Revista Cientifica Estudiantil MedEs

MedEst|2026 | Vol.6: e505| ISSN: 2789-7567 |RNPS: 2524| CASE PRESENTATION

Massive ascariasis complicated by acute suppurative mediastinitis: a case report

Ascariasis masiva complicada con mediastinitis aguda supurada: reporte de un caso

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How to cite this article:
Avalos-García R; Kindelán-Fortuné E; Iglesias-Serrano YL; Hernández-Hernández DM. Massive ascariasis complicated by acute suppurative mediastinitis: a case report. MedEst. [Internet]. 2026 [cited access date]; 6:e505. Available in: https://revmedest.sld.cu/index.php/medest/article/view/505

Palabras Clave:
Ascariasis; Mediastinitis; Disfagia; Infecciones Parasitarias; Complicaciones Atípicas; Discapacidad Intelectual.

Keywords: Ascariasis; Mediastinitis; Dysphagia; Parasitic Infections; Atypical Complications; Intellectual Disability.

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Received: 25/11/2025

Accepted: 15/02/2026

Editor(s) in charge:
DrC. Deyanira Medelin Fausto

Translator:
MSc. Maritza Núñez Arévalo

Layout designer:
Carlos Luis Vinageras Hidalgo

RESUMEN

Introducción: La ascariasis masiva complicada con mediastinitis aguda supurada constituye una presentación clínica excepcionalmente rara y letal, no previamente reportada en la literatura médica cubana. El *Ascaris lumbricoides* puede migrar aberrantemente hacia la orofaringe, desencadenando complicaciones sistémicas catastróficas en pacientes vulnerables. **Objetivo:** Reportar un caso de ascariasis masiva con mediastinitis aguda supurada en un adulto con discapacidad intelectual, enfatizando las dificultades diagnósticas y los factores determinantes del desenlace fatal. **Presentación del caso:** Paciente masculino de 56 años con discapacidad intelectual severa, esquizofrenia y condición de desamparo, quien ingresó por disfagia aguda. Inicialmente se sospechó cuerpo extraño esofágico, pero la endoscopia reveló secreciones purulentas nasofaríngeas. En las siguientes 24 horas desarrolló fiebre, aumento de volumen cervical izquierdo con crepitación, y expulsión de más de 16 lombrices por vía oral. Se confirmó ascariasis masiva con ausencia de eosinofilia. A pesar del tratamiento con albendazol, ceftriaxona y metronidazol, falleció súbitamente por parada cardiorrespiratoria al séptimo día. La necropsia reveló infestación masiva del tracto gastrointestinal, mediastinitis aguda supurada con infiltración de tráquea y epiglotis, traqueítis y bronconeumonía multifocal. **Conclusiones:** La ascariasis masiva puede evolucionar de forma catastrófica mediante migración aberrante hacia la orofaringe, desencadenando mediastinitis necrosante descendente fatal en pacientes con diagnóstico tardío y factores de vulnerabilidad. La ausencia de eosinofilia y el uso empírico de corticosteroides pueden enmascarar la gravedad de la infección. La prevención comunitaria, el tamizaje en instituciones psiquiátricas y la sospecha clínica oportuna en poblaciones de riesgo constituyen estrategias esenciales para evitar desenlaces fatales por esta parasitosis prevenible.

ABSTRACT

Introduction: Massive ascariasis complicated by acute suppurative mediastinitis constitutes an exceptionally rare and lethal clinical presentation, not previously reported in the Cuban medical literature. *Ascaris lumbricoides* may migrate aberrantly toward the oropharynx, triggering catastrophic systemic complications in vulnerable patients. **Objective:** To report a case of massive ascariasis with acute suppurative mediastinitis in an adult with intellectual disability, emphasizing diagnostic difficulties and determinants of the fatal outcome. **Case Presentation:** A 56-year-old male patient with severe intellectual disability, schizophrenia, and homeless condition was admitted due to acute dysphagia. Initially, esophageal foreign body was suspected, but endoscopy revealed purulent nasopharyngeal secretions. Within 24 hours, he developed fever, left cervical swelling with crepitus, and expulsion of more than 16 worms through the oral route. Massive ascariasis was confirmed with absence of eosinophilia. Despite treatment with albendazol, ceftriaxone, and metronidazole, he died suddenly from cardiorespiratory arrest on day seven. Autopsy revealed massive gastrointestinal infestation, acute suppurative mediastinitis with infiltration of trachea and epiglottis, tracheitis, and multifocal bronchopneumonia. **Conclusions:** Massive ascariasis may evolve catastrophically through aberrant migration toward the oropharynx, triggering fatal descending necrotizing mediastinitis in patients with delayed diagnosis and vulnerability factors. Absence of eosinophilia and empirical corticosteroid use may mask infection severity. Community prevention, screening in psychiatric institutions, and timely clinical suspicion in at-risk populations constitute essential strategies to prevent fatal outcomes from this preventable parasitosis.

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ISSN: 2789-7567 | RNPS: 2524

INTRODUCTION

Ascariasis, caused by the nematode Ascaris lumbricoides, is one of the most prevalent intestinal parasitic infections worldwide, affecting more than 800 million people, especially in communities with limited access to basic sanitation, safe drinking water, and health education [1]. Although the World Health Organization has promoted mass deworming programs, the infection persists in rural areas and among marginalized groups, including adults with intellectual disabilities or psychiatric disorders [2].

In Cuba, Machado Cazorla et al. [2] demonstrated high rates of intestinal parasitosis in patients institutionalized in psychiatric hospitals, reflecting the impact of the environment and hygiene on fecal-oral transmission. Despite advances in healthcare, ascariasis should not be considered eliminated, but rather neglected due to low clinical suspicion in adults, as noted by Álvarez and de Armas Prado [3]. This situation is particularly concerning in individuals with intellectual disabilities and those experiencing homelessness, who are more vulnerable due to deficits in personal hygiene and access to healthcare [4].

Most Ascaris lumbricoides infections are asymptomatic; however, in cases of parasitic overload, the worms can migrate to ectopic organs, causing biliary obstruction, pancreatitis, intestinal perforation, or respiratory compromise [5-7]. Recently, Singh et al. [8] and Kidan et al. [9] have described cases of fatal airway obstruction caused by Ascaris, highlighting its ability to invade the upper respiratory tract.

One of the most serious, though rare, complications is descending necrotizing mediastinitis, a polymicrobial infection of the mediastinum that originates in oropharyngeal foci and spreads through the cervical fascial planes. Reuter et al. [10] and Chaulk et al. [11] emphasize that delays in diagnosis and surgical drainage increase mortality to over 40 %. The association between massive ascariasis and acute suppurative mediastinitis is an extremely rare clinical manifestation that, to our knowledge, has not been previously reported in Cuban or Latin American medical literature.

This case describes the fatal outcome of an adult patient with severe intellectual disability and a state of destitution, who developed acute suppurative mediastinitis as a complication of massive ascariasis, with retrograde migration of parasites to the oropharynx. This report illustrates a rare clinical manifestation of a parasitic infection considered eradicated in many contexts, highlighting the importance

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ISSN: 2789-7567 | RNPS: 2524

of maintaining a high index of suspicion in vulnerable populations and the need for timely diagnostic and preventive strategies.

CASE PRESENTATION

A 56-year-old male patient of mixed race, with a history of intellectual developmental disorder secondary to childhood meningoencephalitis, long-standing schizophrenia, and a condition of abandonment due to family neglect, was admitted to the "Faustino Pérez" Provincial Clinical-Surgical Teaching Hospital in Matanzas, Cuba, for dysphagia of approximately four days' duration. According to information provided by his family caregiver, the symptoms began after ingesting chicken, progressing to the inability to swallow liquids.

The patient was referred to the Otolaryngology service, where the physical examination revealed purulent secretions in the oropharynx. Indirect laryngoscopy showed abundant saliva in the piriform sinuses, a preserved glottic space, and no masses. Given the suspicion of an esophageal foreign body with secondary obstructive edema, an urgent upper gastrointestinal endoscopy (EGD) was performed. The EGD revealed edematous hypopharyngeal mucosa preventing the foreign body from passing into the esophagus through the upper esophageal sphincter. Empirical antibiotic therapy was initiated with ceftriaxone 1 g intravenously every 12 hours and prednisone 60 mg intravenously every 8 hours. Urgent laboratory tests showed a hematocrit of 0.35, a white blood cell count of 21.5 × 10^9/L (marked leukocytosis), and a blood glucose level of 3.5 mmol/L.

On the second day of hospitalization, the patient experienced two febrile episodes of 38 °C with chills, which resolved with antipyretics. Whitish, foul-smelling nasal discharge was observed, along with swelling in the left lateral region of the neck. Indirect laryngoscopy was repeated, with a negative Jackson sign. An attempt was made to repeat the endoscopic ultrasound (EUS), but it proved impossible due to excessive sialorrhea, a productive cough, swelling in the left submandibular region, and the patient's lack of cooperation. Soft tissue ultrasound revealed bilateral infraclavicular edematous infiltration. Antibiotic coverage was broadened to include metronidazole 500 mg intravenously every 8 hours for anaerobic coverage.

On the third day, after the swelling of the lower side of the face and neck decreased, a repeat esophagogastroduodenoscopy (EGD) was performed due to persistent dysphagia to solid foods. No abnormalities were observed in the esophageal mucosa, no space-occupying lesions, and no foreign body were found. During the

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examination, abundant yellowish, purulent, and foul-smelling secretion was observed descending from the nasopharyngeal cavity, and the esophagoscopy was concluded to be normal. That same day, the Internal Medicine specialist requested a Gastroenterology consultation, reporting the expulsion of more than 16 roundworms orally, the largest measuring approximately 20 cm in length. Given the patient's vulnerable condition, the differential diagnosis included nasopharyngeal myiasis, or Ascaris lumbricoides infection with possible Loeffler's syndrome. The chest X-ray showed no abnormalities. Treatment with a single dose of albendazole 400 mg was prescribed. The expelled worms were collected in sterile containers, and the parasitological diagnosis of ascariasis was confirmed in the Bacteriology laboratory.

On the fourth day of the illness, the patient continued to experience dysphagia, foul-smelling nasal discharge, and swelling in both lower extremities. He was transferred to the intensive care unit and a nasogastric tube was inserted for enteral feeding.

On the sixth day, the patient was hemodynamically stable, afebrile, conscious but uncooperative, breathing spontaneously, and continuing to expel worms orally. Physical examination revealed slightly dry and pale mucous membranes, infiltrated subcutaneous tissue extending to the malleoli, coarse breath sounds without crackles, and a peripheral oxygen saturation of 97 %. Arterial blood gas analysis showed a pH of 7.42, a partial pressure of carbon dioxide of 32 mmHg, a partial pressure of oxygen of 105 mmHg, bicarbonate of 20 mmol/L, and a base excess of -3.5, indicating mild metabolic acidosis. Electrolytes showed a potassium level of 3.2 mmol/L (mild hypokalemia). Treatment for massive ascariasis was continued with fluid and electrolyte support.

On the seventh day, the patient remained clinically stable during the morning but presented with an oxygen saturation of 90%. Arterial blood gas analysis revealed severe hypoxemia and severe hypokalemia on the electrolyte panel. Oxygen therapy was initiated via nasal cannula. During the night, the patient experienced sudden and progressive dyspnea, culminating in cardiorespiratory arrest. During cardiopulmonary resuscitation, abundant airway obstruction was observed. After 40 minutes of advanced resuscitation without return of spontaneous circulation, the patient was pronounced dead.

The autopsy findings, performed 24 hours after death, established the underlying cause of death as massive infestation by Ascaris lumbricoides (from stomach to anus, Figure 2), the direct cause of death as acute suppurative mediastinitis (Figure 3.A), and the

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underlying condition as severe protein-energy malnutrition. Additional pathological findings included: mediastinum with suppurative inflammation and abscesses infiltrating the trachea and epiglottis, acute tracheitis, multifocal bronchopneumonia predominantly on the left side, acute exacerbation of chronic pleurisy, atelectasis, acute gastritis (Figure 3.B), mild hepatic steatosis, grade II coronary atheromatosis, and left ventricular hypertrophy.

Figure 1: roundworms expelled orally (Ascaris lumbricoides). Multiple pale pink adult specimens are observed, with the characteristic morphology of intestinal nematodes, the largest approximately 20 cm in length.

Figure 2: anatomical specimen of the large intestine. A massive infestation by Ascaris lumbricoides is evident in the intestinal lumen, with multiple adult specimens occupying the space from the stomach to the anus.

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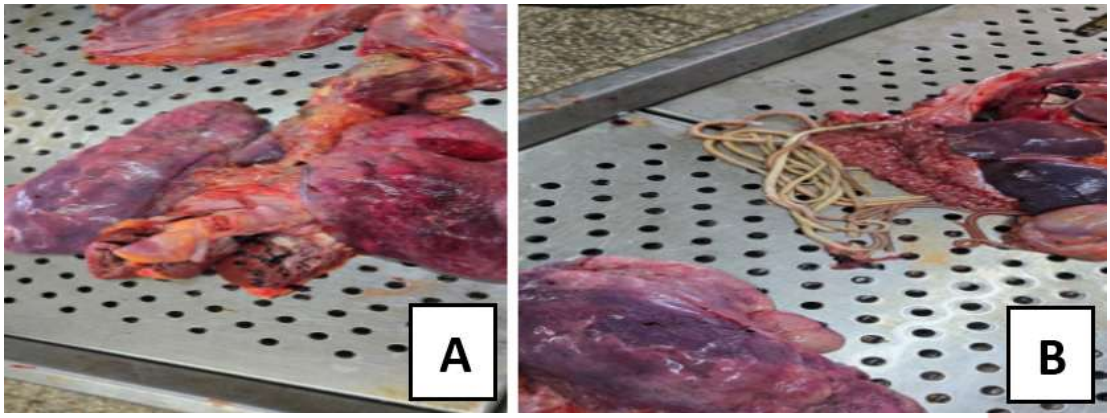

Figure 3: necropsy findings. A. Anatomical specimen including lungs, mediastinum, trachea, and epiglottis. Acute suppurative mediastinitis is observed with inflammation and abscesses infiltrating the trachea and epiglottis. B. Anatomical specimen of the stomach with the presence of large worms and associated acute gastritis.

Informed consent: Written informed consent was obtained from the patient's legal guardian for the publication of this clinical case, guaranteeing the protection of identity and compliance with the ethical principles established in the Declaration of Helsinki.

DISCUSSION

The patient presented multiple vulnerability factors for developing massive parasitosis: severe intellectual disability secondary to childhood meningoencephalitis, long-standing schizophrenia, family abandonment, and a state of destitution. Machado Cazorla et al. [1] and Durán Pincay et al. [2] have documented that these population groups have greater exposure to poor hygiene and less access to medical care, which favors chronic and massive parasitosis. The patient's inability to communicate specific symptoms led to an initial diagnostic approach focused on an esophageal foreign body, delaying suspicion of parasitosis until the visible expulsion of the helminths, by which time serious complications had already developed.

Retrograde migration of Ascaris lumbricoides to the oropharynx has been described in cases of massive intestinal obstruction or during anthelmintic treatment [3,4]. The mucosal trauma caused by the migration of the parasites facilitated polymicrobial bacterial invasion, and the purulent secretions observed from the second day of hospitalization indicated the presence of a secondary oropharyngeal infection that acted as the primary focus. This infection spread to the mediastinum through the retropharyngeal and esophageal fascial planes, generating descending necrotizing mediastinitis. Reuter et al. [5] and Chaulk et al. [6] emphasize that this entity, although rare, has

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a mortality rate exceeding 40 % when there is a delay in diagnosis and surgical drainage.

In the case presented, the absence of computed tomography of the neck and chest—the gold standard for diagnosis and assessment of the extent of the disease [7]—limited the early recognition of mediastinal dissemination and the planning of an aggressive surgical approach, constituting a significant limitation in management.

The absence of eosinophilia in the patient's initial evaluation is striking, despite the documented massive infestation. While ascariasis is typically associated with eosinophilia, especially during the pulmonary larval migration phase, in chronic massive infestations of adults with severe malnutrition and compromised immune systems, the eosinophilic response may be attenuated or absent [8]. The severe protein-energy malnutrition confirmed at autopsy, along with schizophrenia and intellectual disability as factors contributing to immune compromise, would explain this unexpected paraclinical finding. The absence of eosinophilia contributed to the delay in the initial parasitological approach, reinforcing the need to maintain a high level of clinical suspicion regardless of laboratory results.

The empirical use of systemic corticosteroids (prednisone 60 mg intravenously every 8 hours) in the absence of confirmed angioedema or allergic involvement constituted a suboptimal therapeutic decision. While corticosteroids may be indicated in the pulmonary migration phase of ascariasis (Loeffler's syndrome) to control the inflammatory response, in the context of an oropharyngeal infection with signs of sepsis, their use can mask the severity of the underlying infection and promote dissemination [9]. Acosta et al. [10] point out that the use of corticosteroids in undiagnosed parasitic infections can precipitate serious complications, including aberrant parasite migration.

Treatment with albendazole 400 mg as a single dose was appropriately indicated once the parasitological diagnosis was confirmed; however, in massive infestations, this drug can cause reflex migration of worms to the upper respiratory tract due to induced motor impairment [11,12]. This iatrogenic migration, coupled with pre-existing laryngeal edema and evolving mediastinitis, likely contributed to the acute airway compromise and subsequent cardiorespiratory arrest. Current evidence suggests that in massive infestations, management in intensive care units with advanced airway management training should be considered prior to anthelmintic administration.

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This case illustrates the persistence of intestinal parasitosis as "forgotten emergencies" in adults, particularly in contexts of poverty, neglect, and institutionalization [13,14]. The severe protein-energy malnutrition documented at autopsy confirms the chronic systemic impact of untreated parasitosis, as well as the lack of access to preventive medical care. Massive ascariasis can manifest with atypical presentations such as acute dysphagia in adults with neurological disabilities, mimicking mechanical pathologies such as foreign bodies [15].

The initial differential diagnosis of nasopharyngeal myiasis, although not confirmed, was reasonable given the patient's vulnerable condition and the presentation with foul-smelling nasal discharge and expulsion of multiple larvae/biological material. Nasopharyngeal myiasis shares similar risk factors (poor hygiene, intellectual disability, dementia) and is an entity that should be ruled out in this context [16]. However, the definitive parasitological diagnosis should always be confirmed by morphological or molecular identification [17].

Mortality in descending necrotizing mediastinitis is mainly associated with the presence of septic shock, diagnostic-therapeutic delays exceeding 72 hours, comorbidity with diabetes mellitus, an insufficient number of surgical interventions, and left-sided involvement of the infection [18,19]. In this case, although diabetes mellitus was not documented, severe malnutrition and immune compromise served as equivalent comorbidities. The diagnostic delay of approximately 72 hours from the onset of symptoms to the recognition of ascariasis, coupled with the absence of aggressive surgical drainage of the mediastinum, led to the progression to irreversible sepsis and cardiorespiratory arrest. Overall mortality reported in recent series ranges from 21 % to 40 %, but can be reduced to 4.3 % with early diagnosis, multidisciplinary treatment, and aggressive surgical debridement [18], underscoring the importance of timely clinical suspicion in vulnerable populations.

CONCLUSIONS

Massive ascariasis with acute suppurative mediastinitis is an exceptionally lethal complication, not previously reported in Cuba. In a patient with malnutrition and intellectual disability, the absence of eosinophilia and the empirical use of corticosteroids masked the diagnosis, delaying treatment by 72 hours. The lack of chest imaging and surgical drainage led to sepsis with 100% mortality. It is concluded that primary prevention—mass deworming in psychiatric institutions and improved sanitation—is the most effective intervention. Furthermore, in cases of unexplained acute dysphagia in

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these patients, massive ascariasis should be suspected immediately, regardless of eosinophilia.

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AUTHORSHIP CONTRIBUTIONS

RAG: Conceptualization, Data Curation, Formal Analysis, Research, Methodology, Drafting, Revision Writing, and Editing.

EKF: Data Curation and Formal Analysis.

YLIS: Drafting, Visualization.

DMHH: Resources, Data Curation.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

FUNDING SOURCES

No external funding was received.