ORIGINAL ARTICLE

Prevalence and outcome of appendicitis among patients attending King Abdullah Hospital in Bisha province, Saudi Arabia 2019

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Abstract:

Introduction: The commonest acute abdominal surgery is acute appendicitis. Appendicitis is an inflammation of the appendix. Most of the patients feeling of pain, nausea, vomiting, and loss of appetite. The presentation getting worse with develop complications. Ruptured appendix and peritonitis are a common complications.

Material and Methods: This study was a cross-sectional hospital-based in the surgery department King Abdullah Hospital for all patients that underwent appendicectomy for six months. A well-structured questioner divided into three-part develop to gathering information from the patient file. The date will be collected from the well-training person. The date will be analyzed using SPSS version 20 for descriptive statistics results will be presented as means, percentage, and frequency.

Objective: The aim of this study is determine the prevalence and outcome of appendicitis among patients attending King Abdulla Hospital (KAH) and the social-demographic characteristics of patients with acute appendicitis and to identify complication among patients and related factor effecting.

Results: The total patient's number is 84. A different age from 6 years to 54 and different education level that effect of prevalence of complications presentation. Male is more common to have a complication.

Conclusion: Most of the patients are young and no difference between the sex of prevalence them. The most common presenting symptom was a pain and complications are associated with male gender and adult age.

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Introduction:

The most common cause of an acute surgical abdomen is Appendicitis, with prevalence an estimated lifetime of 7–8%, it is still associated with significant morbidity (10%) and mortality (1–5%). Despite the development of diagnosis and treatment, the clinical history and physical examination represent the most important tools for early diagnosis of the disease.[1,3,4]

The overall accuracy for diagnosing acute appendicitis is approximately 90%, with a false-negative appendectomy rate of 10%, this is more frequent in atypical cases, especially in women of child bearing age.[1,3,4]

Appendicitis is inflammation of the appendix. Symptoms generally include right lower abdominal pain, nausea, vomiting, and loss of appetite. Severe complications of a ruptured appendix include prevalent, painful inflammation of the inner lining of the abdominal wall and sepsis. It is considered a medical emergency that usually requires urgent surgery to remove the appendix.[1,2,4]

The mortality rate due to complications of acute appendicitis will be addressed here. Age and gender involvement patterns will also be tackled to elucidate their role in the problem.

Table 1:

	N	Minimum	Maximum	Mean	Std. Deviation
Age of resp	84	6.00	54.00	19.5476	9.05326
Valid N (listwise)	84				

Table 2:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	84	100.0	100.0	100.0

Table 3:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-24 hrs	21	25.0	25.0	25.0
	24-72 hrs	63	75.0	75.0	100.0
	Total	84	100.0	100.0	

Table 4:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Two symptoms	16	19.0	19.0	19.0
	Three symptoms	35	41.7	41.7	60.7
	Four symptoms	18	21.4	21.4	82.1
	Five symptoms	7	8.3	8.3	90.5
	Six symptoms	6	7.1	7.1	97.6
	7.00	2	2.4	2.4	100.0
	Total	84	100.0	100.0	

Table 5:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	CT scan	1	1.2	1.2	1.2
	Ultrasound	22	26.2	26.2	27.4
	x-ray	2	2.4	2.4	29.8
	x-ray and CT	1	1.2	1.2	31.0
	x-ray and us	54	64.3	64.3	95.2
	x-ray CT and us	3	3.6	3.6	98.8
	Us CT	1	1.2	1.2	100.0
	Total	84	100.0	100.0	

Material and Methods:

This study is a cross-sectional hospital-based study. The study area is the department of surgery at King Abdullah Hospital. The King Abdullah Hospital in Bisha city of Asseer region province of Saudia Arabia. All patients that underwent for appendicectomy in surgical department King Abdullah Hospital are included in the study last six months of 2019. A well-structured questioner divided into three-part first is the Bio-data. This bio-data tool has been developed to capture these information. The second part is presenting complaints and past medical and surgical history we tried to get as much as information from the record as well as also got information regarding clinical state and finally the management and complication of acute appendicitis. The management of cases and complications observed or documented. The data form was specially developed to capture information that has been addressed the specific objectives of this study.

Data were collected and analyzed using SPSS version 20. For descriptive statistics, results will be presented as means, percentage, and frequency. Statistical test found helpful regarding various variables. P-value is considered statistically significant where the level of this P. value is <0.05.

The ethical approval for this study was sought from the University of Bisha college of medicine research committees.

The total patient's number are 84. The patient's age starts from 6 and the maximum age is 54 and the mean ages are 19 (table 1). From 84 patients 51.2% (43 patients) were male and 48.8% (41 patients) were female (figure1).

69% (58 patients) they were student, 16.7% (14 patients) were Employed and 14.3% (12 patients) were housewife as shown in figure2. 35.7% (30 patients) had their education uptill secondary level, 22% (19 patient) had their education uptill tertiary level (figure 3). We also noted that 89.3%(75) were not smoking (figure 4).

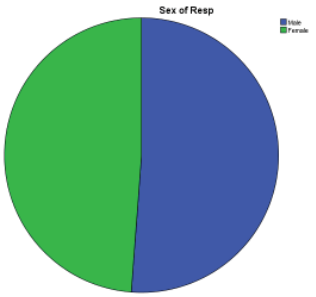
The majority of the patient did not have a risk factor 48.8% (41 patients), 32.1% (27 patients) have one risk factor and 1.2% (1 patient) had three risk factors (figure 5).

The common presentation between patients was pain 100% (84 patients)(table 2). Nausea

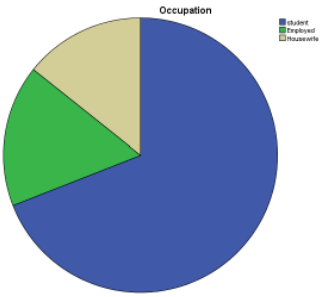
Table 6: Treatment seen

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Laparoscopic Appendectomy	59	70.2	70.2	70.2
	Operative Appendectomy	25	29.8	29.8	100.0
	Total	84	100.0	100.0	

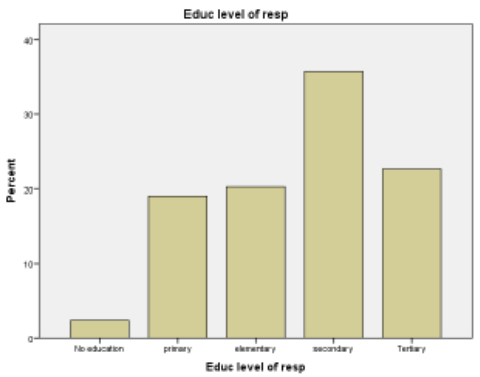
		Complications were seen				Total
		.00	Peritonitis	Ruptured appendix	Appendix abscess	
Educ level of resp	No education	1	0	1	0	2
	Primary	12	2	1	1	16
	Elementary	14	0	3	0	17
	Secondary	26	2	2	0	30
	Tertiary	13	2	3	1	19
Total		66	6	10	2	84



Graph 1: Sex distribution



Graph 2: Patient occupation situation



Graph 3: The patient education level

presenting of around half patient 52.4% (44 patients) and vomiting was 50% (42 patients). The majority of patients had three symptoms 41.7% (35 patients), 21.4%(18patients) were have four symptoms.

75% (63 patients) have come to the hospital after 24-74 hours and 25% (21 patients) in the first 24 hours (table 3).

Most of the patients had their abdominal x-rays and ultrasound 64.3% (54 patients), and 26.2% (22 patients) had ultrasound only as pre-operative investigation.(table 4) Blood group O is common in this study 67.% (56 patients).

A ruptured appendix is a common complication up to 11.9%(10 patients), then peritonitis 7.1%(6 patients), and most of the patients who were submitted for surgery did not have any complications 78.6%(66 patients)(table 5).

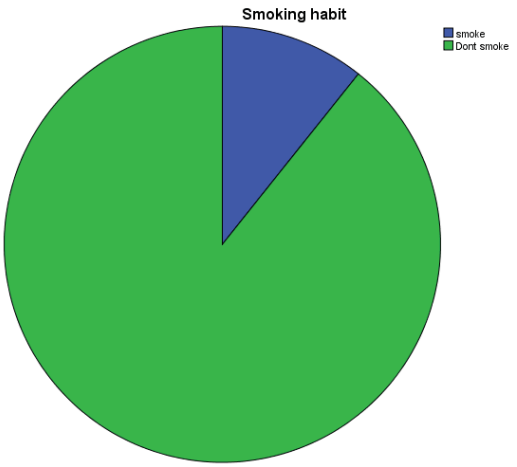
More than two-thirds of acute appendicitis cases the appendicectomy were done via Laparoscopic route 70.2% (59 patients), and the rest of the other patient had open appendectomy 29.8% (25 patients)(table 6).

We found that complication rate was high among male patients. 27.9%(12 male patients) showed complication related to appencidectomy. 14.6%(6 patients) of females showed complicatin related to surgical procedure.

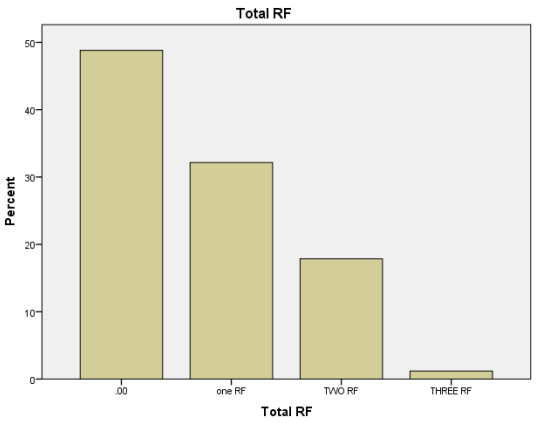
Discussion:

In this study we got much information after the patients admission to the hospital. No difference found between the sex of patient prevalence we noted mean age of the patient who underwent appendiscetomy was 19(figure 1). Most of them are students. 100% of these cases presneted with abdominal pain as shown in our study. We found 84% of patients belonging to this study were of age 60 and above.[12] Nausea and vomiting was also an important symptom.

In our study 70% of patients underwent laparoscopy appendectomy and another similar study 50.2% of patients population underwent laparoscopic appendectomy and 49.8% underwent open appendectomy. Cipe, G., et al, Omari, Abdelkarim H., et al , and Marzouk, M., et al in their study showed laparoscopy appendectomy



Graph 4: smoking habit among patient



Graph 5: Risk factors with patient

in 47.5% of cases.[11,17] (table 5).

The diagnosis of acute appendicitis is based on our clinically evaluation, to rule out other causes of right lower qudarant pain we use abdominal ultrasound and abdominal x-ray as shown in table 4. We noted complication are more common in male and adult population the reason may be the ability to those patient to tolerate this abdominal pain.

There is a huge difference among the various variable in our study as compared to other studies in Saudia Arabia. In comparson to our study severeal other studies showed a mean age of 25 and 28 years.[5,9,10,15] As far as sex is concerned there is predominent of male population over female population as shown in the studies Nassir, Asmaa Yaseen, et al and Alshahrani, Saeed Abdullah, et al and several other colleagues in their studies.[5,6,8,10,14]

Diagnostic tool are similar in all studies, the imaging plays a little role in the diagnosis of acute appendicitis, we found imaging more helpful to role out other diseases. Alshahrani, Saeed Abdullah, et al and various other colleagues recommended CT scan abdomen and ultrasound abdomen as an important tool to diagnose acute appendicitis.[6,7,13,16]

The limitation of this study was that we could not compare most of our results with other studies in Saudi Arabia as far as various variables of this study is concern.

Conclusion:
Most of patients are young and no difference of prevalence was found between sex. The most common presenting symptoms were pain and complication were found more common in male gender and adult age. The strength of our study that this is the first study carried out for the populatoin of Bisha region which is highlighten the various variable of the patients of acute appenciditis.

The limitation of the study is a hospital-based study and this research cannot provide real prevalence in Bisha city. Another limitation were we could not compare most of our results with other studies on similar topic carried out in Saudi Arabia since we could not found any similar study. Other limitation could be our sample size was not that large enough.

Conflict of interest: None

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Role and contribution of authors:
Dr. Hamed Alshahrani, collected the data, references and did the initial writeup of this article.

Dr. Tariq Aljak, collected the data and helped din introduciton writing

Dr. Jibo Abubaker, collected the data and helped in discussion writing

Dr. Saleem Abdul Sattar Khan, critically review the article and made final changes.

Dr. Qassim Al-Hajj, critically went through the article and made useful changes

Dr. Emadeldien Abdelgader, went through the article in detail and advise several useful changes.

Dr. Saud Alshahrani, collected the references and helped in discussion writing.

Dr. Yazeed Alshahrani, collected the data, references and also helped in interpretation of data and compiling of the result

Dr Ibrahim Fawzy, collected the data, referenes and helped in introduction and discussion writing.

Reference:

1. Williams NS, Bulstrode CJ, O'Connell PR. Bailey & Love's short practice of surgery. CRC Press; 2008.
2. Billiar T, Andersen D, Hunter J, Brunicardi F, Dunn D, Pollock RE, Matthews J. Schwartz's principles of surgery. McGraw-Hill Professional; 2009.
3. Quick CR, Reed JB, Burkitt HG, Deakin PJ. Essential Surgery: Problems, Diagnosis, and Management: With STUDENT CONSULT Online Access. Elsevier Health Sciences; 2007 Sep 20.
4. Townsend CM, Beauchamp RD, Evers BM, Mattox KL. Sabiston Textbook of Surgery E-Book: The Biological Basis of Modern Surgical Practice. Elsevier Health Sciences; 2016 Apr 22.
5. Nassir, Asmaa Yaseen, et al. "Laparoscopic Appendectomy between the Advantages and Complications: A Cross Section Study–Jeddah–Saudi Arabia–2016." The Egyptian Journal of Hospital Medicine 67.2 (2017): 660-665.
6. Alshahrani, Saeed Abdullah, Mohammed S. Alqahtani, and Muhannad A. Asiri. "Acute Appendicitis among Saudi and Non-Saudi Patients: A Cross-Sectional Based Study."
7. Khairy, Gamal. "Acute appendicitis: is removal of a normal appendix still existing and can we reduce its rate?." Saudi journal of gastroenterology: official journal of the Saudi Gastroenterology Association 15.3 (2009): 167.
8. Althoubaity, Fatma K. "Suspected acute appendicitis in female patients." Saudi Med J 27.11 (2006): 1667-1673.
9. Oguntola, A. S., M. L. Adeoti, and T. A. Oyemolade. "Appendicitis: Trends in incidence, age, sex, and seasonal variations in South-Western Nigeria." Annals of African medicine9.4 (2010).
10. Amer, Shames EAA, Mohamed IM Ibrahim, and Abdulaziz S. Abdulaziz. "Outcome of laparoscopic appendicectomy in Sudanese patients: multi-center experience from 2008 to 2011." Sudan Medical Journal 11.2253 (2013): 1-16.
11. Cipe, G., et al. "Laparoscopic versus open appendectomy: where are we now." Chirurgia (Bucur) 109.4 (2014): 518-522.
12. Omari, Abdelkarim H., et al. "Acute appendicitis in the elderly: risk factors for perforation." World Journal of Emergency Surgery9.1 (2014): 1-6.
13. Curtin, K. R., et al. "CT diagnosis of acute appendicitis: imaging findings." AJR. American journal of roentgenology 164.4 (1995): 905-909.
14. Al-Omran, Mohammed, Muhammad M. Mamdani, and Robin McLeod. "Epidemiologic features of acute appendicitis in Ontario, Canada." Canadian journal of surgery 46.4 (2003): 263.
15. Hale, Douglas A., et al. "Appendectomy: a contemporary appraisal." Annals of surgery 225.3 (1997): 252.
16. Al Qahtani, Hamad Hadi, and Abdulmajeed Abdulhameed Muhammad. "Alvarado score as an admission criterion for suspected appendicitis in adults. " Saudi Journal of Gastroenterology 10.2 (2004): 86.
17. Marzouk, M., et al. "Laparoscopic versus open appendectomy." Surgical Endoscopy And Other Interventional Techniques 17.5 (2003): 721-724.