Case Report of Acute Abdomen Caused by Enterobiasis with Ectopic Infestation
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ABSTRACT
A case of acute abdomen with vague appendicular mass had been treated surgically. The histopathological examination of the biopsy specimen that had been taken during surgery from the appendix, greater omentum and from the lower edge of the right lobe of the liver proved to be due to Oxyuris infestation leading to a histiocytic granulomatous lesion in the omental tissue and adjacent hepatic area.

Keywords: acute abdomen, oxyuris, enterobiasis, acute cholecystitis.

1. Introduction

Entrobious. vermicularis is the only nematode that infects man (Neri et al., 1986). Enterobiasis is a widespread parasitic infection estimated to affect up to 200 million people worldwide. The association of oxyuris and appendicitis was first made in the late 19 century, when still initially documented this organism in the appendix lumen. The reported incidence of pinworm in appendectomy specimens of patients with presumed appendicitis ranged from 0.2% to 41.8%, the reported rates of inflammation in specimens from appendices infested with pinworm ranged from 13% to 37% (Akbulut et al., 2011).

The majority of such reports are in the German literature, which may be a reflexion of the very high incidence of oxyuriasis found in Germany in the past century. Between 71 - 97% of German schoolchildren are affected (Neumann and Wiedemann, 1950), as compared with 40 - 55 % in similar groups in the United Kingdom (Mac Keith and Watson, 1948). The findings in the published cases of genital oxyuriasis indicate that the worms (adult gravid females) find their way into the genital tract during their nocturnal wanderings over the perineum. They gain access to the uterus, Fallopian tubes, and peritoneal cavity by crawling up the lumen of the genital tract (Barnes and Perrnie, 1958). More recent studies indicated that the parasite can cause
appendicitis (Capaldi et al., 2000). Migration of the adult parasite or its larval stages seems to cause more pathological changes and blared clinical diagnosis of patients suffered from abdominal pain. The described case in this report prove that parasitic infestation of the meant parasite could be seen everywhere in the abdominal viscera when the appendix get perforated.

2. Case report

A male patient 35 year old serving in the Armey was presented to our Hospital (Sulaymania Military Hospital, IRAQ) complaining of pain in the right abdomen, fever, nausea and twice vomiting.

2.1 Patient past medical history

The patient had been admitted six months ago to the hospital and diagnosed as a case of acute cholecystitis on clinical grounds and was treated medically.

2.2 Clinical examination in the second admission:

Patient was febrile, temperature 39°C, look toxic with pulse rate of 120/min. regular, BP 130/90mmHg dehydrated, and dry mouth of fetor oris. Abdominal examination revealed tenderness and guarding over the right side of abdomen with a vague mass at the right lumber region of the abdomen.

2.3 Clinical laboratory investigation

A complete Blood count showed that the total white blood cells raised (WBC 17,000 /cm³), the erythrocyte sedimentation rate (ESR 25 mm/hr) and the hemoglobin concentration was (Hb 12 g/dl).

A clinical diagnosis of acute abdomen possibly due to acute cholecystitis or perforated appendicitis was set. Patient was counseled and an informed consent was signed for both the surgery and the use of photographic evidence for medical purposes.

3. Results

3.1 Operative findings

After proper preoperative assessment and resuscitation, surgery performed through midline laparotomy incision, exploratory laparatomy findings were seen as a well developed and localised appendicular mass, perforated appendix, with an inflamed part of the greater omentum rapping the appendix and also part of it adhered to an inflamed area at the lower edge of right lobe of liver. The appendix and inflamed part of the greater omentum has been removed.
Drainage after deroofing of a small abscess from the inferior border of the right lobe of the liver was done too. Specimens removed and send for histopathology. The patient had an uneventful postoperative course and was discharged from the hospital on the fifth post-operative day and returned on the tenth post-operative day for the removal of his stitches. The antibiotic cover used was clavulan 1gr IV, BID and metronidazole 500mg/8h IV infusion. Mebendazole 100 mg TDS orally, started after receiving the histopathology result.

3.2 Pathological investigations

The biopsies taken from the appendix, greater omentum and from the lower edge of the right lobe of the liver send for diagnostic morphology at the pathology department contained a small granulomatous area, 2X4 mm. In the centre of which were some parasitic remains. Serial sections were cut after tissue processing; few were stained with eosin and methylene blue or by Mallory's connective tissue stain, and the remainder with haematoxylin and eosin. It was found that the granuloma consisted of a central core containing parasitic eggs which had an asymmetrical outline and were approximately 30 x 15-10 Mm in size. They consisted of a hyperchromatic central mass surrounded by a thick transparent envelope (Fig.1), the egg-shells did not develop a blue colour with Mallory's stain, which indicated that they were not chitinous. These features are characteristic of oxyuris eggs. Dispersed among the eggs were a few fragments of tissue, apparently visceral remains, and round about the central collection was a hyaline eosinophilic capsule in which some nuclear structure could be seen. The capsule developed a deep blue colour with Mallory's stain, suggesting a chitinous composition. The absence of nuclei in the cuticle indicated that the worm/larvae at the time of the excision were dead.

The granulomatous reaction around the worm consisted of a fairly well demarcated zone, in which there were large numbers of degenerating eosinophils and other polymorphonuclear leucocytes together with lymphocytes and plasma cells (Fig.2). The granulation tissue close to the worm showed the greatest degenerative changes and contained a few strands of fibrinoid material. Around the granulomatous area the (omental stroma or hepatocytes) are heavily infiltrating by inflammatory cells, among which eosinophils were obviously abundant. The omental fragments not directly connected with the granuloma showed only an infiltration with eosinophils and histiocytes. Encapsulation by fibrous tissue and histiocytic reaction was evident (Fig.3) while calcification, foreign-body giant cells, and Charcot-Leyden crystals, which are said to be common in oxyuris granulomas, were not seen.

4. Discussion

Migration of the Entrobious vermicularis worm through the perforated inflamed appendix might be the most acceptable explanation to the infestation of the extra intestinal luminal sites,
like the liver or omentum in male patients. The capacity of the threadworm to live an almost harmless parasitic existence for fairly long time is denied. More important from the pathological aspect is that the case may allow certain conclusions to be drawn on the time required for an oxyuris granuloma(histiocytic and/or eosinophilic) to develop(Ardakani et al.,2011). The larval development stages to a non common area or tissue then enveloped by the proliferating fibrocytes and histiocytic cells as a retaliation response to injurious tissues and cells forming the clinically palpable mass. Our case in line with all the existing literature yields no elements capable of suggesting an accurate preoperative diagnosis. Only anamnestic evidence of previous oxyuriasis can help the clinician in this direction. It should be noted, however, that there are no significant differences in postoperative morbidity between "common" acute appendicitis and appendicitis due to oxyuriasis, when the parasitosis is adequately treated (Capald et al., 2000).

5. Conclusion

The objectives of reporting this case is to document the unusual findings in Omental and liver specimens during operative laparotomy of a patient clinically suspected of Acute abdomen which could be due to acute cholecystitis or perforated appendicitis. Unusual pathological findings might be seen during an operation of acute abdominal cases (laparotomy). All tissue removed during operation should be sent for routine histopathological examination. Clinical diagnosis is impossible, and the diagnosis can only be reached histologically, generally representing an unexpected surprise for the histopathologist and the surgeon too.

References


Mac Keith R and Watson JM (1948). Practitioner; 160 -264


Fig. 1. Histological section in a biopsy from an abscess of appendicular tissue shows Larval outlines recognized in tissue sections swamped in a pool of inflammatory debris. H&E X40.

Fig. 2. Histological section in tissue omentum showed granulomatous reaction around the worm consisted of a fairly well demarcated zone, in which there were numbers of degenerating inflammatory cells. H&E X25.
Fig.3. Histological section from biopsy of liver showed the encapsulation by fibrous tissue and histiocytic reaction around a cross section of worm larvae. H&E X25.