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Enterobius Vermicularis Unusual Cause of Appendicitis: A Case Report

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Abstract: Abdominal pain is common in children (under 18 years) with a strong female preponderance in those aged over 8 years. Of those presenting with acute abdominal pain requiring inpatient assessment, only 25% have acute appendicitis. Pinworms are the most common helminth infection in the USA and Western Europe, with prevalence rates in some communities of as high as 30-50%. Pinworms generally live in the gastrointestinal tract, and helminth infestations have been noted in over one-quarter of acute appendectomies on histologic examination. Acute appendicitis is one of the most common emergent surgeries. Generally, appendicitis is inflammation of the appendix. The medical procedure for the departure of the reference area is called an appendectomy. Appendectomy can be performed through an open or laparoscopic medical procedure, and it is the most effective way to prevent complications is to remove the inflamed appendix early by open surgery or laparoscopically. This case was a 14 years old female with abdominal pain and acute appendicitis that underwent surgery shows Occiur patch was the cause of her signs and symptoms of acute appendicitis that performed resection of appendix and discharge healthy. The present study presents a classic case of parasitic appendicitis in a teenage girl and discusses the clinical features, treatment and global burden of disease. Atypical presentations may indicate an unusual anatomical placement of the appendix. Preoperative diagnosis using cross-sectional computed tomography imaging and a thorough understanding of these situations frequently result in early diagnosis and expeditious surgical care. EV was seen in 9.8% of pediatric appendectomies in our study. Pruritus anus, normal WBC count, normal neutrophil count, and normal CRP level at presentation could predict EV infection in children who present with right iliac fossa pain. E. vermicularis is responsible for 7% of acute appendicitis. It is responsible for a significantly higher negative appendectomy rate which if predicted may avoid unnecessary appendectomy and associated morbidity. Enterobius vermicularis associated appendicular colic and acute appendicitis are rarely encountered in the United States. The high rate of inflammation on pathology found among our patients with pinworm appendicitis suggests an association with presentation as acute appendicitis. Enterobius vermicularis is known to be associated with appendicitis, however a causal relationship between Enterobius and appendicitis has not been established. The aim of this study was to explore the relationship between appendiceal Enterobius and histologic appendicitis. Enterobius-associated appendicitis cases and compare them with acute appendicitis cases in terms of parameters such as the neutrophil-to-lymphocyte ratio (NLR), C-reactive protein (CRP)-to-lymphocyte ratio (CLR), platelet-to-lymphocyte ratio (PLR), and systemic immune-inflammation index (SII). Enterobius vermicularis infections are usually asymptomatic and may only cause anal pruritis, with occasional reported cases of ectopic migration into the appendix or the female genital tract by adult pinworms.

Keywords: Acute Appendicitis, Case Report, Abdominal Pain, Acute Appendicitis, Appendectomy, Enterobius Vermicularis.

Case Report

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INTRODUCTION

Non-specific abdominal pain is a common clinical presentation in teenage girls and this demographic group receives more unnecessary operations than boys and younger girls. Enterobius vermicularis (pinworm) is a relatively common parasite and infection can result in abdominal pain. Burkhart and Burkhart estimate that up to 50% of British children may be infected with E. vermicularis; however, it is rarely considered as a differential diagnosis of non-specific abdominal pain [1]. Abdominal pain is common in children (under 18 years) with a strong female preponderance in those aged over 8 years. Of those presenting with acute abdominal pain requiring inpatient assessment, only 25% have acute appendicitis [3]. Acute appendicitis is one of the most common emergent surgeries. Generally, appendicitis is inflammation of the appendix [4]. The medical procedure for the departure of the reference area is called an appendectomy. Appendectomy can be performed through an open or laparoscopic medical procedure, and it is the most effective way to prevent complications is to remove the inflamed appendix early by open surgery or laparoscopically [6]. The high rate of inflammation on pathology found among our patients with pinworm appendicitis suggests an association with presentation as acute appendicitis [20]. Enterobius-associated appendicitis cases and compare them with acute appendicitis cases in terms of parameters such as the neutrophil-to-lymphocyte ratio (NLR), C-reactive protein (CRP)-to-lymphocyte ratio (CLR), platelet-to-lymphocyte ratio (PLR), and systemic immune-inflammation index (SII) [21]. Enterobius vermicularis is a threadlike parasite also known as "pinworms". It is the most common helminth infection, affecting the gastrointestinal tracts of children worldwide, although it seldom causes any fatalities. Enterobius vermicularis infections are usually asymptomatic and may only cause anal pruritis, with occasional reported cases of ectopic migration into the appendix or the female genital tract by adult pinworms [22].

The present study presents a classic case of parasitic appendicitis in a teenage girl and discusses the clinical features, treatment and global burden of disease. Enterobius vermicularis is known to be associated with appendicitis, however a causal relationship between Enterobius and appendicitis has not been established. The aim of this study was to explore the relationship between appendiceal Enterobius and histologic appendicitis.

CASE PRESENTATION

Our case was a 14 years old female with abdominal pain, nausea and vomiting and anorexia for 2 days. We admit her and start examination that his Blood WBC was 14000/l and PMN was 81%. Fever was low about 38 degree, and in abdomen she has RLQ tenderness, with all criteria acute appendicitis was first diagnosis and operation was the choice of treatment. When we open abdomen we see inflamed appendix (figure 1).

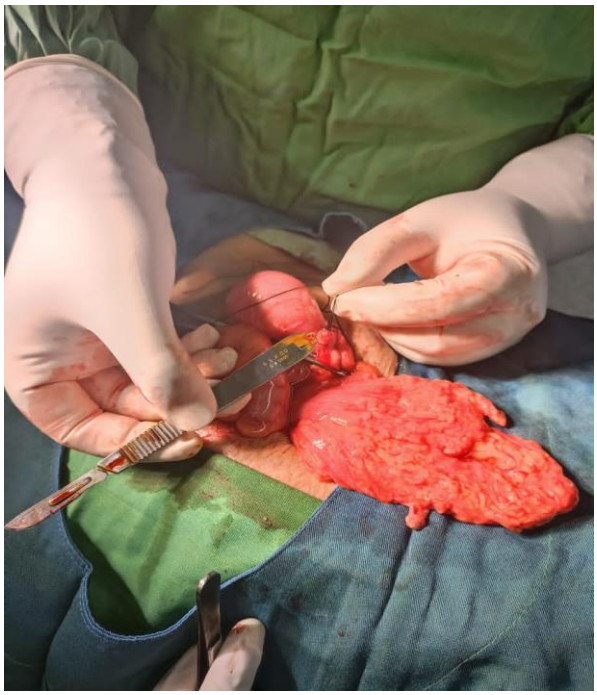

Figure 1: Acute appendicitis

Figure 1: Appendix

Therefore, we want to do appendectomy we see some worms (figure 2).

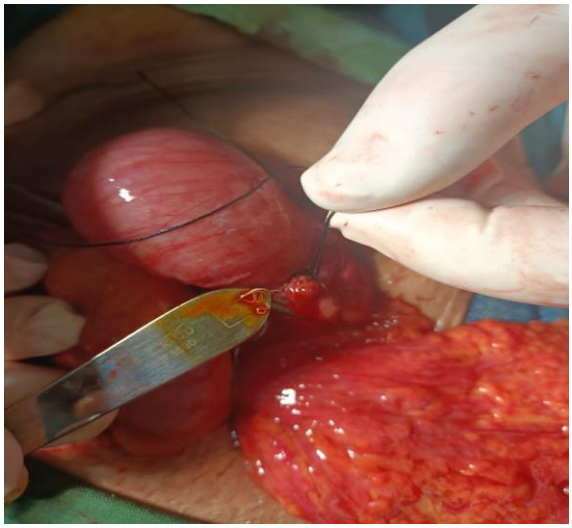

Figure 2: Worms

After we complete resection of appendix we focus on worm and we find it is Occiur (figure 3, 4, 5)

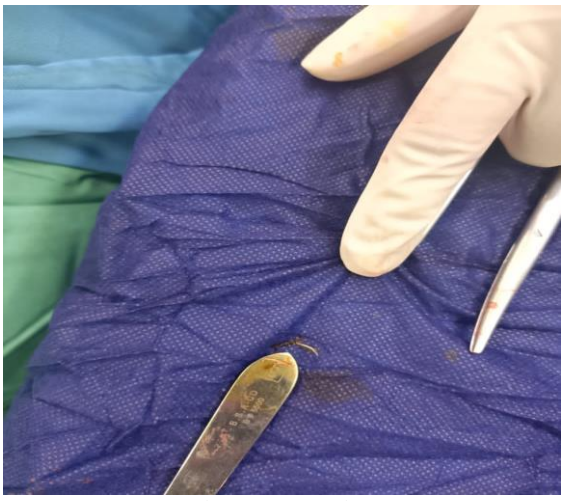

Figure 3: Occiur

Figure 4: Occiur

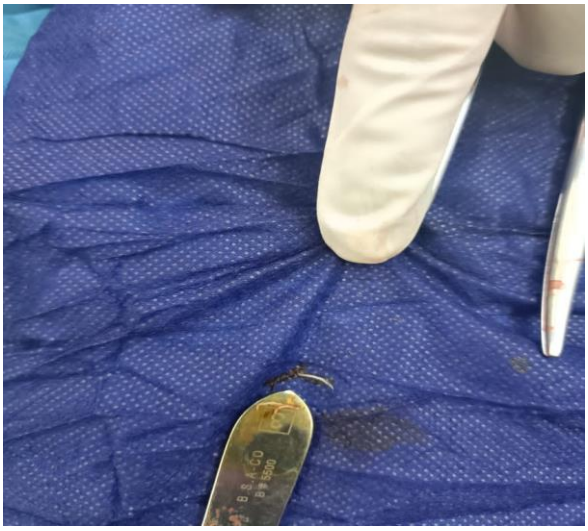

Figure 5: Occiur

We complete the surgery and in follow up treat Occiur in her and her family and discharge her healthy.

DISCUSSION

The high rate of inflammation on pathology found among our patients with pinworm appendicitis suggests an association with presentation as acute appendicitis [20].

Diagnosis of acute appendicitis based on some signs and symptoms:
Investigations: [2]
C reactive protein was <0.1
Urea and electrolytes and glucose: all within normal limits.
Liver function tests: all within normal limits.
Full blood count: haemoglobin and white cells were all within normal limits. The eosinophils count was marginally raised at 1.01×109/L constituting 11.6% of white cells.
Mid-stream urine dipstick: no abnormalities detected.
Urine flow cytometry was negative and culture was not performed.
Transcutaneous abdominal ultrasound did not reveal signs of any pathology.

Differential Diagnosis:

Since appendicitis is common and potentially life-threatening, it was at the top of our differential list. Despite encouraging blood results, we felt we could not rule it out. Non-specific abdominal pain could also be due to irritable bowel syndrome; however, there was no bloating, change in bowel habit or obvious psychological stressors at home. Urinary tract infections can cause similar symptoms, but there was no frequency or dysuria and the urinary investigations ruled out this differential. The patient reported no gynaecological symptoms and she was not in the right stage of her cycle for mittelschmerz (mid-cycle pain) to be a likely cause. Other differentials for abdominal pain, including

inflammatory bowel syndrome, Meckel's diverticulum and ovarian cysts, were not supported by the history, examination and investigation findings [2]. C-reactive protein (CRP) is an important finding early in the disease course. Other possible indicators include increased white blood cell count, reduced hemoglobin levels, increased blood sugar, decreased sodium ion level, and raised creatinine. Furthermore, it is essential to remember that the data obtained from paraclinical and laboratory tests are somehow non-specific and always should accompany a detailed and accurate medical history and proper physical examinations [5]. Appendectomy can be performed through an open or laparoscopic medical procedure, and it is the most effective way to prevent complications is to remove the inflamed appendix early by open surgery or laparoscopically [6]. Some studies have shown that wound infection is less likely to occur in laparoscopic appendectomy than open surgery [7-9]. S. typhi and S. paratyphi infections are known to present as acute abdomen due to intestinal perforations [10] and salpingitis, gallbladder involvement and indeed, rarely, appendicitis [11-13].

Acute appendicitis is the most common surgical emergency worldwide [15]. EV was seen in 9.8% of pediatric appendectomies in our study. Pruritus ani, normal WBC count, normal neutrophil count, and normal CRP level at presentation could predict EV infection in children who present with right iliac fossa pain [16]. E. vermicularis is responsible for 7% of acute appendicitis. It is responsible for a significantly higher negative appendectomy rate which if predicted may avoid unnecessary appendectomy and associated morbidity [17]. Preoperative diagnosis needs a high index of suspicion and is facilitated by imaging. Surgery represents the appropriate treatment of acute appendicitis [18]. It is important to not immediately rule out the diagnosis of appendicitis because an atypical presentation may be presented and could potentially lead to fatal complications [19]. The high rate of inflammation on pathology found among our patients with pinworm appendicitis suggests an association with presentation as acute appendicitis [20]. Enterobius-associated appendicitis cases and compare them with acute appendicitis cases in terms of parameters such as the neutrophil-to-lymphocyte ratio (NLR), C-reactive protein (CRP)-to-lymphocyte ratio (CLR), platelet-to-lymphocyte ratio (PLR), and systemic immune-inflammation index (SII) [21]. Enterobius vermicularis infections are usually asymptomatic and may only cause anal pruritis, with occasional reported cases of ectopic migration into the appendix or the female genital tract by adult pinworms [22].

The patient was systemically stable; however, the pain persisted, requiring regular analgesics. The paediatric team admitted her and requested a surgical review to rule out appendicitis.

CONCLUSION

Although transmission is often attributed to the ingestion of infective eggs by nail biting and inadequate hand washing, inhalation and ingestion of airborne eggs also occur. The female Enterobius vermicularis migrates nightly to the perianal area to deposit her eggs, but some worms find their way into adjacent orifices, most commonly the female genitourinary tract, producing an array of symptoms. More consideration of this entity is justified in patients presenting with genitourinary complaints not responding to normal therapies. In the treatment of pinworms affecting genitourinary organs, treatment with possibly two oral agents, namely mebendazole and ivermectin, and a topical therapy for the eggs may be warranted [1]. Atypical presentations may indicate an unusual anatomical placement of the appendix. Preoperative diagnosis using cross-sectional computed tomography imaging and a thorough understanding of these situations frequently result in early diagnosis and expeditious surgical care [14].

Surgical crises resulting from aberrant anatomical variants of the appendix constitute a unique diagnostic challenge, and may result in high mortality and morbidity rates. This risk can be mitigated by maintaining a high index of suspicion for appendicitis in such uncommon presentations and administering appropriate treatment. Even though laparoscopic appendicectomy has been established as the standard of care for such cases, a tailored approach to the patient's clinical presentation should be taken expeditiously and cautiously [14]. E. vermicularis is responsible for 7% of acute appendicitis. It is responsible for a significantly higher negative appendectomy rate which if predicted may avoid unnecessary appendectomy and associated morbidity [17]. The high rate of inflammation on pathology found among our patients with pinworm appendicitis suggests an association with presentation as acute appendicitis [20]. Enterobius-associated appendicitis cases and compare them with acute appendicitis cases in terms of parameters such as the neutrophil-to-lymphocyte ratio (NLR), C-reactive protein (CRP)-to-lymphocyte ratio (CLR), platelet-to-lymphocyte ratio (PLR), and systemic immune-inflammation index (SII) [21]. Enterobius vermicularis is a threadlike parasite also known as "pinworms". It is the most common helminth infection, affecting the gastrointestinal tracts of children worldwide, although it seldom causes any fatalities. Enterobius vermicularis infections are usually asymptomatic and may only cause anal pruritis, with occasional reported cases of ectopic migration into the appendix or the female genital tract by adult pinworms [22].

Declarations:

Ethical Approval and Consent to participate:

The content of this manuscript are in accordance with the declaration of Helsinki for Ethics. No committee approval was required.

Oral and written consent to participate was granted by her husband.

Consent for Publication:

"Written informed consent was obtained from the patient's legal guardian for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal."

Availability of Supporting Data: It is available.

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