ORIGINAL ARTICLE

What has changed in children's appendicitis during the COVID-19 pandemic?

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ABSTRACT

BACKGROUND: The present study aimed to investigate the changes in the course of acute appendicitis during the pandemic period by comparing the cases treated during the coronavirus disease 2019 (COVID-19) pandemic with those in the pre-pandemic period.

METHODS: The study was conducted with 601 children aged 1–18 years who were operated for acute appendicitis between May 1, 2019, and February 29, 2020 (Group I) and between March 1 and December 31, 2020 (Group II). The demographic and disease characteristics as well as the treatment processes were compared between the groups.

RESULTS: It was found that 59.1% (n=355) of the cases included in the study were in Group I and 40.9% (n=246) were in Group II. During the pandemic period; due to the concerns of families about contracting a contagious disease for both themselves and their children, and warnings by health professionals and government officials that they should not leave their homes and not come to the hospital unless there is an emergency, the time to apply to the hospital has been extended. Before the pandemic, 20.3% of the patients presented to the hospital on the 1st day of their complaints, where during the pandemic, only 2% of the patients reported to the hospital on the 1st day, and 15% presented after 4 days or more. As a result, the rate of perforated appendicitis, which was formerly 10.4%, increased to 24.8% during the pandemic period ($p<0.01$). During the pandemic, we operated on four patients with positive COVID-19 test results. There were no complications related to COVID-19 and surgery in our patients.

CONCLUSION: Concern of the current pandemic resulted in late presentation to the hospital, increase in the number of perforated appendicitis, and prolonged hospital stay.

Keywords: Acute appendicitis; COVID-19; pandemic; perforated appendicitis, surgery.

INTRODUCTION

The World Health Organization declared the coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) as a pandemic on March 11, 2020. In the beginning, the infection occurred mostly in adults and in different clinical presentations. However, children can be infected with COVID-19 just like adults. Gastrointestinal and cutaneous symptoms were reported in children in addition to fever and respiratory symptoms.[1,2] The COVID-19 pandemic, which affected the entire world, impacted the health systems of all the countries, including Turkey. It caused delays in non-urgent surgeries in Turkey. In our clinic, only emergency operations such as those for acute appendicitis were performed as a result of the pandemic.

Acute appendicitis is the most common cause of abdominal pain in patients presenting to the emergency department and emergency surgical procedures performed worldwide during childhood.[3,4] Some advocate antibiotic treatment and conservative therapy in selected cases in addition to open and laparoscopic surgery in the treatment of acute appendicitis.[5–8] In acute appendicitis, early diagnosis and onset of treatment are very important to prevent complications.

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The symptoms of acute appendicitis may be similar to the gastrointestinal symptoms of patients infected with SARS-CoV-2. This should be kept in mind, especially in the differential diagnosis of patients with a positive polymerase chain reaction (PCR) result for COVID-19 at the time of admittance, since these gastrointestinal symptoms may indicate multisystem inflammatory syndrome (MIS-C) in children.[9]

Studies on the management of acute appendicitis during the COVID-19 pandemic have been reported in adults.[6,10] Studies in the pediatric age group, on the other hand, are limited to case reports and small patient groups. Hence, the present study aimed to investigate the changes in the course of acute appendicitis during the pandemic period by comparing the cases treated during the pandemic with those in the pre-pandemic period.

MATERIALS AND METHODS

This study was carried out on a total of 601 children aged 1–18 years who were operated for acute appendicitis in the Pediatric Surgery Clinic, Ümraniye Training and Research Hospital, Health Sciences University (SBU).

The patients divided into two groups, namely, pre-pandemic (May 1, 2019–February 29, 2020: Group I) and post-pandemic (March 1, 2020–December 31, 2020: Group II). The study protocol was approved by the SBU Ethics Committee B.10.1.TKH.4.34.H.GP.0.01/61.

The medical records of the patients enrolled in the study were analyzed retrospectively. Age, gender, presentation complaint and duration, pre-operative laboratory results (white blood cell [WBC] count, C-reactive protein [CRP] level), USG and CT reports, surgical findings, hospital stay, surgical method (open or laparoscopic surgery), post-operative complications, and histopathological results were recorded for the patients in both groups. The histopathological examination results were classified as lymphoid hyperplasia (LH), acute appendicitis, and perforated appendicitis in accordance with the inflammation findings.

A part of the patients who presented to the emergency service with complaints similar to acute appendicitis were diagnosed to have MIS-C by the pediatricians upon consultation with our clinic. Such patients, who were treated by pediatricians, were excluded from this study.

Patients diagnosed with acute appendicitis in our clinic are operated immediately after pre-operative preparations are completed. Patients diagnosed with acute appendicitis during the pandemic period underwent a COVID-19 test by PCR method. Pre-operative hydration and antibiotic therapy were started in these patients who were treated in single rooms. At the beginning of the COVID-19 pandemic, the PCR test results in our hospital were received in 24 h due to the high patient load. Therefore, during the initial period, the patients were operated without waiting for the PCR test results. After the PCR test results were made available within 2 h, the operations were performed after the reports were received. All surgeries performed during the pandemic period were carried out with adequate COVID-19 infection control measures and personal protection measures in the clinic and the operating room.

Number Cruncher Statistical System (Kaysville, Utah, USA) software program was used for the statistical analysis. Descriptive statistical methods (mean, standard deviation, median, frequency, ratio, minimum, and maximum) were used to evaluate the study data. Kolmogorov-Smirnov, Shapiro-Wilk test, and graphical evaluations were employed to test the suitability of the quantitative data to normal distribution. Student t-test was used for two-group comparisons of normally distributed quantitative data, whereas Dunn Test was used for three group of post hoc evaluations of Kruskal–Wallis test non-normally distributed data; Mann–Whitney U test was used in the evaluations according to the two groups. Pearson's Chi-square test was used to compare the qualitative data. Significance was assessed at least at the level of $p<0.05$.

RESULTS

The study was conducted with a total of 601 patients, including 191 girls (31.8%) and 410 boys (68.2%) at the Pediatric Surgery Clinic, Ümraniye Training and Research Hospital, Health Sciences University, between May 1, 2019, and December 31, 2020. The ages of the patients ranged from 2.7 to 17.9 years, with a mean of 11.75±3.83 years.

In the pre-pandemic period, 1092 of the 7329 patients who applied to the emergency department of our hospital with the complaint of abdominal pain were consulted. Of these patients, 355 (32.5%) were operated with the diagnosis of acute appendicitis. During the pandemic, 686 of the 3087 patients who applied with the complaint of abdominal pain were consulted. Of these patients, 246 (35.8%) were operated with the diagnosis of acute appendicitis.

It was found that 59.1% (n=355) of the cases included in the study were in Group I and 40.9% (n=246) were in Group II. The demographic and disease characteristics of the patients in Group I and Group II are summarized in Table 1. The mean age of the patients was 11.77±3.84 in Group I and 11.72±3.82 in Group II. There was no statistically significant difference between the groups in terms of mean age and gender distribution of the patients ($p>0.05$).

The duration of complaints of the 601 patients enrolled in the study ranged from 1 to 10 days, with an average of 2.45±1.17 days and a median of 2 days. This rate was 2.14±0.99 days in Group I and 2.90±1.26 days in Group II. The duration of

Table 1. Evaluation of demographic and disease characteristics by groups

		Total (n=601)	Group I (n=355)	Group II (n=246)	p
		n (%)	n (%)	n (%)	
Demographic features					
Age (years)	Min–Max (Median)	2.7–17.9 (12)	2.7–17.9 (12)	3–17.9 (12)	[a]0.869
	Mean±SD	11.75±3.83	11.77±3.84	11.72±3.82	
Gender	Female	191 (31.8)	112 (31.5)	79 (32.1)	[b]0.884
	Male	410 (68.2)	243 (68.5)	167 (67.9)	
Disease characteristics					
Complaint period (days)	Min–Max (Median)	1–10 (2)	1–10 (2)	1–10 (3)	[c]0.001**
	Mean±SD	2.45±1.17	2.14±0.99	2.90±1.26	
	1 day	77 (12.8)	72 (20.3)	5 (2.0)	
	2 days	291 (48.4)	198 (55.8)	93 (37.8)	
	3 days	181 (30.1)	70 (19.7)	111 (45.1)	
	≥4 days	52 (8.7)	15 (4.2)	37 (15.0)	
CRP	Min–Max (Median)	0.1–30 (2)	0.1–30 (2)	0.1–15.6 (2)	[c]0.014*
	Mean±SD	3.08±3.60	2.90±3.70	3.35±3.43	
WBC (x10^3)	Min–Max (Median)	5.6–29.4 (14.5)	5.9–29.4 (14.1)	5.6–29 (15)	[a]0.049*
	Mean±SD	15.05±4.69	14.75±4.90	15.50±4.33	
Diagnostic criteria	USG	419 (69.7)	256 (72.1)	163 (66.3)	[b]0.230
	CT	67 (11.1)	34 (9.6)	33 (13.4)	
	Clinical examination	115 (19.1)	65 (18.3)	50 (20.3)	

[a]Student's t–Test. [b]Pearson's Chi–square Test. [c]Mann-Whitney U Test. **p<0.01. *p<0.05. CRP: C-reactive protein; WBC: White blood cell; SD: Standard deviation; USG: Ultrasonography; CT: Computed tomography.

complaints for Group I was 1 day in 20.3% (n=72), 2 days in 55.8% (n=198), 3 days in 19.7% (n=70), and ≥4 days in 4.2% (n=15) of the patients. In case of Group II, the duration was 1 day in 2% (5), 2 days in 37.8% (93), 3 days in 45.1% (111), and ≥4 days in 15% (37) of the patients. A statistically significant difference was found between the two groups in the duration of the complaints (p<0.01) (Fig. 1).

The mean CRP value of the patients was 2.90±3.70 in Group I and 3.35±3.43 in Group II. A statistically significant difference was found between the CRP measurements of the two groups (p<0.05); the measurements were higher in Group II than in Group I. The mean WBC count of the patients was 14.75±4.90 in Group I and 15.50±4.33 in Group II. A statistically significant difference was found between the WBC measurements of the two groups (p<0.05); the measurements were higher in Group II compared to Group I.

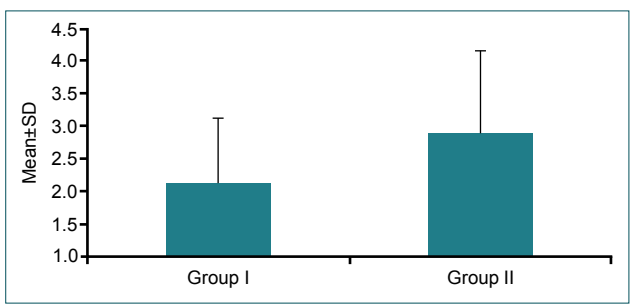

Figure 1. Distribution of complaint period of the groups.

To confirm the diagnosis, USG was performed in 72.1% (n=256) and Computed tomography (CT) in 9.6% (n=67) of the patients in Group I. Furthermore, 18.3% of these patients (n=65) were diagnosed only by means of clinical examination. In Group II, 66.3% (n=163) of the patients were diagnosed by USG, 13.4% (n=33) by CT, and 20.3% (n=50) only by clinical examination. There was no statistically significant difference between the two groups in terms of the diagnostic criteria (p>0.05).

The characteristics of the patients in Group I and Group II with regard to the treatment process are summarized in Table 2. Open surgery was applied to 87.5% (n=526) of the patients included in the study, whereas laparoscopic operation was applied to 12.5% (n=75) of the patients. A statistically significant difference was found between the two groups in the surgery type (p<0.05); the rate of laparoscopic surgery was higher in Group II patients than in Group I patients.

Complications were observed in 5.3% (n=32) of the patients. Wound infection was seen in 75.0% (n=24) of the 32 patients,

Table 2. Evaluation of characteristics regarding treatment process by groups

		Total (n=601)	Group I (n=355)	Group II (n=246)	p
		n (%)	n (%)	n (%)	
Type of surgery	Open	526 (87.5)	319 (89.9)	207 (84.1)	[b]0.037*
	Laparoscopic	75 (12.5)	36 (10.1)	39 (15.9)	
Complication	No	569 (94.7)	336 (94.6)	233 (94.7)	[b]0.971
	Yes	32 (5.3)	19 (5.4)	13 (5.3)	
	Wound infection	24 (75.0)	13 (68.4)	11 (84.6)	
	Intra-abdominal abscess	6 (18.8)	4 (21.1)	2 (15.4)	
	Ileus	2 (6.3)	2 (10.5)	0 (0)	
Pathology	Acute	470 (78.2)	292 (82.3)	178 (72.4)	[b]0.001**
	Perforated	98 (16.3)	37 (10.4)	61 (24.8)	
	LH	33 (5.5)	26 (7.3)	7 (2.8)	
Length of hospital stay (days)	Min–Max (Median)	2–20 (3)	2–17 (3)	2–20 (3)	[c]0.001**
	Mean±SD	4.84±2.96	4.59±2.70	5.20±3.27	

[ab]Pearson Chi-square Test. [c]Mann-Whitney U Test. **p<0.01. *p<0.05. SD: Standard deviation.

intra-abdominal abscess in 18.8% (n=6), and ileus in 6.3% (n=2). Complications were detected in 5.4% (n=19) of the patients in Group I and 5.3% (n=13) in Group II. Wound infection was seen in 68.4% (n=13) of the 19 patients in Group I, intra-abdominal abscess in 21.1% (n=4), and ileus in 10.5% (n=2). Of the 13 patients who developed complications in Group II, 84.6% (n=11) had wound infection and 15.4% (n=2) had intra-abdominal abscess. There was no statistically significant difference between the complication rates of the two groups (p>0.05).

A review of the pathology results proved that 78.2% (n=470) of the patients had acute appendicitis, 16.3% (n=98) had perforated appendicitis, and 5.5% (n=33) had LH. The pathological results of the patients in Group I were as follows: 82.3% (n=292) had acute appendicitis, 10.4% (n=37) had perforated appendicitis, and 7.3% (n=26) had LH. On the other hand, in Group II, 72.4% (n=178) had acute appendicitis, 24.8% (n=61) had perforated appendicitis, and 2.8% (n=7) had LH. A statistically significant difference was found between the two groups in their pathology results (p<0.01). The rate of perforated appendicitis was higher in Group II patients when compared with Group I patients (Fig. 2).

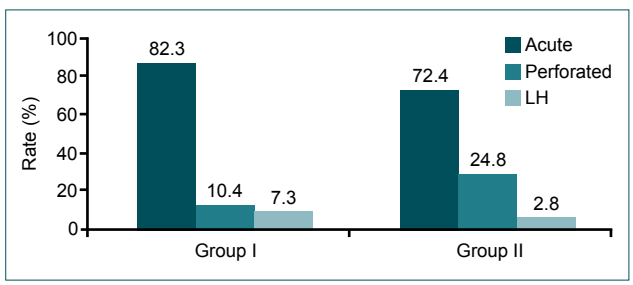

Figure 2. Distribution of pathology findings of the groups.

A statistically significant difference was found between the duration of complaints according to the pathology results of Group I and Group II cases (p<0.01). The evaluation of pathology types according to the duration of complaints is shown in Table 3. As a result of the pairwise comparisons made to determine the difference; the duration of complaints of cases with perforated pathology was found to be statistically significantly higher than those with acute and LH (p<0.01). When the groups were compared, it was found that the duration of complaints of acute and perforated cases in Group II was statistically significantly higher than Group I (p<0.01).

The length of stay in the hospital ranged from 2 to 20 days, with an average of 4.84±2.96 days and a median of 3 days. While the duration was 4.59±2.70 days in Group I, it was 5.20±3.27 days in Group II. A statistically significant difference was found between the two groups in the length of hospital stay (p<0.01); Group II patients stayed in the hospital longer than Group I patients.

It was determined that 4 (1.6%) of the patients (Group II) who were operated for acute appendicitis during the pandemic tested positive for COVID-19. The characteristics of these patients are summarized in Table 4. Three of the four patients with a positive PCR test result were male and one was female. All of the patients had approached the hospital because of abdominal pain for 3 days. Laparoscopic appendectomy was performed in one patient and open surgery in three patients. Two of the patients had acute appendicitis and the other two had perforated appendicitis. Preoperatively, it was not known that the first three patients had COVID-19, and the test results were obtained only after the surgery. The fourth patient was operated after obtaining a positive

Table 3. Evaluation of pathology types according to duration of complaints

		Group I Compliant period (days)		Group II Compliant periods (days)	
		Mean±SD	Median (Min-Max)	Mean±SD	Median (Min-Max)
Pathology	Acute	2.03±0.92	2 (1–10)	2.69±0.96	3 (1–10)
	Perforated	2.95±1.39	3 (2–7)	3.57±1.77	3 (1–10)
	LH	2.12±0.59	2 (1–3)	2.29±0.49	2 (2–3)
p		[d]0.001**		[d]0.001**	

[d]Kruskal Wallis Test. **p<0.01. SD: Standard deviation.

Table 4. Characteristics of patients positive for COVID-19

	Patient 1	Patient 2	Patient 3	Patient 4
Age (years)	10	12	17	12
Gender	Male	Male	Male	Girl
Length of symptoms (days)	3	3	3	3
Symptoms	Abdominal pain and vomiting	Abdominal pain	Abdominal pain and vomiting	Abdominal pain and vomiting
CRP (mg/dl)	0.2	2	0.2	11.9
WBC (x10³ µl)	21	8.7	5.4	17
Diagnostic criteria	USG	CT	USG	USG
	10 mm	8 mm	7 mm	8 mm
Type of surgery	Open	Open	Laparoscopic	Open
Operation finding	Perforated appendicitis Peritonitis	Acute appendicitis	Acute appendicitis	Perforated appendicitis Peritonitis
Pathological finding	Perforated appendicitis	Acute appendicitis	Acute appendicitis	Perforated appendicitis
Length of hospital stay (days)	10	5	7	8
PCR test result	Positive	Positive	Positive	Positive

CRP: C-reactive protein; WBC: White blood cell; PCR: Polymerase chain reaction.

PCR test result for COVID-19. Due to the onset of fever and cough on post-operative day 1 in the first patient with perforated appendicitis, he/she was treated with ceftriaxone and metronidazole. Besides, diffuse pneumonic infiltration was detected on chest X-ray and thorax CT. Antibiotic therapy was completed in 10 days. After clinical recovery, the patient was placed in home isolation. No complications related to COVID-19 or surgery developed in any of the four patients, and antiviral therapy was not needed.

DISCUSSION

After its initial detection in December 2019, COVID-19 turned into a pandemic within a short time.[2] The pandemic affected the lives as well as the healthcare sectors of all countries. In addition to the increased workload of health-care professionals, it also led to a number of uncertainties with regard to the implementation of surgical procedures. The pandemic caused delays in non-urgent surgeries in Turkey during the periods of March-April 2020 and September-December 2020, which coincided with the pandemic peak. Adult COVID-19 patients had to be hospitalized in the pediatric surgery service, and elective operations were postponed in our hospital during the peak of the pandemic. Despite all the necessary precautions in place, it is a fact that during the pandemic, healthcare workers were infected throughout the world due to more frequent direct contact with the sick individuals compared to other occupational groups, and some of them unfortunately lost their lives too. With an aim to minimize the risk of contamination and to protect the health of the employees in our clinic, required infection control measures and personal protection measures were taken and emergency surgical interventions continued. During the peak periods, some of the health-care professionals, including specialist physicians and nurses, were assigned to other COVID-19 inpatient wards.

The approach to emergency situations such as acute appendicitis changed globally because of the pandemic. Certain centers preferred home care and treatment with antibiotics for potentially uncomplicated acute appendicitis in COVID-19 patients.[6] Jones et al.[7] reported the treatment of a 13-year-old girl with antibiotics. Kvasnovsky et al.[8] documented 45% non-operative success in their patients. However, it has been observed that non-operative treatment caused an increase in hospital stay and also complications such as peritonitis abscess.[11] In our clinic, we surgically treated children with acute appendicitis during the pandemic period, just as in the previous period. We did not apply the non-operative treatment method to any of our patients.

Delayed diagnosis and treatment of appendicitis in children may lead to more significant morbidity than the damage caused by the current COVID-19 outbreak. To prevent complications, early diagnosis and appropriate surgical treatment are important. Appendix perforations generally occur 36–48 h after the onset of symptoms, and perforation has been reported in approximately 20% of the children.[12] During the pandemic period; due to the concerns of families about contracting a contagious disease for both themselves and their children, and warnings by health professionals and government officials that they should not leave their homes and not come to the hospital unless there is an emergency, the time to apply to the hospital has been extended. Before the pandemic, 20.3% of the patients presented to the hospital on the 1st day of their complaints, where during the pandemic, only 2% of the patients reported to the hospital on the 1st day, and 15% presented after 4 days or more. As a result, the rate of perforated appendicitis, which was formerly 10.4%, increased to 24.8% during the pandemic period.

In studies conducted, the rate of negative appendectomy may increase up to 24%.[13] In our study, the rate of negative appendectomy was found to be 5.5%, which is consistent with the literature. This rate, which was 7.3% before the pandemic, was found to be 2.3% during the pandemic period. We are of the opinion that the late admission of patients to the hospital during the pandemic and the lower incidence of abdominal pain due to other infectious causes decrease the negative appendectomy rates.

The WBC and CRP values were found to be significantly higher in the patients treated during the pandemic compared to those treated before the pandemic, suggesting that this increase was associated with prolonged hospitalization.

While USG previously supported the diagnosis of acute appendicitis in 72.1% of the patients, this rate was 66.3% during the pandemic. During the same period, the rate of CT use in diagnosis increased from 9.6% to 13.4%. The reason for more CT scans was to avoid negative appendectomies and not to bypass the diagnosis of COVID-19. About 75% of the CT examinations were performed in other hospitals and emergency services before the patient was admitted to our clinic.

During the initial period of the pandemic, it was recommended that open surgery should be preferred on the grounds that laparoscopic procedures were not safe and might increase the risk of contamination.[14,15] However, in the later period of the pandemic, evidence began to emerge that laparoscopy could be safely performed.[16,17] Sheath et al.[18] reported in their study that they performed laparoscopic appendectomy at a rate of 83% during the pandemic period and that COVID-19 was not a contraindication to laparoscopy. We preferred laparoscopic surgery for our suitable patients. The fact that patients and healthcare professionals reduce the risk of COVID-19 due to the shorter hospital stay was effective in our preference for laparoscopic appendectomy. However, the rate of laparoscopic appendectomy performed in our clinic was low compared to that in literature since most of the patients were operated during shift hours. The specialist physicians working in our clinic were also engaged in COVID-19 services, and some of them were yet to complete their laparoscopic surgery training.

In our study, we did not find a significant difference in complication rates between the groups. Complications such as wound infection, intra-abdominal abscess, and prolonged ileus were observed in 5.3% of the patients. In a series reported by Snapiri et al.[19] during the pandemic period, the complication rate was found to be 22%. We think that the rates of wound site infection and intra-abdominal abscess were low in patients with acute appendicitis owing to the widespread use of antibiotics in our study. However, we found that the number of perforated appendicitis increased significantly in Group II patients, which might lead to long-term complications. Relevant studies have suggested that late complications (ileus, intra-abdominal abscesses, and infertility) are high, especially in perforated appendicitis.[20]

In our study, it was seen that the average hospital stay of the patients was 4.59±2.70 days previously, while it increased to 5.20±3.27 days during the pandemic period. The duration of hospitalization was longer as a result of the increase in the incidence of perforated appendicitis although the hospital stay was expected to be shorter due to the higher rate of laparoscopic appendectomy during the pandemic period. This situation not only caused an increase in the cost of the patient but also the workload of the health-care department staffs during this difficult time and created a negative psychological effect on the patients and their family.

Seven COVID-19 positive patients were reported by Snapiri et al.[19] and four by Meyer et al.[21] during the pandemic period. We also operated four patients diagnosed with acute appendicitis, who were also positive for COVID-19. Fever and cough symptoms were observed in our patient, who was operated for perforated appendicitis. Antibiotic treatment of

the patient was completed in 10 days. During the surgery, the operating room and operating team were prepared in accordance with the pandemic conditions. Personal protective equipment was used. No antiviral therapy was required for the treatment of COVID-19 in any of these patients.

Conclusion

Studies on the effects of the COVID-19 pandemic on pediatric patients are ongoing. A comprehensive evaluation and physical examination are very important in early diagnosis in cases of suspected acute appendicitis. During the pandemic period, concerns of families about contracting a contagious disease for both themselves and their children has caused delayed hospitalization of children, an increase in the number of perforated appendicitis, a prolonged hospital stay, and an increase in health costs.

Considering the fact that healthcare workers are exposed to a high risk of infection during such periods, the hospitalized and operated patients and even those examined in the outpatient clinic should be considered COVID-19 positive until a contrary test result is received. The healthcare professionals should take all precautions to protect themselves and their patients.

Ethics Committee Approval: This study was approved by the Ümraniye Training and Research Hospital Clinical Research Ethics Committee (Date: 11.03.2021, Decision No: B.10.1.TKH.4.34.H.GP.0.01/61).

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ORİJİNAL ÇALIŞMA - *ÖZ*

COVID-19 salgınında çocuk apandisitlerinde ne değişti?

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AMAÇ: COVID-19 salgını sırasında akut apandisitin yönetimi ile ilgili çocuk yaş grubundaki çalışmalar olgu sunumları ve küçük hasta grupları ile sınırlıdır. Bu çalışmanın amacı, COVID-19 salgını süresince akut apandisit nedeniyle tedavi ettiğimiz olguları salgın öncesi dönemdeki olgularla karşılaştırarak salgın döneminde akut apandisitin seyrinde ne gibi değişiklikler olduğunu araştırmaktır.

GEREÇ VE YÖNTEM: 1 Mayıs 2019–29 Şubat 2020 (Grup I) ve 1 Mart–31 Aralık 2020 (Grup II) tarihleri arasında akut apandisit nedeniyle ameliyat edilen 1–18 yaş arasında toplam 601 çocuk üzerinde gerçekleştirildi. Grup I ve Grup II'de yer alan hastaların demografik ve hastalık özellikleri ile tedavi sürecine ilişkin özellikleri karşılaştırıldı.

BULGULAR: Çalışmaya alınan olguların %59.1'i (n=355) Grup I, %40.9'u (n=246) Grup II'de yer almaktadır. Salgın döneminde; ailelerin hem kendileri hem de çocukları için taşıdığı bulaşıcı hastalığa yakalanma endişesi, sağlık profesyonelleri ve hükümet yetkilileri tarafından yapılan acil bir durum olmadığı sürece evlerinden çıkmamaları ve hastaneye gelmemeleri yönündeki uyarılar nedeniyle hastaneye başvuru süreleri uzamıştır. Salgın öncesi hastaların %20.3'ü şikayetlerinin başladığı ilk gün hastaneye başvururken salgın sürecinde hastaların sadece %2'si ilk gün, %15'i ise dört gün ve daha uzun süre sonra hastaneye başvurmuştur. Bu durumun sonucu olarak salgın öncesi %10.4 olan perfore apandisit oranı salgın döneminde %24.8'e yükselmiştir ($p<0.01$). Salgın döneminde COVID-19 test sonucu pozitif olan dört hastamızı ameliyat ettik. Hastalarımızda COVID-19 ve ameliyata bağlı komplikasyon gelişmedi.

TARTIŞMA: Mevcut küresel salgından duyulan korku çocukların hastaneye başvurma süresinin uzamasına, perfore apandisit sayısının artışına ve hastanede kalış süresinin uzamasına neden olmuştur.

Anahtar sözcükler: Akut apandisit; cerrahi; COVID-19; perfore apandisit; salgın.

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