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PATIENT CHARACTERISTICS AND DIAGNOSTIC APPROACH IN APPECTOMISED PATIENTS

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ABSTRACT

In cases of acute appendicitis, when considering that typical symptoms are observed in only 60% of the patients, preoperative definite diagnosis carries some difficulties even for the most experienced surgeons. The necessity for diversification of diagnostic methods is a requirement to decrease the rate of negative appendectomy risk of the surgeon. The present study aimed to investigate the patient characteristics of cases who had undergone appendectomy due to acute appendicitis. The patients undergoing appendectomy in the General Surgery Clinic of our hospital between September 2013 and December 2013 were retrospectively evaluated. Appendectomies were performed to a total of 141 patients. The ratio of acute appendicitis in the pathology results of the patients in which surgery was decided according to the physical examination findings without ultrasonography was 79.6%; this ratio was 73.1% in patients in which acute appendicitis was suspected in ultrasonography and this ratio was 55% in patients in which the appendix could not be visualized in the ultrasonography. We think that a good assessment in the preoperative period is one of the most important factors that would decrease the rate of negative laparotomy and increase the rate of effective treatment.

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INTRODUCTION

In cases of acute appendicitis, when considering that typical symptoms are observed in only 60% of the patients, preoperative definite diagnosis carries some difficulties even for the most experienced surgeons. The necessity for diversification of diagnostic methods is a requirement to decrease the rate of negative appendectomy risk of the surgeon (Ma 2010). When compared with some other general surgical procedures, appendectomies have a relatively increased risk of postoperative complications, which also contributes greatly to the efforts of decreasing the rate of negative appendectomy risk (Simpson 2008). Although the current rate of negative appendectomy is reported to be at a range 15-25%, this ratio could increase up to 40% in female patients (Ma 2010). Especially in female patients in the reproductive period, the close vicinity of the appendix to the internal genital organs or gynecological pathologies such as dysmenorrhea have the potential to produce confusion in the differential diagnosis. Furthermore, in very young and very old patients, mistakes could be observed due to atypical presentation or difficulties in

communication. The present study aimed to investigate the patient characteristics of cases who had undergone appendectomy due to acute appendicitis.

MATERIALS AND METHODS

The patients undergoing appendectomy in the General Surgery Clinic of our hospital between September 2013 and December 2013 were retrospectively evaluated. A total of 141 patients were evaluated in terms of age, gender, social security, International Classification of Diseases-10 (ICD-10) diagnosis code. The patients who had undergone appendectomy were assessed as to whether preoperative ultrasonography(US) was done or not, and radiological findings of ultrasonography performed on patients were evaluated. Pathologically, all preperates were evaluated in terms of presence of appendicitis and the presence of fecaloid matter in the appendix. The pathology results of the patients in which there was acute and perforated appendicitis in the ultrasonography, in which the appendix could not be visualized by ultrasonography, and the pathology results of the patients who had been operated on according to the physical examination findings without any radiological examination were evaluated according to the accuracy of the diagnosis of acute and perforated appendicitis.

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RESULTS

Appendectomies were performed to a total of 141 patients. One hundred three (73%) patients were male and 33 (27%) were female (Table 1). Eighty patients (56.9%) were aged between 15 and 25 years. One hundred twenty (85.1%) patients had social security and nine patients (6.4%) were Syrian refugees. When the ICD-10 prediagnosis codes were examined, it was observed that the most frequent three diagnoses constituted 119 of the patients (84.4%). These were, in decreasing frequency, abdominal pain: R10.4 (54-38.3%), acute appendicitis: K35 (51-36.2%), and acute abdominal pain: R10.0 (14-9.9%). Ultrasonography was conducted on 92 (65.2%) of the patients and 49 (34.8%) patients underwent surgery according to the physical examination findings. In 40 patients in which ultrasonography was conducted (43.4%), the appendix could not be visualized, 52 patients (56.5%) were reported to have appendicitis; among these, 48 patients were reported to have acute appendicitis, three were reported to have perforated appendicitis, and one was reported to have plastron appendicitis (Table 2). The appendix was reported to be normal in one patient. When the pathology results were evaluated, 99 appendectomy materials (70.2%) were consistent with acute appendicitis, and the presence of fecaloid matter was observed in 75 (53.2%) patients. In one patient, a parasite egg was observed. The results of the ultrasonography and pathology reports were compared. The ratio of acute appendicitis in the pathology results of the patients in which surgery was decided according to the physical examination findings without ultrasonography was 79.6%; this ratio was 73.1% in patients in which acute appendicitis was suspected in ultrasonography and this ratio was 55% in patients in which the appendix could not be visualized in the ultrasonography.

Table 1. Demographic data of patients included the study

Gender	Frequency	Percent
Male	103	73,0
Female	38	27,0
Total	141	100,0

Table 2. Relation between physical examination-ultrasonography and pathology results

		Pathology			
		Acute Appendicitis		Not Acute Appendicitis	
		Count	Row N %	Count	Row N %
US	US could not be completed	39	79,6%	10	20,4%
	US: Acute appendicitis	38	73,1%	14	26,9%
	US: Appendix could not be observed	22	55,0%	18	45,0%

DISCUSSION

Acute appendicitis is one of the most frequent causes of acute abdomen in surgical clinics. When the treatment is delayed, simple appendicitis results with perforation and the delay process increases the morbidity and mortality. Still, the gold standard in surgical clinics is to operate on the patients before the clinical findings are fully established (Fazio 2006). In 50% of the patients with appendicitis, the laboratory tests or clinical examination findings are insufficient and cause negative

laparotomy in 35-45% of young women in the reproductive period (Fazio 2006; Birnbaum 1998). The most reliable method for diagnosis is still clinical anamnesis and physical examination. In spite of typical limitations, ultrasonography is the first and most frequently used modality in the evaluation of the appendix (Balthazar 1994; Rao 1997; Malone 1993). In ultrasonography, the observation of mesenteric lymph nodes, defining pathologies such as plastron, periappendicular abscesses, or ovarian cysts or tumors instead of appendicitis are also possible (Jaffe 2005; Borushok 1990). There are studies that suggest that the rate of negative appendectomy has decreased from 25% to 6-10%, together with the radiological imaging methods and the development of new approaches in decision making for the method to be chosen (Gaitini 2011). However, debates related to the method to be chosen continue. Although the sensitivity (68.4% versus 100%) and the specificity (94.5% versus 100%) of ultrasonography fall behind computed tomography (CT), the thought that ultrasonography should be the first choice has gained importance. Despite the diagnostic superiority of CT, the ionization radiation load caused by CT and its being almost three-fold more expensive than ultrasonography has been effective in the development of this perspective.

On the other hand, the evaluation of all examinations as appropriate diagnostic options should not be overlooked in the postoperative period, either. Similar to the present study, the postoperative pathology results and preoperative examinations should necessarily be correlated in large-scaled series (Reich 2011). There are a limited number of studies suggesting that magnetic resonance imaging could also be used in diagnosis (Zhu 2012). Diagnostic laparotomy has a role in cases in which a definite decision could not be made with the preoperative examination results (Hussain 2009). In classical treatment, laparoscopic appendectomy and open appendectomy procedures are performed in selected cases. On the other hand, in the study of Turhan et al. (Turhan 2009), it was reported that non-operative follow-up under multiple antibiotic suppressions in appropriate cases has similar results with laparotomy in medical terms and decreases the costs. In the light of these findings, the researchers of the current study believe that a good assessment in the preoperative period is one of the most important factors that would decrease the rate of negative laparotomy and increase the rate of effective treatment.

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