* eggs mature into an infective form from about 18 days of being laid. Ingested fertile eggs hatch larvae in the duodenum where they enter the circulation. They travel via the liver towards the pulmonary circulation. Within 2 weeks of initial exposure, larvae enter the pulmonary air spaces. By 3 weeks they are expectorated and re-enter the intestinal tract where they mature into adults with subsequent oral, nasal or anal passage. Adult females can produce up to 200,000 eggs per day which are shed into the environment via host faeces [3].



**Fig. 2.** Mature *Ascaris lumbricoides* retrieved from oral cavity.



**Fig. 3.** Abdominal radiograph showing thick-walled loops of bowel in left iliac fossa.

Infection with *A. lumbricoides* is largely asymptomatic. However, respiratory and gastrointestinal symptoms can occur (Table 1). Infection is also known to cause complications of intestinal obstruction, appendicitis, and cholangitis.

Identity is confirmed by macroscopic appearance of worm passed orally, nasally or anally, or through demonstration of eggs in faeces. Eosinophilic pneumonia is associated with eosinophilia on haematological profile. IgE and IgG titre can also be elevated. There may also be larvae or eosinophilic crystals seen in the sputum sample. Thus, ascariasis should be included in the differential diagnosis of unexplained eosinophilic reactions. Eosinophilic pneumonia may show patchy opacification on plain chest radiographs. At the later stages of infection (gastrointestinal phase), there may be passage of adult worms or eggs that can be identified macroscopically and microscopically respectively. There has also been documented identification of worm infestation using ultrasonography [4], magnetic resonance

**Table 1**  
Symptoms and pathophysiology of *A. lumbricoides* infection.

Symptoms	Pathophysiology
Respiratory	Larval migration within the respiratory vascular system and alveoli causing a reactive eosinophilic pneumonia also known as Löffler syndrome.
Dyspnoea	
Haemoptysis	
Fever	
Cough	
Gastrointestinal	Mechanical burden of worms in the intestines.
Oral or faecal passage of worms	
Nausea	
Vomiting	
Failure to thrive	
Abdominal pain	
Constant throat clearing	
Globus	

Download English Version:

<https://daneshyari.com/en/article/6213789>

Download Persian Version:

<https://daneshyari.com/article/6213789>

[Daneshyari.com](https://daneshyari.com)