ORIGINAL ARTICLE

Acute appendicitis over the age of 50: The evaluation of the impact of clinical variables on operative and post-operative outcomes

Oğuz Hançerlioğulları, M.D., Mehmet Zeki Buldanlı, M.D., Burak Uçaner, M.D., Mehmet Sabri Çiftçi, M.D., Sacit Altuğ Kesikli, M.D.

Department of General Surgery, University of Health Sciences, Gülhane Training and Research Hospital, Ankara-*Türkiye*

ABSTRACT

BACKGROUND: Studies reported higher mortality and perforation rates, marked increase in delay from symptom onset to hospital admission, significant complication rates, as well as excessive malignancy outcomes on histopathological examinations in patients older than 50 years of age with acute appendicitis. Herein, it was aimed to reveal the clinical, laboratory, and imaging findings that might affect the operative and post-operative findings in a population of patients over the age of 50 who were diagnosed with and operated for acute appendicitis.

METHODS: Patients who were older than 50 years of age and operated for the diagnosis acute appendicitis between January 2017 and January 2020 in a single tertiary hospital were included in this retrospective study. Demographic data, comorbidities, laboratory and imaging findings, operative and post-operative results, surgical complications, as well as the histopathological evaluation of the excised materials of all patients were analyzed in detail.

RESULTS: A total of 152 patients who were older than 50 years of age and who underwent emergent appendectomy with a median age of 59 were included in the study. It was demonstrated that the development of surgical complications was significantly associated with post-operative hospitalization at the intensive care unit (ICU) and the presence of 2 or more comorbidities preoperatively ($p=0.006$ and $p=0.002$, respectively). It was observed that the duration of total hospitalization was longer ($p<0.001$), pre-operative albumin levels were lower ($p=0.017$), and the rate of hospitalization at ICU during the follow-up period was higher ($p=0.006$) in patients with surgical complications. Pre-operative white blood cell counts appeared to be significantly increases in patients who had open appendectomy ($p=0.047$). Moreover, both the duration of pre-operative abdominal pain and pre-operative C-reactive protein levels was found to significantly correlate with the duration of hospitalization ($p<0.001$ and $p<0.001$, respectively).

CONCLUSION: The management of acute appendicitis in late adulthood was suggested to be challenging both in terms of diagnosis and post-operative processes. Therefore, pre-operative clinical, laboratory, and imaging data obtained from these patients should be carefully and elaborately evaluated.

Keywords: Acute appendicitis; appendectomy; emergency surgery; morbidity; surgical complications.

INTRODUCTION

Acute appendicitis is one of the most common diseases in general surgical emergency practice. Moreover, it is frequently seen in young patients. The incidence of acute appendicitis was shown to increase with increasing age after adolescence.[1] Considering the rapid boost among the middle-aged and elderly population in Turkey as well as western populations, it was thought that the number of applications to emergency services with acute abdominal pain and the rate of acute appendicitis diagnosis would escalate. It was previously suggested that over the age of 50, approximately

Cite this article as: Hançerlioğulları O, Buldanlı MZ, Uçaner B, Çiftçi MS, Kesikli SA. Acute appendicitis over the age of 50: The evaluation of the impact of clinical variables on operative and post-operative outcomes. Ulus Travma Acil Cerrahi Derg 2022;28:1419-1427.

Address for correspondence: Oğuz Hançerlioğulları, M.D.
Sağlık Bilimleri Üniversitesi Gülhane Eğitim ve Araştırma Hastanesi, Genel Cerrahi Kliniği, Ankara, Türkiye
Tel: +90 312 - 304 20 00 E-mail: oguzhancerli@gmail.com

Ulus Travma Acil Cerrahi Derg 2022;28(10):1419-1427 DOI: 10.14744/tjtes.2022.86229 Submitted: 23.05.2022 Accepted: 17.08.2022

15% of the patients who were admitted to the emergency department with acute abdominal pain were diagnosed with acute appendicitis.[2] Studies reported higher mortality and perforation rates, marked increase in delay from symptom onset to hospital admission, significant complication rates as well as excessive malignancy outcomes on histopathological examinations in elderly patients with acute appendicitis.[3] Although the term "elderly" was traditionally used to define the population over the age of 65, the age of various populations of interest in current literature which mainly focused on the elderly patients distributed widely, ranging from 60 to 80 years of age.[4,5] Moreover, little is known about the situation when patients over the age of 50 are considered. It was aimed in this study to reveal the clinical, laboratory, and imaging findings that might affect the operative and post-operative findings in a population of patients over the age of 50 who were diagnosed with and operated for acute appendicitis.

MATERIALS AND METHODS

Patients who were older than 50 years of age and operated for the diagnosis acute appendicitis between January 2017 and January 2020 in a single tertiary hospital were included in this retrospective study. Demographic data, comorbidities, and laboratory parameters such as complete blood cells counts (CBC), C-reactive protein levels (CRP), and albumin levels (Alb), the radiological imaging modality used for the diagnosis, the duration of pre-operative abdominal pain in days, American Society of Anesthesiologists scores, the selected type of the operation and incision, evaluation of surgical complications according to Clavien–Dindo classification system, the use of closed suction drains, the length of hospital stay, the duration of follow-up at the intensive care unit (ICU), as well as the histopathological evaluation of the excised materials of all patients were analyzed in detail. Patients under the age of 50, patients who were operated for other reasons in addition to appendectomy, patients with missing hospital records, and post-operative follow-up data were excluded from this study (Fig. 1).

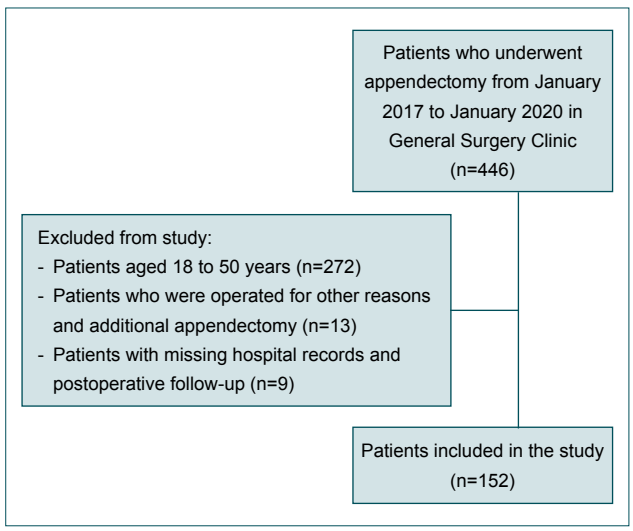

Figure 1. Study flow diagram.

Among the CBC and biochemical parameters, mainly white blood cell counts (WBC) (normal range: 4.49–12.68×10^3/µl), CRP (normal range: 0–0.5 mg/dL), and albumin (normal range: 3.4–5.4 g/dL) levels were evaluated in this study. It was observed that abdominal ultrasonography (US) and/or computed tomography (CT) were used as principal radiological imaging techniques.

All data collection and analyses were carried out with the approval of the Local Ethics Committee (Decision date/number: 02.03.2022–2022/19).

Statistical Methods

This study was designed as a retrospective study. Using the Raosoft Sample Size Calculator (Raosoft Inc, Seattle, WA, USA) with a type I α error of 0.05 and an acceptable confidence level of 85%, the sample size was calculated to be 141 in this study. An additional loss of 10% of cases was also included in the sample size, and hence, the final study sample size was decided to include 152 cases.

Continuous variables were defined by descriptive statistics (mean, median, minimum-maximum, and standard variation). Normal distribution of continuous variables was evaluated using the Kolmogorov–Simirnov and Shapiro–Wilk tests. Two groups of continuous variables that were normally distributed were compared with Student's t-test, whereas two groups that were not normally distributed were compared with Mann–Whitney U-test. More than two groups of continuous variables that were not normally distributed were compared using the Kruskal–Wallis test. Dichotomous and categorical variables in two groups were compared with the Pearson Chi-square test. Fisher's exact test was used where appropriate. The evaluation of the correlation between nonparametric variables was performed using the Spearman's rank test and the strength of the correlation was determined and demonstrated according to the calculated Spearman's Rho values. The level of statistical significance was determined as 0.05. All analyses were performed using IBM SPSS Statistics® Statistical Software Program version 25 (IBM Corporation, 1 New Orchard Road, Armonk, New York, United States).

RESULTS

Analysis of Demographic and Clinical Data

A total of 50 years old or older 152 patients who underwent emergent appendectomy were included in the study. The study population consisted of 60 male and 92 female patients with a median age of 59 (minimum-maximum=50–85 years). It was observed that the median age of the female patients was higher than that of the male patients (p=0.020). There was no significant difference between the pre-operative WBC counts (p=0.141) or Alb levels (p=0.116) among male or female patients. However, pre-operative CRP levels

of the female subjects were significantly higher than those of the male subjects (p=0.013, Table 1).

The selected type of the operation as well as the rate of the appearance of post-operative surgical complications were similarly found not to differ between the two genders (p=0.235 and p=0.763, respectively). Nevertheless, abdominal CT scans were used significantly more common for diagnostic purposes in the female study subjects (p=0.046), (Table 2). Still, post-operative hospitalization at the ICU and presence of at least two or more comorbidities preoperatively were demonstrated to be significantly associated with the development of post-operative surgical complications (p=0.006 and p=0.002, respectively, Table 3).

The Comparison of Patients According to the Selected Type of the Operation (Open versus Laparoscopic Technique)

The operation technique selected (open vs. laparoscopic) was found not to associate with age, gender, presence of any comorbidities, pre-operative CRP levels, radiological imaging modalities, or post-operative surgical complications (p=0.360, p=0.235, p=0.397, p=0.457, p=0.386, and p=0.364, respectively). However, pre-operative WBC counts were shown to be much more elevated and hospitalization at ICU during follow-up was more common in patients with open appendectomy (p=0.047 and p=0.030, respectively, Table 4).

The Comparison of Patients According to the Radiological Imaging Modality Used for Diagnosis and the Development of Surgical Complications Classified under Clavien–Dindo Classification System

The use of abdominopelvic CT scans was found to significantly associate with the median patient age, the duration of pre-operative abdominal pain (), the duration of total hospitalization, and pre-operative CRP as well as Albs, and accordingly, patients in whom CT scans were used for diagnosis were older and they experienced pre-operative abdominal pain for a longer period of time (p=0.045 and p<0.001, respectively). Moreover, the duration of total hospitalization was significantly longer and pre-operative CRP levels were significantly higher in those patients (p<0.001 and p=0.007, respectively). In contrast, pre-operative Albs were demonstrated to be significantly lower in patients when CT scans were required for the diagnosis (p=0.002, Table 5).

Similarly, it was observed that the duration of total hospitalization as well as hospitalization at ICU during follow-up was longer and pre-operative Albs were lower in patients with surgical complications (p<0.001, p=0.017, and p=0.006, respectively). In addition, previous diagnosis of two or more comorbidities and importantly, previous diagnosis of a cardiac disease, was more common in patients who developed post-operative surgical complications during the follow-up (p=0.003 and p=0.001, respectively, Table 6).

Clinical Correlations

The correlations of clinical and operative parameters within the whole patient group were calculated using the Spearman's rank correlation test. It was clearly demonstrated that the duration of pre-operative abdominal pain was strongly correlated with the duration of hospitalization (Spearman's Rho correlation coefficient=0.632, p<0.001). Furthermore, the duration of hospitalization of the patients appeared to exhibit a strong correlation with pre-operative CRP levels (Spearman's Rho correlation coefficient=0.613, p<0.001, Table 7). In contrast, pre-operative Albs were found to in-

Table 1. Summary of demographic data of all patients

	Whole group	Male	Female	p
Study subjects (n)	152	60	92	
Median age (years) (Min-Max)	59 (50–85)	56 (50–84)	60.5 (50–85)	0.020
Median duration of preoperative abdominal pain days (Min-Max)	2 (1–15)	2 (1–7)	2 (1–15)	0.056
Median duration of hospitalization days (Min-Max)	3 (1–16)	2 (1–13)	3 (1–16)	0.142
Median preoperative Albumin levels g/dL (Min-Max)	3.62 (2.40–5.00)	3.77 (2.60–5.00)	3.51 (2.40–4.52)	0.116
Preoperative WBC count x10^3/µl (Mean±2.SEM)	14747.37±711.58	15396.67±1014.55	14323.91±965.89	0.141
Median preoperative CRP levels mg/dL (Min-Max)	93 (1.3–459.0)	54.5 (1.3–290.0)	108 (1.4–459)	0.013
Number of patients with at least one comorbid disease	82	28	54	0.146
Patients with HT	50	16	34	0.187
Patients with DM	26	7	19	0.150
Patients with cardiac diseases	26	9	17	0.578
Number of patients with ≥2 comorbidities	45	14	31	0.171

SEM: Standard error of the mean; Min: Minimum; Max: Maximum; CRP: C-Reactive protein; WBC: White blood cells; HT: Hypertension; DM: Diabetes Mellitus. Statistically significant results (p<0.05) were written in bold format.

Table 2. Summary of clinical data of patients

	Whole group	Male	Female	p
Operation type				0.235
Appendectomy (including median or paramedian laparotomy)	105	44	61	
Laparoscopic appendectomy	49	16	33	
Incision type				0.174
McBurney	80	37	43	
Median or paramedian	25	7	18	
3-Port entry	49	16	33	
The use of closed suction drains	63	22	41	0.334
Appendectomy	46	18	28	
Laparoscopic appendectomy	17	4	13	0.244
Pathology				
Cecile serrated adenoma, lymphoid hyperplasia or acute suppurative/perforated/necrotic appendicitis	143	57	86	1.000
Low grade mucinous neoplasms	6	3	3	
Mucinous adenocarcinoma	3	1	2	
Radiological imaging modality used for diagnosis				
Ultrasonography	76	36	40	0.046
Computed tomography	76	24	52	
ASA classification of the patients				
ASA – I	36	20	16	0.398
ASA – II	102	33	69	
ASA – III	13	6	7	
ASA – IV	1	1	0	
Postoperative hospitalization at the ICU	19	7	12	0.802
Postoperative surgical complications developed according to Clavien-Dindo classification system				
Class I	9	3	6	0.763
Class II	2	1	1	
Class III	3	1	2	

ASA: American Society of Anesthesiologists; ICU: Intensive care unit. Statistically significant results ($p<0.05$) were written in bold format.

Table 3. Factors associated with the development of postoperative surgical complications

	Statistical Test	χ^2 Value	p
Presence of any preoperative comorbidities	Fisher's Exact Test		0.088
Use of closed suction drains	Pearson Chi-Square test	3.231	0.072
Presence of ≥2 comorbidities preoperatively	Pearson Chi-Square test	9.231	0.002
Postoperative hospitalization at the ICU	Pearson Chi-Square test	7.506	0.006
Operation type	Fisher's Exact Test and		0.550
Radiological imaging modality used for the diagnosis	Pearson Chi-Square test	0.286	0.593
Type of the incision performed (McBurney and midline vs. laparoscopic 3 port entries)	Fisher's Exact Test		0.227
ASA scores of the patients	Fisher's Exact Test		0.125

ASA: American Society of Anesthesiologists; ICU: Intensive care unit; vs.: Versus. Statistically significant results ($p<0.05$) were written in bold format.

Table 4. The comparison of patients operated with open versus laparoscopic appendectomy

Characteristics	Open appendectomy	Laparoscopic appendectomy	p
Median age (years) (Min-Max)	59 (50–84)	60 (50–85)	0.360
Median duration of preoperative abdominal pain days (Min-Max)	2 (1–9)	2 (1–15)	0.589
Median duration of total hospitalization days (Min-Max)	3 (1–13)	2 (1–16)	0.341
Median preoperative Albumin levels g/dL (Min-Max)	3.72 (2.53–5.00)	3.51 (2.40–4.52)	0.229
Preoperative CRP levels mg/dL	103.0 (1.7–371.0)	85.5 (1.3–459.0)	0.457
Preoperative WBC count x10^3/µl (Mean±2.SEM)	15235±860	13722±1228	0.047
Gender			
Male	44	16	0.235
Female	59	33	
Presence of any previous comorbidities			
None	45	25	.397
Present	58	24	
Presence of previous diagnosis of HT			
None	72	30	0.287
Present	31	19	
Presence of previous diagnosis of DM			
None	81	45	0.043
Present	22	4	
Presence of previous diagnosis of cardiac diseases			
None	84	42	0.524
Present	19	7	
Presence of previous diagnosis of ≥2 comorbidities			
None	71	36	0.567
Present	32	13	
Use of closed suction drains			
None	57	32	0.244
Present	46	17	
Pathology result of the specimen			
Sessile serrated adenoma/lymphoid hyperplasia/	98	45	0.419
Acute suppurative/perforated appendicitis			
Any low-grade mucinous neoplasms or adenocarcinoma	5	4	
Development of any postoperative complications and/or morbidity			
None	91	46	0.355
Present	11	3	
Imaging modality used for diagnosis			
US	54	22	0.386
CT	49	27	
Hospitalization at ICU during follow-up			
None	86	47	0.030
Present	17	2	
Development of any surgical complications classified according to the Clavien-Dindo classification			
None	92	46	0.364
Present	11	3	

HT: Hypertension; DM: Diabetes mellitus; US: Ultrasonography; CT: Computed tomography; ICU: Intensive care unit; SEM: Standard error of the mean; Min: Minimum; Max: Maximum; WBC: White blood cells; CRP: C-reactive protein. Statistically significant results ($p<0.05$) were written in bold format.

Table 5. The comparison of patients according to the radiological imaging modality used for diagnosis

Characteristics	US	CT	p
Median age (years) (Min-Max)	56.5 (50–84)	60 (50–85)	0.045
Median duration of preoperative abdominal pain days (Min-Max)	2 (1–9)	2.5 (1–15)	<0.001
Median duration of total hospitalization days (Min-Max)	2 (1–10)	4 (1–16)	<0.001
Median preoperative Albumin levels g/dL (Min-Max)	3.80 (2.40–4.52)	3.44 (2.44–5.00)	0.002
Preoperative CRP levels mg/dL	67.0 (1.3–298.0)	129.0 (1.4–459.0)	0.007
Preoperative WBC count (Mean±2.SEM)	14967±952	14528±1062	0.539

US: Ultrasonography; CT: Computed tomography; CRP: C-reactive protein; WBC: White blood cells; SEM: Standard error of the mean; Min: Minimum; Max: Maximum. Statistically significant results (p<0.05) were written in bold format.

versely correlate with the duration of the hospitalization of the patients and the pre-operative CRP levels (Spearman's Rho correlation coefficients were −0.511 and −0.410, respectively, p<0.001 for both correlations).

DISCUSSION

Studies focusing on the surgical emergencies in the middle ages and late adulthood revealed controversial results in terms of both pre-operative evaluation and management of post-operative processes.[6] Especially for acute appendicitis, being a disease of youngsters and young adults with declining incidence rates on aging, acute appendicitis is a particular disease entity worth investigating. which could contribute to the development of certain disease specific algorithms that might result in an update or even shift of the current clinical approach.[7]

Sülberg et al.[8] reported that CRP levels were strongly correlated with inflammation and perforation in acute appendicitis in the elderly patients. In addition, Yang et al.[9] suggested that CRP levels were more valuable in the diagnosis of acute appendicitis than neutrophil counts and leukocyte counts in a geriatric patient population. In this study, it was observed that the CRP levels were significantly more elevated in the female patients than those in the male patient group. In addition, CRP levels were identified to surge to higher levels when CT scans were used as the primary diagnostic tool. As expected, patients with higher CRP levels were shown to require longer hospitalization.

Abdominal US has been widely accepted as the primary imaging modality in the diagnosis of acute appendicitis. However, others recommended the use of abdominopelvic CT scans as the first diagnostic imaging tool due to the difficulty of differential diagnosis, especially in the older population. This diagnostic difficulty was indicated to be particularly evident in female patients due to emergent gynecological diseases.[10,11] Likewise, this study demonstrated that CT scans were used more frequently with increasing patient age. Moreover, in comparison to the male patient group, abdominopelvic CT scans were found to be used more common in female patients as the primary radiological imaging modality.

Notably, the previous studies have stated that with less morbidity and favorable duration of hospitalization, laparoscopic appendectomy was a safe and feasible procedure in the elderly patients.[12] The results of this study similarly indicated that except for the rate of hospitalization at ICU during the follow-up, neither demographic nor clinical parameters or the outcomes were significantly different between the laparoscopic and open appendectomy patient groups. The open technique was demonstrated to be applied more common in patients with higher WBC counts and in patients with type II diabetes mellitus. Of note, the rate of patients hospitalized at ICU during the follow-up after open appendectomy was significantly higher than that after laparoscopic appendectomy.

As in other surgical emergencies, older patient populations might succumb to an increasing number if surgical complications after appendectomy. It was suggested that the risk of wound infections and intra-abdominal abscesses would rise after appendectomy in elderly patients.[13] In this study, however, it was observed that surgical complications were especially associated with the presence of at least two or more comorbidities preoperatively and lower Albs. Besides, post-operative hospitalization at the ICU was found to be more common in patients with surgical complications. In addition, it was shown that the duration of hospitalization of patients with surgical complications was prolonged. Poillucci et al.[14] reported in their prospective cohort study that open appendectomy was more often associated with surgical complications in old patient subjects. Yet, the evaluation of data regarding surgical complications in this study revealed no statistically significant difference between the open and laparoscopic appendectomy groups. The current literature generally suggests that the incidence of neoplasms is markedly increased as patients get older. It was already reported in numerous studies that the development of appendiceal neoplasms was more common in middle-aged or older patients than that in younger patients.[15] Despite the fact that neoplasms and adenocarcinomas were indeed encountered fol-

Table 6. The comparison of patients according to the development of surgical complications classified under Clavien-Dindo classification system

Characteristics	No complication	Presence of complications	p
Median age (years) (Min-Max)	59 (50–85)	58.5 (50–84)	0.448
Median duration of preoperative abdominal pain days (Min-Max)	2 (1–9)	2 (1–15)	0.264
Median duration of total hospitalization days (Min-Max)	2 (1–13)	6.5 (1–16)	<0.001
Median preoperative Albumin levels g/dL (Min-Max)	3.72 (2.40–5.00)	3.05 (2.67–4.20)	0.017
Preoperative CRP levels mg/dL	98.0 (1.3–459.0)	74.5 (14.0–371.0)	0.852
Preoperative WBC count x10^3/µl (Mean±2.SEM)	14589±732	16307±2738	0.163
Patient gender			
Male	55	5	0.763
Female	83	9	
Presence of any previous comorbidities			
None	67	3	0.052
Present	71	11	
Presence of previous diagnosis of HT			
None	95	7	0.153
Present	43	7	
Presence of previous diagnosis of DM			
None	114	12	0.769
Present	24	2	
Presence of previous diagnosis of cardiac diseases			
None	119	7	0.001
Present	19	7	
Presence of previous diagnosis of ≥2 comorbidities			
None	102	5	0.003
Present	36	9	
Operation type			
Appendectomy	92	11	0.364
Laparoscopic appendectomy	46	3	
Use of closed suction drains			
None	84	5	0.069
Present	54	9	
Pathology result of the specimen			
Sessile serrated adenoma/lymphoid hyperplasia/	131	12	0.164
Acute suppurative/ perforated appendicitis			
Any low-grade mucinous neoplasms or adenocarcinoma	7	2	
Imaging modality used for diagnosis			
US	70	6	0.575
CT	68	8	
Hospitalization at ICU during follow-up			
None	124	9	0.006
Present	14	5	
Patient ASA scores			
ASA I - ASA II	127	11	0.097
ASA III - ASA IV	11	3	

HT: Hypertension; DM: Diabetes mellitus; US: Ultrasonography; CT: Computed tomography; ICU: Intensive care unit; WBC: White blood cells; CRP: C-reactive protein; ASA: American Society of Anesthesiologists; SEM: Standard error of the mean; Min: Minimum; Max: Maximum. Statistically significant results (p<0.05) were written in bold format.

Table 7. Calculated correlations within the patient group. Only the correlations in which p was <0.05 are listed and when p was >0.05, the box is colored in gray. The numbers within the boxes represent Spearman's Rho values, demonstrating the strength of the correlation

	Age	Duration of preoperative pain	Duration of hospitalization	Preoperative Albumin levels	Preoperative WBC count	Preoperative CRP levels
Age	1.000	0.194	0.341	-0.289		0.255
Duration of preoperative abdominal pain	0.194	1.000	0.632	-0.414		0.521
Duration of hospitalization	0.341	0.632	1.000	-0.511		0.613
Preoperative Albumin levels	-0.289	-0.414	-0.511	1.000		-0.410
Preoperative WBC count						0.185
Preoperative CRP levels	0.255	0.521	0.613	-0.410	0.185	1.000

WBC: White blood cells; CRP: C-reactive protein.

lowing detailed examination and analyses of the pathology reports of the patients' specimens in this study, no statistically significant differences could be observed in any group comparisons.

It was previously proposed in several studies that the development of complicated appendicitis was amplified with prolonged duration of pre-operative abdominal pain which might result in perforation of the development of plastron.[16] In addition to causing diagnostic difficulties, delay between the onset of symptoms and surgery might also affect post-operative morbidity.[17,18] Accordingly in this study, the longer was the duration of pre-operative abdominal pain the longer that was he duration of hospital stay. In addition, although the use of CT scans for diagnostic purposes was more common, no statistically significant difference could be observed in the development of surgical complications.

A great number of studies reported that diabetes mellitus and cardiac diseases were more common in patients over the age of 50.[19] Furthermore, previous literature suggested that chronic diseases were influential in the development of morbidity and mortality, especially in emergency surgical procedures. Correspondingly, it was demonstrated in this study that surgical complications were more common as the number of comorbidities increased.[20] In addition, open appendectomy technique was found to be more commonly preferred in patients with diabetes mellitus. Finally, the examination of patient subgroups with different comorbidities in this study revealed that surgical complications developed more frequently in the patient subgroup with a cardiac disease.

Conclusion

Acute appendicitis is a pathology that should always be acknowledged in the differential diagnosis of acute abdominal pain in the population over the age of 50. Therefore, pre-operative clinical, laboratory, and imaging data obtained from these patients should be carefully and elaborately evaluated. Appropriate use of these data for diagnosis and treatment might help to improve the management of the operative and post-operative disease processes resulting in safer and more reliable patient outcomes.

Ethics Committee Approval: This study was approved by the University of Health Sciences, Gülhane Training and Research Hospital Clinical Research Ethics Committee (Date: 02.03.2022, Decision No: 2022/19).

Peer-review: Internally peer-reviewed.

Authorship Contributions: Concept: O.H.; Design: O.H.; Supervision: O.H.; Resource: B.U.; Materials: M.S.Ç.; Data: M.S.Ç.; Analysis: S.A.K.; Literature search: M.Z.B.; Writing: M.Z.B.; Critical revision: O.H.

Conflict of Interest: None declared.

Financial Disclosure: The authors declared that this study has received no financial support.

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ORİJİNAL ÇALIŞMA - *ÖZ*

Elli yaş üstü hastalarda akut apandisit: Klinik değişkenlerin ameliyat ve ameliyat sonrası sonuçlara etkisinin değerlendirilmesi

Dr. Oğuz Hançerlioğulları, Dr. Mehmet Zeki Buldanlı, Dr. Burak Uçaner, Dr. Mehmet Sabri Çiftçi, Dr. Sacit Altuğ Kesikli

Sağlık Bilimleri Üniversitesi Gülhane Eğitim ve Araştırma Hastanesi, Genel Cerrahi Kliniği, Ankara

AMAÇ: Elli yaş üzerindeki akut apandisit hastalarında yapılan çalışmalarda daha yüksek mortalite, daha yüksek perforasyon oranları, semptom başlangıcından hastaneye yatışa kadar daha fazla gecikme, daha yüksek komplikasyon oranları ve histopatolojik incelemelerde daha yüksek malignite sonuçları bildirilmiştir. Bu çalışmada, akut apandisit tanısı alan ve bu tanı nedeniyle ameliyat edilen 50 yaş ve üzeri bir hasta popülasyonunda ameliyat ve ameliyat sonrası bulguları etkileyebilecek klinik, laboratuvar ve görüntüleme bulgularının aydınlatılması amaçlandı.

GEREÇ VE YÖNTEM: Bu geriye dönük çalışmaya, Ocak 2017 ile Ocak 2020 arasında akut apandisit nedeniyle tek bir üçüncü basamak hastanede ameliyat edilen 50 yaş ve üzerindeki tüm hastalar alındı. Hastaların demografik verileri, komorbiditeleri, laboratuvar ve görüntüleme bulguları, ameliyat ve ameliyat sonrası sonuçları, hastalarda gelişen cerrahi komplikasyonlar ve alınan örneklerin histopatolojik değerlendirmeleri detaylı olarak incelendi.

BULGULAR: Ortanca yaşı 59 olan, acil apendektomi yapılan 50 yaş ve üzerinde toplam 152 hasta çalışmaya alındı. Ameliyat öncesi iki ya da daha fazla konorbidite varlığının ve ameliyat sonrası yoğun bakım ünitesinde (YBÜ) yatış süresinin cerrahi komplikasyonların gelişimiyle anlamlı derecede ilişkili olduğu gösterildi (sırasıyla, p=0.002 ve p=0.006). Cerrahi komplikasyon gelişen hastalarda toplam yatış süresinin daha uzun (p<0.001), ameliyat öncesi albümin düzeylerinin daha düşük (p=0.017) ve takipte YBÜ'de yatış süresinin daha yüksek (p=0.006) olduğu görüldü. Açık apendektomi yapılan hastalarda ameliyat öncesi lökosit düzeylerinin daha yüksek olduğu görüldü (p=0.047). Ameliyat öncesi karın ağrısı süresinin hastanede yatış süresi ile güçlü bir şekilde ilişkili olduğu gözlendi (p<0.001). Ayrıca hastaların hastanede yatış süreleri ile ameliyat öncesi C-reaktif protein düzeyleri arasında güçlü bir korelasyon saptandı (p<0.001).

TARTIŞMA: Akut apandisitin geç erişkinlerde yönetiminin tanı ve ameliyat sonrası süreçler açısından zorlu olduğu öne sürülmüştür. Bu nedenle, bu hastalara ait ameliyat öncesi klinik, laboratuvar ve görüntüleme verileri dikkatli ve titizlikle değerlendirilmelidir.

Anahtar sözcükler: Acil cerrahi; akut apandisit; apendektomi; cerrahi komplikasyonlar; morbidite.

Ulus Travma Acil Cerrahi Derg 2022;28(10):1419-1427 doi: 10.14744/tjtes.2022.86229