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Determination of descriptive characteristics of children with apendectomy surgery and related factors

Birsen Bilgen Sivri*, Health Services High School, Mevlana University, Konya, Turkey.
Serap Balcı, Florence Nightingale Nursing Faculty, Istanbul University, Istanbul, Turkey.
Zeynep Erkut, Florence Nightingale Nursing Faculty, Istanbul University, Istanbul, Turkey.
Ozlem Metreş, Okmeydanı Education and Training Hospital, Neonatal İntensive Care Unit, Istanbul, Turkey.
Burcu Aykanat Girgin, Health High School, Çankırı Karatekin University, Çankırı, Turkey.

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Abstract

With morbidity and various symptoms; appendicitis is the most frequently seen health problem among the children and requires an emergent surgical intervention. Although it is estimated that appendicitis develops among 1% of the population under 15 years; it is stated that the most important factor that causes appendicitis is obstruction of lumen. The current study was cross-sectionally and descriptively undertaken in order to identify the descriptive characteristics of the children who had appendectomy surgery and the related factors.The population of the study was composed of the children aged 4-18 years who were hospitalized due to appendicitis at Bağcılar Training and Research Hospital Pediatric Surgery Service between 2012 and 2014. The sample of the population was consisted of a total of 64 children who accepted to participate in the study and stayed at the hospital during research period. The data were gathered using a questionnaire form designed by the researchers.37.5% of the participant children were girls and 62.5% of the participant children were boys; mean age was 11.48±3.48 years. Most of the mothers (60.9%) and fathers (60.9%) had primary school degree. 43.8% of the families had appendectomy previously, 95.3% did not have any chronic diseases. 25% of the children had a perforated appendix and most of them presented such symptoms as pain (70.3%), nausea

* ADDRESS FOR CORRESPONDENCE: **Birsen Bilgen Sivri,** Mevlana University Health Services High School, Konya 42003, Turkey. *E-mail address*: bbsivri@mevlana.edu.tr , oneyou2009@gmail.com / Tel.: +90-444-42 43-1397

(70.3%), lack of appetite (78.1%), vomiting(67.2%), fever (39.1%). 38% of the mothers performed a practice (hot-compress, cold-compress, giving massages to abdomen, giving pain killers, hot teas of mint leaves and lemon, wrapping the abdomen, etc.) before the children were taken to hospitals. Additionally; it was found out that the children swallowed seeds of the fruits (29.3%), did not peel the fruits (61.5%), swallowed chewing gums (35.4%) and ate legumes and ate bones without chewing (16.9%).

Keywords: Appendicitis, appendectomy, child

1. Introduction

Acute appendicitis is a condition that is most commonly seen in pediatric age group and requires an emergent intervention. Appendectomy is the most commonly performed abdomen operation among this age group [7]. It is estimated that appendicitis develops in 1% of the population aged below 15 years [6, 10].

The most important factor in the etiology of appendicitis is the obstruction of appendix lumen. When the reasons of this obstruction is examined; fecalith, lymphoid tissue hyperplasia, tumors, foreign bodies (particularly fruit seeds), parasites -mainly ascaris- play important roles in the obstruction of appendix although its incidence varies according to the age groups. Lymphoid tissue hyperplasia is the most common cause of obstruction of appendix lumen among the children; fecalith among the adult population and tumors among the elderly population [10, 13]. According to incidence rate; some of the foreign bodies that cause appendicitis are metal needles, buckshots swallowed with hunted animals, bones, seeds, stones, shells of the dried fruits, coins, nails, teeth, keys, egg shell, toothpicks, chewing gums, hair, thermometer pieces, dental fillings, bristles of tooth brushes, plastic items and seeds of watermelon [6, 9, 10, 13]. Acute appendicitis in children is characterized with abdomen pain, nausea and vomiting, sensitivity in lower right hand side of the abdomen after physical examination and leukocytosis findings in rebound, defense and complete blood count [8]. In order to diagnose appendicitis; it is important to get anamnesis, physical examination, laboratory and radiological analyses as well as observation of the patient [5]. A late diagnosis may lead to such complications as perforation, abscess formation, sepsis and bowel obstruction [12].

The number of the studies on descriptive characteristics of the children who have had appendectomy due to appendicitis diagnosis and the factors that caused appendicitis is limited [5, 12, 14]. The current study aimed at identifying the descriptive characteristics of the children who had surgical operation due to appendicitis diagnosis and the related factors that caused appendicitis.

2. Materials and Methods

The current study was descriptively planned to explore the descriptive characteristics of the children who had appendectomy and the related factors that caused appendicitis. The population of the study was composed of the children aged 4-18 years who were hospitalized due to appendicitis at Bağcılar Training and Research Hospital Pediatric Surgery Service between 2012 and 2014. The sample of the population was consisted of a total of 64 children who accepted to participate in the study and stayed at the hospital during research period. Before data collection phase initiated; necessary official permissions, ethical committee permissions and written informed consents from the parents were obtained. The data were gathered using a questionnaire form designed by the researchers in line with the relevant literature and face-to-face interviews. The questionnaire form included 30 questions addressing socio-demographic characteristics, disease history and the appendicitis causing factors.

3. Results

37.5% of the participant children were girls and 62.5% of the participant children were boys; mean age was 11.48±3.48 years. The age of the most children (46.9%) in the families was between 3 and 4 years. Most of the mothers (60.9%) and fathers (60.9%) had primary school degree and 82.8% of the mothers were not employed. According to the statements of the parents; 73.4% of them had moderate income. 43.8% of the families had appendectomy previously while 56.3% did not have any family members who had appendectomy.

Table 1. Demographic characteristics about the children and the parents (N=64)

Characteristics	n	%
Gender		
Girls	24	37.5
Boys	40	62.5
Number of the children in the family		
1-2	26	40.6
3-4	30	46.9
5 and above	8	12.5
Educational status of the mothers		
Literate	15	23.5
Primary school	39	60.9
High school	6	9.4
University	4	6.3
Educational status of the fathers		
Literate	5	7.8
Primary school	40	62.5
High school	14	21.9
University	5	7.8
Employment status of mothers		
Employed	11	17.2
Unemployed	53	82.8
Income Status *(According to the statement of the families)*		
Unsatisfactory	7	10.9
Moderate	47	73.4
Satisfactory	10	15.6
The family members with appendicitis operation		
Yes		
No	28	43.8
	36	56.3
Mean age of the children (years)	mean ± SD	
	11.48 ± 3.48	

Tables 2. Distribution of the risk factors that might cause appendicitis development (N=64)

Characteristics	n	%
Presence of an infection within the last one week		
Yes	13	20.3
No	51	79.7
Swallowing foreign body before signs initiated		
Yes	1	1.6
No	63	98.4
Swallowing the seeds of the fruits		
Yes	19	29.7
No	45	70.3
Swallowing the foods without chewing		
Yes	11	17.2
No	53	82.8
Eating shells of the dried fruits		
Yes	8	12.5
No	56	87.5
Peeling the fruits		
Yes	40	62.5
No	24	37.5
Swallowing chewing gums		
Yes	23	36.0
No	41	64.0

When the distribution of the risk factors that might cause appendicitis development was examined; 20.3% of the children had infection in the last one week and 1.6% of the children swallowed a foreign body before the signs initiated. It was found out that 29.7% of the children swallowed seeds of the fruits, 17.2% of them swallowed the foods without chewing, 12.5% of them ate shells of the dried fruits, 37.5% of them did not peel the fruits and 36% of them swallowed chewing gums. It was detected that 17.2% of the children had parasites in bowels previously whereas 82.8% of them did not.

Table 3. Complaints of the children before hospitalization (N=64)

Complaints	n	%
Fever	25	39.0
Nausea	45	70.3
Vomiting	43	67.2
Lack of appetite	50	78.1
Constipation	20	31.2
Diarrhea	23	35.9
Pain (mainly in lower right hand side of the abdomen and entire abdomen)	45	70.3
Perforation	16	25.0

When the complaints of the participant children before they were hospitalized were investigated, it was seen that fever was 39%, nausea was 70.3%, vomiting was 67.2%, lack of appetite was 78.1%, constipation was 31.2%, diarrhea was 35.9% and pain was 70.3%. The identified pain was mostly in lower right hand side of the abdomen and the appendix of the 25% of the children was perforated.

Table 4. Practices of the parents before they went to the hospital (N=64)

Practices Done At Home	n	%
Did you perform any practices before going to hospital		
Yes	24	37.5
No	40	62.5
Practices performed (n=24)		
Hot compress (on abdomen or feet))	9	37.5
Giving analgesics	9	37.5
Giving antibiotics	1	4.2
Other (massage. hot teas of mint leaves and lemon, antiflatulent drugs, cold-compress)	5	20.8

The parents performed some practices to 37.5% of the children while they did not perform any practices to 62.5% of the children. The practices mostly performed were hot-compress (37.5%), giving analgesics (37.5%), giving antibiotics (4.2%) and other practices (massaging, hot teas of mint leaves and lemon, antiflatulent drugs, cold-compress) (20.8%).

Table 5. Comparison of time spent before going to hospital, practices of the parents before hospitalization and perforation development (N=64)

Characteristics		Perforation Development				X^2 p
		Yes		No		
		Number	Percentage	Number	Percentage	
Time spent before going to hospital	The same day (0-24 hours)	7	43.8	26	54.2	1.59 0.45
	The following day (25-48) hours	7	43.8	13	27.1	
	3 days and later	2	12.5	9	18.8	
Any practice performed by the parents before going to hospital	Yes	8	50.0	8	50.0	2.85 0.09
	No	13	27.1	35	72.9	

When time spent before going to hospital and perforation development were compared; it was seen that there was not a statistically significant difference between ($p>0.05$). When the practices of the parents before hospitalization and perforation development were compared; it was noted that there was not a statistically significant difference between ($p>0.05$) (Table 5).

4. Discussion

Although appendicitis is the most commonly seen problem after inguinal region diseases in pediatric surgery [11] and general surgery clinics; it ranks first among the causes of surgery among the children who go to hospital with acute abdominal pain [3, 4].

The most important risk factor of acute appendicitis is lumen obstruction. One of the most commonly seen reasons of obstruction is fecalith. Other less frequently encountered risk factors are

lymphoid tissue hyperplasia, obstruction of appendix lumen with barium after barium examinations, fruit and vegetable seeds and bowel worms -mainly ascaris-[15]. Although appendicitis cases caused by foreign body are rarely seen; most of the foreign bodies taken orally pass through digestion system without any problem. Likewise; it was reported in %0.005 of the appendectomy samples that there was appendicular foreign bodies [9]. It was identified that more than 60% of the answers given by the participant children was no when the children were asked whether or not they demonstrated such behaviors as swallowing seeds of the fruits, swallowing foods without chewing, eating shells of the dried fruits and swallowing chewing gums. This result was similar to the one reported in literature that seeds of fruits and vegetables were the less frequently encountered causes of obstruction.

Clinical signs and symptoms of acute appendicitis are generally periumbilical pain (visceral, unlocalized), lack of appetite, nausea and/or vomiting, sensitivity and pain in lower right hand side of the abdomen, fever and leukocytosis [2, 4]. When the complaints of the children before they were hospitalized were examined; they had lack of appetite (78.1%), pain in lower right hand side of the abdomen (70.3%), nausea (70.3%), vomiting (67.2%) and fever (39%). Although the most frequently reported sign and symptom in literature was abdomen pain; symptoms accompanying abdomen pain are often manifest among the children. The study of Bicer indicated that vomiting ranked first among the accompanying symptoms but in the current study it was noted that lack of appetite was more manifest than pain [5].

It is very crucial for the patients with appendicitis to go to hospital within 24 hours. Complications occur and the diagnosis gets difficult because patients go to hospital late, use home-remedies and analgesics and perform other practices at home themselves [15]. In the study; it was seen that the parents performed some practices to 37.5% of the children before they went to hospital and most of these practices were hot-compress (37.5%) and giving analgesics (37.5%) (Table4). It was detected that 43.8% of the parents went to the hospital within 24 hours when the first signs and symptoms initiated and no statistically significant difference existed between the time spent before going to hospital and perforation development ($p>0.05$) (Table 5). In the study done Akova et al., too, it was identified that most of the families (55%) went to the hospital within 24 hours when the first signs and symptoms initiated. It is a positive act that families go to hospital within 24 hours [1]. However; applying hot-compress and giving analgesics are risky behaviors. Because different methods like these repress abdominal pain; they may cause time-loss and thus perforation. Therefore; families should be informed about these issues.

5. Conclusion and Recommendation

It was seen that the children with appendectomy were mainly boys, the mean age of the subjects was 11.48±3.48 years, 25% of them developed perforation, mothers performed some practices to the 37.5% of the children at home before they were hospitalized (*hot compress, cold compress, massage, giving pain killers, mint-lemon tea, wrapping the abdomen*). In addition; it was found out that children swallowed seeds of the fruits (29.3%), did not peel the fruits (61.5%), swallowed chewing gums (354%) and swallowed legumes and ate bones without chewing (16.9%). It is recommended that families be informed of the signs and correct interventions about appendicitis and studies with larger samples and control groups be undertaken in order to determine the related risk factors of appendicitis.

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