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Original article

Prevalence and Outcomes of Crohn's Disease Among Patients Presenting with Lower Abdominal Pain in the Surgical Department

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Abstract
Low abdominal pain is a common clinical complaint with a wide etiology, where one of them is Crohn's disease (CD). CD should be early diagnosed to avoid both late diagnosis and consequences in such patients. The aim of the present work is to investigate the incidence and clinical features of CD in 184 hospitalized patients to Albyeda Medical Center for lower abdomen pain. A retrospective study detected six of previously diagnosed patients with CD. The remaining 35 patients were discharged after an uneventful appendix test, and 143 were operated upon. Histological examination of the surgery revealed 8 additional cases of CD, bringing the overall incidence to 7.6%. It is noteworthy in that in young patients presenting with abdominal pain, one should consider CD as one of the possible etiologies.
Keywords:Crohn's Disease, Lower Abdominal Pain, Inflammatory Bowel Disease.

Introduction

Lower abdominal pain is one of the frequent reasons for emergency room visit, representing a wide range of disorders and diseases. The etiology may include acute appendicitis, pathology of the gynecogenital organs, diverticulitis, Crohn's disease. CD is a chronic condition with relapses due to inflammation that has the capability to affect any part of the gastrointestinal tract, from mouth to anus. The ileocecal area was the most common. It typically presents in individuals of all ages and is associated with nonspecific symptoms, such as abdominal pain, diarrhea, and weight loss. CD closeness to other acute diseases makes it challenging to diagnose, especially in an emergency environment. CD delays may result in inappropriate operations and extended periods of stay in the hospital, with adverse consequences [1].

Adding complexity to patient management, Crohn's disease patients have an increased risk of cancer, osteoporosis, anemia, nutritional inadequacy, depression, infection, and thrombosis. Maintaining the greatest level of preventative care is critical in their treatment. Half of the patients received a diagnosis. CD is typified by a non-continuous and ulcerative transmural inflammation often affecting the ileocaecal region, resulting in a stricturing or even fistulising phenotype in up to 50% of patients[1].

Diagnosis of CD is primarily clinical and historical and examination based and aided by laboratory, serological, radiographic, endoscopic, and histological evidence. The objectives of CD management are relief of symptoms and limitation of bowel inflammation, the latter aimed at preventing symptomatic recurrence and cumulative damage to the bowel[1].

It is to be noted that the developed countries have always been found to have a higher frequency and incidence of CD. There are plenty of articles discussing the incidence of CD throughout the world. Acute gastrointestinal pain can be an indication of a number of disorders, from benign self-limiting ailments to those that require surgical intervention. Abdominal pain must, therefore, be evaluated using an approach that considers possible diseases, patient history, physical exam, laboratory values, and radiographic studies[1].

Crohn's disease affects the gastrointestinal tract and is characterized by granulomatous inflammation. It is a very recurrent illness with an unpredictable course. CD incidence is currently increasing globally, particularly in Western countries, Asia, and the Arab world[2]. exact diagnosis of IBD is extremely crucial for treatment and patient protection as well as for the interpretation of epidemiologic data. CD might not be apparent, however, even after clinical, endoscopic, radiologic, macroscopic, and histologic examination. Indeed, 3%-10% of patients who have colonic inflammation share overlapping clinical and pathologic characteristics, and therefore it may be difficult to differentiate CD from other possibilities [3]. The peak annual rate of CD was 12.7 per 100,000 person-years in Europe, 5.0 in the Middle East and Asia, and 20.2 in North America [4].

The objective of this research is to examine the occurrence of CD patients who are admitted with lower abdominal pain, to contrast the findings of disease restaging after various therapeutic treatments, and to pinpoint early and precise diagnosis as a factor that can promote clinical treatment safety and efficacy. The ileum and colon are the most frequent sites of CD [5].Appendiceal Crohn's disease is an uncommon disease with an incidence of 0.1% to 2.0% and half of the resected specimens in the setting of CD with

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involvement of appendix [6]. It was initially explained by Meyerding and Bertram in 1953. Histopathological examination will ultimately determine whether it is CD or an acute appendicitis that is not related to CD. Secondly, appendiceal CD was thought to be a separate entity from idiopathic granulomatos appendicietis [5]. When CD is limited to the appendix, it may present with chronic or recurrent symptoms and macroscopically, it may present as a volume increase that ranges from 1.5 cm to 2 cm and will be adherent to adjacent structures due to chronic inflammatory changes. The gold standard for this condition is still appendectomy [7]. The most typical sign of appendiceal CD is lower right quadrant discomfort, which can last for two or more days and is indistinguishable from acute appendicitis. Histologic features include crypt abscesses, lymphoid aggregates, ulcerative mucosal alteration, transmural chronic inflammation with noticeable fibrous thickening of the wall, muscle hypertrophy, and nerve hyperplasia. [8]

Proximal early CD of the appendix has been reported to be followed by an initially better clinical course than CD of the small or large intestine, with extended postoperative remissions and a recurrence rate of 8-10% [6].Endothelial expression of Fas-L by endothelial cells has also recently been implicated to be specifically engaged in mucosal immune regulation and pathogenesis of CD and IBD [9]. Yersinia infection Intestinal TB, foreign body reaction, actinomycosis, appendiceal diverticulitis,, and maybe even malignancy should be considered as differential diagnoses [10–15]. In cases of right iliac fossa tumor with external or internal fistulation, intractible hemorrhage, free perforation, or blocking ileal stricture that is not improving with medical or endoscopic treatment, ileal resection is unquestionably necessary [16].

Methods

In this study, we retrospectively evaluated 184 patients with lower abdominal discomfort who visited Albayeda Medical Center's surgical department, using patient data from the statistics department. The sample included 161 men and 23 women aged 18 to 38. The patient's clinical history was classified into two categories: Crohn's disease and other conditions. Patients with and without Crohn's disease.

Results

The study included 184 participants, with 14 diagnosed with Crohn’s disease and 170 without. The overall mean age was 28.54 years (SD = 5.68), and the median age was 29. Participants with Crohn’s disease tended to be slightly older on average. The sample was predominantly male, though the proportion of females was higher in the Crohn’s group compared to the non-Crohn’s group.

Table 1. Overall Demographic Characteristics of the Study Sample (N = 184)

Characteristic	Value
Age (Mean ± SD)	28.54 ± 5.68
Age Range	18 – 38
Median Age	29
Male, n (%)	161 (87.5%)
Female, n (%)	23 (12.5%)
Crohn’s Disease, n (%)	14 (7.6%)
No Crohn’s, n (%)	170 (92.4%)

Participants with Crohn’s disease had a slightly higher mean age (30.36 ± 6.71) compared to those without (28.44 ± 5.62). Median age was also higher in the Crohn’s group (31.50 vs 29.00). Tests of normality indicated that age was not normally distributed among groups (Shapiro-Wilk $p < .001$). Given the non-normal distribution, a Mann–Whitney U test was used, revealing no statistically significant difference in age between groups ($U = 954.000$, $Z = –1.234$, $p = .217$).Here also, we note the overall prevalence of crohn's disease in lower abdominal pain cases is 7.6% which is near the overall world prevalence of crohn's disease.

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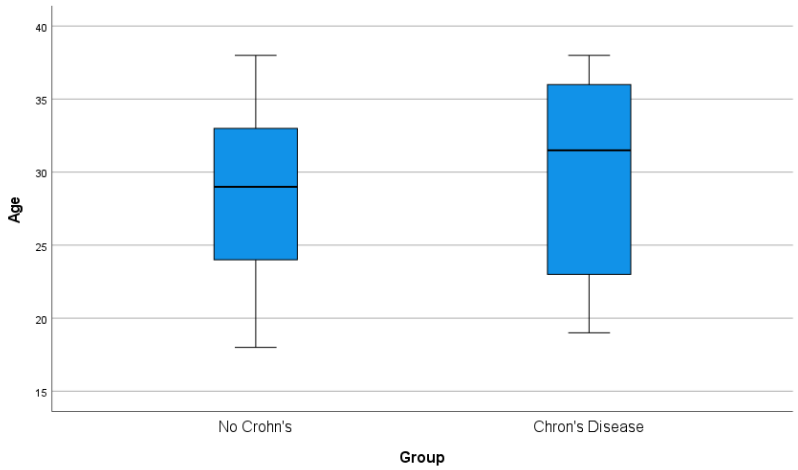

Fig 1. Boxplot of age distribution among participants with and without Crohn's disease.

Gender distribution differed significantly between participants with and without Crohn's disease. Among those without Crohn's, 89.4% were male and 10.6% female, while the Crohn's group included 64.3% males and 35.7% females. The Pearson Chi-Square test (x^2 = 7.466, p =.006) and Fisher's Exact Test (p =.018) found a significant correlation between gender and Crohn's disease status. These data indicate that females were proportionately more represented in the Crohn's group than the non-Crohn's group.

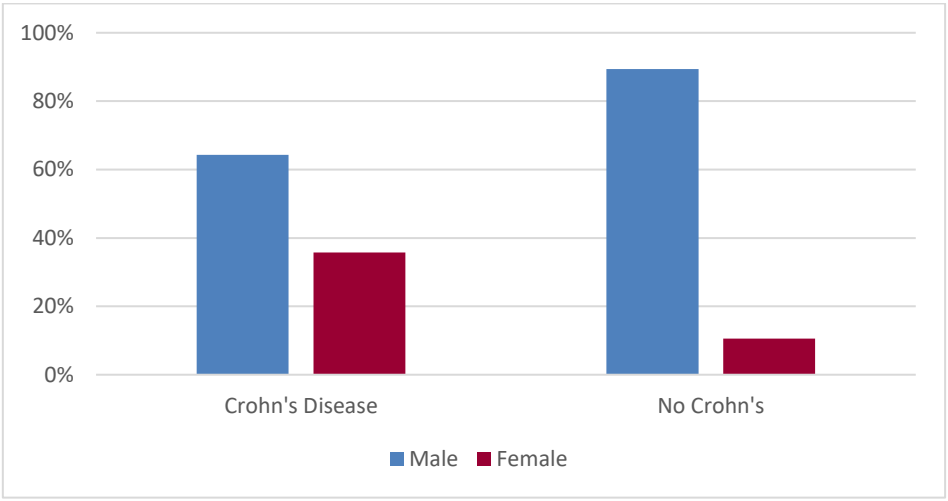

Fig 2. Bar chart showing gender distribution within Crohn's and non-Crohn's groups.

Discussion

The large proportion of surgical cases (77.7%) reflects how difficult it is to distinguish between Crohn's disease and other acute abdominal illnesses such as appendicitis using clinical criteria. At surgery in such patients, histological diagnosis remains the principal diagnostic criterion for Crohn's disease, corroborating previous evidence [17]. These findings concurred with the published literature, indicating that Crohn's disease might appear suddenly, simulating surgical pathology and rendering rapid detection unlikely. The inclusion of Crohn's disease patients in the surgical population makes the examination of the specimen and close observation during the postoperative period imperative [18-19]. We also experienced differences between the prevalence measured by Vienna and Montreal categories [20,21].Case-control studies showed that juvenile male patients with erythema nodosum [22-24]. Aphthous ulcers and stricturing-phenotype CD have a higher likelihood to develop UGI-CD [25].Some characteristics, such as an early diagnosis age and stricturing phenotype, have been identified to be high-risk predictors for a severe form of CD [26]. Sun et al. also established that UGI-CD had 36% recurrence of CD [20]. Abdominal surgery rates in UGI-CD patients were 66.7%, which was greater than the CD general surgical rate of 47% [27].Women are more likely to develop gastrointestinal disorders than men and are at a greater risk for anxiety and depression. Female disease activity was reported to be greater, and physical tolerance and psychological tolerance may be the reasons for this variation [28]. Acute appendicitis prevails in the same age groups and resembles CD symptoms too. Early diagnosis of CD must be done to avoid major surgical outcomes. It has been proposed that if CD is being suspected on the basis of intraoperative surgical resection for acute appendicitis, a macroscopically normal appendix may be left in situ in the case of absence of complicated illness [29]. Moreover, a prospective randomized controlled trial demonstrated that

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clinical and surgical recurrence did not occur more frequently in the case of active inflammation in areas of resection margins [30].

In order to differentiate CD from appendicitis and other potential diagnoses, contrast-enhanced CT is helpful. In contrast with the focal inflammation of a swollen appendix, appendicolith, and peri-appendiceal fat alterations in appendicitis, CD exhibits intestinal wall thickening (>1 cm) fat stranding, mucosal hyperenhancement, and the "comb sign" [31, 32]. With documented 87–92% blockage and 100% abscess visualization sensitivities, MRI has comparable diagnostic sensitivity [33]. A effective non-invasive discriminative marker, fecal calprotectin is a neutrophil-derived indicator of intestinal inflammation that is generally elevated in CD but not in simple appendicitis [34, 35].CTE (CT enterography) and MRE (MR enterography) are useful investigations for diagnosing IBD. They share some of the benefits of endoscopy in that the whole bowel can be assessed, which is useful in presumed Crohn's disease. CTE and MRE are non-invasive, usually more tolerable than endoscopy, and may identify extraintestinal disease [36].

Conclusion

This study has emphasized the importance of recognizing Crohn's disease as a differential diagnosis in young patients with lower abdominal pain. With a prevalence rate of 7.6%, CD is an important cause of these presentations. An early diagnosis and a proper treatment plan are essential in reducing surgical intervention rates and improving clinical outcomes. Future studies should focus on developing and validating non-invasive diagnostic methods that will allow for early detection and treatment of CD.

Conflict of interest. Nil

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