REVIEW OF PATHOLOGICAL DIAGNOSIS OF APPENDECECTOMY SPECIMENS RESECTED FROM PATEINTS WITH CLINICALLY SUSPECTED ACUTE APPENDICITIS AT KING ABDULAZIZ UNIVERSITY HOSPITAL, JEDDAH, SAUDI ARABIA

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ABSTRACT

OBJECTIVE : To determine the pathologically confirmed acute appendicitis in the appendecectomy specimens resected from Pateints with clinically suspected acute Appendicitis.

METHODS : Retrospective review of 623 resected vermiform appendices from patients operated on for clinical acute appendicitis over a peroid of 8 years at King Abdulaziz University Hospital, Jeddah, Saudi Arabia. Males represented 63.2% of the cases. Peak incidence was 21 to 30 years of age.

RESULTS : In 79.4% of cases, histological examination confirmed the presence of acute appendicitis. No significant pathological finding was present in 15.4% of the specimens. The remaining 5.2% of cases showed a spectrum of diseases including diverticulosis, benign and malignant neoplasms, and parasitic infections. The parasitic infections included schistosomiasis, enterobiasis, and amebiasis. Women had a significantly higher percentage of histologically normal appendices than men.

CONCLUSION : We conclude that the vermiform appendix may be the site of clinically unsuspected findings, may be resected inappropriately especially in females in the reproductive age group, and may be symptomatic in the two extremes of age.

KEY WORDS : appendicitis, acute abdomen, vermiform appendices

INTRODUCTION

Acute appendicitis is the most common acute surgical condition of the abdomen. Acute appendicitis is considered as the most common intra-abdominal condition requiring emergency surgery. The differential diagnosis of acute appendicitis is essentially the diagnosis of the acute abdomen, this because clinical manifestations are not specific. Treatment of uncomplicated acute appendicitis should be immediate resection. Though some patients have spontaneous subsidence of acute process, there is no way of predicting in which patients this will occur. The negative appendecectomy specimens is relatively common pathological diagnosis from patients with clinical diagnosis of acute appendicitis. In literature the risk of perforation is the disadvantage of having less frequent negative specimens. A prospective study of 623 resected specimens from consecutive patients diagnosed as having acute appendicitis was carried out in King Abdulaziz University Hospital, Jeddah, Saudi Arabia over a peroid of eight. .. ?

METHODS

This is retrospective study on 623 appendectomy specimens operated as acute appendicitis in King Abdulaziz University Hospital in the Western Region of Saudi Arabia. These cases were examined by reviewing all the histopathology reports and the slides of the specimens. The clinical histories were reviewed. From all the specimens reviewed two sections were taken from each resected appendix. One transversely from the middle and one longitudinally from the tip of the appendix. Gross examination was concentrated on measurements of the specimens, luminal contents, and serosal changes. The specimens were processed routinely by paraffin embedding and staining with Haematoxylin and Eosin. Special stains and immunohistochemistry stains were done in certain situations where specific pathological changes are suspected.

RESULT

Among 623 appendectomy specimens from patients operated as acute appendicitis, 79.4% showed histological features of acute appendicitis. No pathological changes were seen in 15.4% of the specimens. The remainder (5.2%) showed different pathological changes. The presence of negative appendecetomy specimens in female in age group from 20-30

years, is around 29.5% (vs 10.0% in the same age group of male) and 24% in age group 10-20 (vs 9.7% in the same age group of male). Regarding the sex distribution males represented 63.2% and females 36.8%. The percentage of insignificant pathological changes was 15.4 % in general. Regarding the gross examination of the appendectomy specimen, most of them range in length between 5-7 cm (41.7%). Very few cases were above 11 cm (1.3%). Sixty five percent showed congestion, fibrinopurulent (11.9), gross perforation (3.5%) and grossly unremarkable (22.3%). Twenty four percent of the resected specimens showed faecolith obstructing the lumen. 87.5% of those cases were associated with acute appendicitis while 12.5% showed no significant pathological changes. Regarding the microscopical examination, those cases confirmed microscopically as acute appendicitis revealed that 9.2% had the features of an early acute appendicitis based on the presence of scanty polymorphonuclear infiltrate, serosal congestion and perivascular neutrophilic emigration. Acute suppurative appendicitis was diagnosed in 73.5 %, based on the presence of polymorphonuc learleukocytes in the mucosa and musculosa. 7.7% diagnosed as acute gangrenous appendicitis based on the presence of gangrenous necrosis through the wall with hemorrhagic ulceration of the mucosa. perforated acute appendicitis was the diagnosis in 9.6 % based on the presence of morphologic evidence of perforation. Prominent hyperplastic lymphoid follicles causing luminal obstruction were found in 10% and most of them below the age of 10 years. Parasitic infections were found in 19 cases (2.9%) of the resected appendices. The most common is the appendiceal schisomiasis which was found in 16 cases. The ovae were found in the submucosa (62.5%) and in Musculosa (43.7%). All the schitosomal cases were diagnosed in male patients. Two cases showed Entrobius Vermicularis and both specimen had acute inflammatory infiltrate, increase tissue esinophils. Two cases had neoplastic involvement, one diagnosed as carcinoid tumor and the other one was differentiated adenocarcinoma.

Table (1): age incidence in cases operated as acute appendicitis

age groups	no. of cases	%
≤ 10	46	7.4%
10-20	205	32.9%
21-30	211	33.9%
31-40	106	17%
41-50	31	4.9%
51-60	15	2.4%
≥ 60	9	1.4%

table (2): sex incidence for acute appendicitis

sex	no. of cases	%
male	394	63.2
female	229	36.9

table (3): histopathological diagnosis for appendectomy specimens operated as acute appendicitis

	no. of cases	%
unremarkable	67	10.8%
follicular lymphoid hyperplasia	21	3.4%
fibrosis	9	1.4%
acute appendicitis	495	79.4%
chronic inflammation	8	1.3%
parasitic infection	19	3%
diverticulosis	2	0.32%
tumour	2	0.32%

table (4): histological types of acute appendicitis

type	no. of cases	%
early acute appendicitis	44	8.8%
acute suppurative appendicitis	369	74.5%
acute gangrenous appendicitis	51	10.3%
perforated suppurative appendicitis	31	6.3%
total	495	100%

2-Figure 3: amebiasis infection of the appendix showing the organisms stained psitively for PAS stain with clear halo around them (PAS, original power x200))

2-Figure 4 : Section show transverse section of the adult worm of entobius vermicularis in the lumen of the appendix.(Haematoxylen and eosin stain, original power x400)

DISCUSSION

The results presented indicate the presence of spectrum of appendiceal diseases in the appendecectomy specimens resected from patients with clinical diagnosis of acute appendicitis. This retrospective study showed that histological acute inflammation was found in about 79.4%. which similar to the results reported by others [1,2]. The presence of miscellaneous appendiceal diseases was seen in 5.2% of the specimens. Miscellaneous diseases other than the acute appendicitis were reported in 4% by Blair et al [1] and in 5% by Gupta et al [3]. In our study 15.4% of the resected appendices showed insignificant pathological changes (negative appendecectomy specimens or normal appendix). The rate of appendecectomy in our series is within the 15-25% range generally quoted in the literature [1, 4-7]. Regarding the age incidence the peak was found among the age group 21-30 years followed by 11-20 years which. Most of studies in the western countries showed the peak is usually in age group 10-20 years . Our study showed that above the age of 50 years. The male to female ratio is around 1.7:1. The pres-

somal infections in the development of clinical symptoms of acute appendicitis need to be studied. Two cases diagnosed as Entrobius vermicularis both were seen in children below 12 years. Both showed acute inflammation. This represented 0.3% of the total number compared to 1.4% by Gupta et al5 and 3.6 % by Blair et al 1(all of them were Entrobius vermicularis) . Entrobius vermicularis in appendecectomy specimens are more common than Schistosomiasis in western countries [1]. It is interesting to know that non of those eight cases reported by Blair et al [1] showed acute inflammation, so the exact cause of abdominal pain tn those patients remained uncertain. Diverticular disease were found in 2 cases (0.3%) which less than what is reported in western countries[15]. Lipton et al [15] reported 2% incidence of diverticular disease in appendecectomy specimens and reported more than a four-fold incidence of perforation in acute diverticulitis than acute appendicitis higher incidence of perforation than the. Tumor (one carcinoid and the other is adenocarcinoma) were found in 2 cases (0.3%) of cases which within the range present in literature [1,3,16,17]. Blair et al [1], reported 10%. One was carcinoid tumour, the other was well differentiated adenocarcinoma. Both cases were not suspected clinically. In conclusion we reported a retrospective study the histopathology of the resected appendices from 623 patients with clinical diagnosis of acute appendicitis operated at King Abdualziz uiversity hospital. Wide range of diseases were found in these specimens which not suspected clinically, some of them can be easily treated. This clearly support that routine histopathological examination of all resected appendices is very important to discover treatable and some un-expected lesions. We conclude that the vermiform appendix may be the site of clinically unsuspected findings, may be resected inappropriately especially in females in the reproductive age group, and may be symptomatic in the two extremes of age. Most cases of false clinical diagnosis were found among female between age of 20-30 years and among children below 10 years of age in both sexes. So, we suggest more clinical evaluation and more investigations among fernale within this age group to avoid misdiagnosis with gynecological diseases and in pediatric age group to avoid misdiagnosis with certain disease like mesenteric adenitis.

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