Tropical Medicine & Surgery
ISSN: 2329-9088

Malallah et al., Trop Med Surg 2017, 5:1
DOI: 10.4172/2329-9088.1000216

Case Report Open Access

Schistosomiasis as a Cause of Acute Appendicitis in Non-Endemic Areas

Haya Malallah[1], Tasneem Al-Onaizi[2], Abdullah Shuaib[1*], Khalid Alsharaf[1] and Abdullah Behbehani[1,3]

[1]*Department of Surgery, Mubarak Al-Kabeer Hospital, Kuwait City, Kuwait*

[2]*Department of Histopathology, Mubarak Al-Kabeer Hospital, Kuwait City, Kuwait*

[3]*Department of Surgery, Faculty of Medicine, Kuwait University, Kuwait*

[*]**Corresponding author:** Abdullah Shuaib, Department of Surgery, Mubarak Al-Kabeer Hospital, Kuwait, Tel: +965 2531 2700; E-mail: Shuaib.Abdullah.77@gmail.com

Received date: August 05, 2017; **Accepted date:** August 22, 2017; **Published date:** August 29, 2017

Abstract

Schistosomiasis is one of the most widespread parasitic diseases in the world. There are about 200 million people infected worldwide, 85% of whom are concentrated south of the Sahara in Africa. Appendicular schistosomiasis was first reported by Turner in 1909. It remains rare in non-endemic areas. The reported incidence rate of appendicular schistosomiasis in non-endemic areas is 0.001% and is due to traveling and labor migration. We report a case of a 29-year-old Egyptian gentleman who presented with a clinical picture of acute appendicitis and underwent a laparoscopic appendectomy. He was diagnosed histologically and post-operatively with a schistosomiasis of the appendix. The pathogenesis of appendicular schistosomiasis could be through two pathogenic pathways: granulomatous or obstructive. Treatment with appendectomy and anti-helminthic therapy are adequate to limit further extensive disease or chronic complications.

Keywords: Appendicular schistosomiasis; Schistosomiasis; Acute appendicitis

Introduction

Schistosomiasis, also known as bilharzia, bilharziosis, and snail fever, is a waterborne trematode, and is one of the most widespread parasitic diseases in the world [1,2]. It occurs in well-defined, endemic areas [1]. There are about 200 million people infected worldwide, 85% of whom are concentrated south of the Sahara in Africa [1]. Appendicular schistosomiasis was first reported by Turner in 1909 [3]. The most common organisms are *Schistosoma haematobium* and *S. mansoni* [4]. Schistosomiasis causing and presenting as acute appendicitis is reported in up to 6.3% of cases, which represents 28.6% of chronic appendicitis in endemic areas [5].

Case Presentation

A 29-year-old Egyptian gentleman presented to our Emergency Department with diffuse lower abdominal pain, nausea, and vomiting over duration of five days. He reported normal bowel habits and there was no fever. There was no history of previous abdominal surgical procedures. On examination, the patient was afebrile, conscious, and oriented. There was rebound tenderness and guarding in the lower abdomen, more so in the right iliac fossa area. Laboratory investigation showed an elevated white blood cell count. The patient was admitted to the surgical ward as a case of acute appendicitis and underwent an open appendectomy. The post-operative period was unremarkable. He tolerated a normal diet on the second post-operative day and was discharged from the hospital on the third post-operative day.

Microscopic examination of paraffin embedded 4 μm thick section of the appendix stained with hematoxylin and eosin (H&E) revealed transmural suppurative and granulomatous inflammatory infiltration consisting mainly of neutrophils, eosinophils, lymphocytes, and plasma cells (Figure 1). Non-necrotizing granulomas with histiocytes, eosinophils, and multinucleated Langerhans giant cells were seen surrounding the bilharziasis ova (Figure 2).

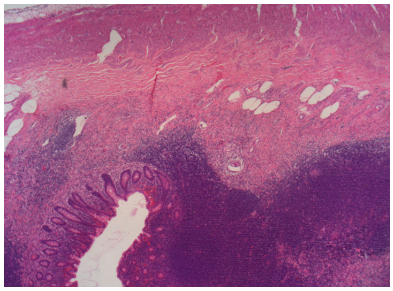

Figure 1: Low power view of the appendix with transmural inflammation (H&E).

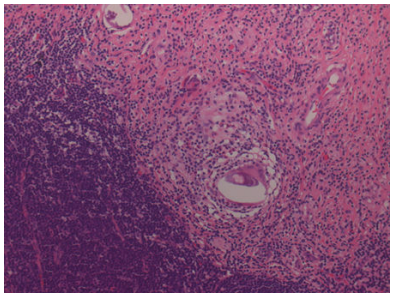

Figure 2: Non-necrotizing granuloma with eosinophilic infiltration and Schistosoma ova. High magnification (H&E).

Discussion

The diagnosis of appendicular schistosomiasis was purely a histopathological diagnosis [4,6]. There was no evidence in the patient's history or clinical examination of acute appendicitis which might indicate schistosomiasis of the appendix. There were no pathognomonic clinical or operative findings [4,6].

The pathogenesis of appendicular schistosomiasis could be caused through two pathogenic pathways: granulomatous or obstructive [6,7]. In the first, there would be an immunological granulomatous reaction to the parasitic infestation, leading to tissue destruction and acute appendicitis [6,7]. In the second, there would be long-standing inflammation and calcified ova in the wall of the appendix, which would lead to extensive fibrosis. Extensive fibrosis can lead to appendix lumen obstruction and, subsequently, bacterial infection [6,7]. In the present case, the microscopic findings were consistent with granulomatous pathogenesis [7].

The incidence of appendicular schistosomiasis is uncommon even in endemic areas [8]. It is reported by Duvie that the incidence rate is 6.2% in Nigeria [8]. Another study reported an incidence rate of schistosomiasis of the appendix in a non-endemic area of 0.001% [9]. The incidence rate of appendicular schistosomiasis in non-endemic areas is because of traveling and labor migration, which is significant because the foreign labor participation rate in Kuwait is 88.6% in the governmental and private sectors [2,6,10].

Conclusion

While the incidence rate is low, schistosomiasis could present and cause acute appendicitis in non-endemic areas. The diagnosis of appendicular schistosomiasis is purely histological. Treatment with appendectomy and anti-helminthic therapy are adequate to limit further extensive disease or chronic complications.

Conflicts of Interests

The authors declare no conflicts of interest.

References

1. No authors listed (2002) Questionnaires for schistosomiasis screening. Bull World Health Organ 80: 235-242.
2. de Cenarruzabeitia L, Landolfi S, Carrasco MA, (2012) Case report: Intestinal schistosomiasis as unusual aetiology for acute appendicitis, nowadays a rising disease in Western Countries. Case Reports in Infectious Diseases.
3. Turner SA (1909) Bilharziasis of the appendix. Trans Med J 5: 210.
4. Callisto M, Hisham H (2006) Schistosomiasis of the appendix. J R Soc Med 99: 473-474.
5. Helmy H, Shousha TA, Magdi M, Sabri T (2000) Appendicitis; appendicectomy and the value of endemic parasitic infestation. Egyptian Journal of Surgery 19: 87-91.
6. Weber G, Borer A, Zirkin HJ, Riesenberg K, Alkan M (1998) Schistosomiasis presenting as acute appendicitis in a traveler. J Travei Med 5: 147-148.
7. Satti MB, Tamimi DM, Al Sohaibani MO, Al Quorain A (1987) Appendicular schistosomiasis: A cause of clinical acute appendicitis? J ClinPathol 40: 424-428.
8. Duvie SO, Diffang C, Guirguis MN (1987) The effects of Schistosomahaematobium infestation on the vermiform appendix: The Nigerian experience. J Trop Med Hyg 90: 13-18.
9. Karatepe O, Adas G, Tukenmez M, Battal M, Altiok M, et al. (2009) Parasitic infestation as cause of acute appendicitis. G Chir 30: 426-428.
10. Kuwait Central Statistical Bureau (2016) Statistical review.