Prevalence of Non-Traumatic Surgical Emergencies at Al-Kindy Teaching Hospital, Baghdad 2019

Sinan Essam Abdulrazzak Alnuaimi

Higher diploma of family medicine

MoH, public health directorate

Abstract

Background: Acute abdominal conditions are common non-traumatic surgical presentations in emergency department, it includes spectrum of medical and surgical conditions ranging from mild to life-threatening conditions that develops during hours which require hospital admission, investigations and treatment.

Objective: To study types of non-traumatic surgical emergencies visiting Emergency Department at Al-Kindy Teaching Hospital.

Patients and Methods: A hospital-based records study was conducted at Al-Kindy Teaching Hospital on files of one hundred forty patients underwent emergency surgery because of non-traumatic acute emergency during the period extended from 1st January – 31st December 2019. A check list included sociodemographic information of patients (age & gender), presenting symptoms & signs, comorbidities, provisional diagnosis, investigations done in emergency department, final diagnosis and final destination was adopted.

Results: This study enrolled 76(54.3%) males & 64(45.7%) females, with mean age (28.8 ± 12.9) years. Acute appendicitis was the most common diagnosis (78.6%), followed by acute cholecystitis (7.9%), perianal abscess (6.4%), gluteal abscess (5.7%), complicated inguinal hernia (0.7%) & fecal impaction (0.7%).

Conclusion: Non-traumatic abdominal surgical emergencies were common cause for general surgical admissions. Most of the patients were young males. Acute appendicitis was the most common diagnosis. The provisional diagnosis was the same of that of final diagnosis.

Key words: Non-traumatic, Surgical emergencies, Baghdad

Introduction:

Acute abdominal pain is a non-specific symptom of many diseases includes spectrum of medical and surgical conditions ranging from mild to life-threatening conditions that develops during hours. It remains one of the most common issues that patients complain in the Emergency Department (ED). It can be one of the symptoms associated with transient disorders or an abdominal disease that may require immediate surgical intervention. (1)

The elderly patients (aged 65 years and older) represent a significant and challenging diagnostic problem due to atypical presentation of their symptoms, the presence of coexisting diseases, the atypical physical examination findings, laboratory results, and the higher morbidities they have.(1) Non-traumatic acute surgical emergencies (NTASE) are a common cause for emergency surgical admissions, the pattern & the incidence of NTASE may change over time in the same country as a result of locations of towns, various socioeconomic status, dietary, cultural, and environmental differences. (2)

Non-specific abdominal pain (NSAP) remains the most common sign among emergency surgical admissions in the United Kingdom (UK), and acute appendicitis has replaced intestinal obstruction as the leading cause of NTASE in Nigeria (1). Imaging investigations play an important role for helping management of acute abdomen. (2)

Perianal abscesses are one of the most common general surgical emergencies & their management procedures performed by the surgical trainees. Patient's medical history such as diabetes and crohn's disease are important risk factors for the development of anorectal complications. (3, 4) Complicated inguinal hernias are one of the most common complaints in ED, the history and physical examination are usually sufficient to make the diagnosis; there are many different types of complicated hernias, 75% of all hernias occurring in the inguinal region. (5)

Complicated gallstones, is also one of the most common gastrointestinal diseases. The incidence of gallbladder diseases increases with age, persons who are obese, women, persons with diabetes mellitus, and patients on hormone therapy or taking oral contraceptives. Ultrasonography is the best initial imaging study for most patients with acute calculus cholecystitis. Laboratory studies have been

recommended which include a complete blood count, measurement of liver function tests, GUE, GSE. [6]

The objective of this study is to identify the prevalence and to determine the spectrum of diseases causing non-traumatic acute surgical emergencies at Al-Kindy Teaching Hospital, Baghdad.

Patients and methods:

This hospital-based record study was carried out at the emergency surgical department, at Al-Kindy Teaching Hospital, Baghdad, from 1st January – 31st December 2019. The study sample enrolled 140 patients with NTASE who presented to emergency surgical department, also patients who discharged themselves on their responsibilities without medical advice (inclusion criteria). Patients with non-traumatic non-surgical emergencies (medical emergencies), traumatic surgical emergencies, or gynecological conditions, were excluded. Incomplete records were also excluded.

A checklist that included socio-demographic information of the patients (age, gender, presenting symptoms and signs, comorbidities, predisposing factors, provisional diagnosis, investigations done in ED, final diagnosis and final destination).The following investigations were checked(whether done or note) in the files of patients in ED. Complete blood count(CBC) was done for 139patients (99.3%), general urine examination(GUE) was done for 136patients (97.1%), renal function test(RFT) was done for 79patients(56.4%), liver function test(LFT) was done for 9patients (6.4%), electrocardiograph(ECG) was done for 18patients (12.9%), chest x-ray(CXR) was done for 13patients (9.3%), abdominal x-ray was done for 58patients (41.4%), random blood sugar(RBS) was done for 63patients (45%) & abdominal U/S was done for 28patients (20%). Surgical operation was done for 110(78.6%) of patients, while 28(20%) of patients self-discharged on their responsibilities and 2(1.4%) of patients were send for further opinion. Statistical analysis was done by presenting by frequency tables & figures. The data were collected by review of patients' records using structured preform that was designed for this study.

Ethical considerations:

The research proposal was approved by Research & Ethical Committee in Al-Kindy College of Medicine; the agreement of the hospital manager was also gained before starting of data collection.

Results:

This study enrolled 140 patients, 76(54.3%) were males, 64(45.7%) were females, the mean age of patients was (28.8 $\pm$ 12.9) years as shown in table 1.

Table 1: Distribution of patients according to age and gender

Gender	n (%)	Range age		Mean age$\pm$ SD	
Male	76(54.3%)	10	62	29.02	12,4
Female	64(45.7%)	13	70	28.4	13.7
Total	140(100%)	10	70	28.8	12.9

Table (2) shows that 103(73.6%) of studied patients suffered from Rt. Lower abdominal pain, 23(16.4%) of studied patients suffered from fever Upper abdominal pain was found among 18(12.9%) of patients, perianal pain 8(5.7%) of patients, 8(5.7%) patients suffered from gluteal swelling & perianal swelling was found among 7(5%) of patients.

Table (3) shows types of investigations that were done for patients in ER (CBC, GUE, RFT, LFT, ECG, CXR, Abdominal .XR, RBS, Abdominal U/S).

Table 2: Distribution of patients according to their presentation

Variables	n	%
Right lower abdominal pain	103	73.6
Fever	23	16.4
Upper abdominal pain	18	12.9
Perianal pain	8	5.7
Gluteal swelling	8	5.7
Perianal swelling	7	5

Table 3: Distribution of patients according to type of investigation

Variables	n	%
Complete blood count	139	99.3
General urine exam	136	97.1
Renal function test	79	56.4
Random blood sugar	63	45
Abdominal x-ray	58	41.4
Abdominal ultrasound	28	20
ECG	18	12.9
Chest x-ray	13	9.3
Liver function test	9	6.4

Table (4) shows that provisional diagnosis for 110(78.6%) of patients were acute appendicitis, 11(7.9%) 0f patients were acute cholecystitis, 9(6.4%) of patients were perianal abscesses, 8(5.7%) of patients were gluteal abscesses, 1(0.7%) 0f patients was complicated inguinal hernia and 1(0.7%) of patients was fecal impaction respectively. The provisional diagnosis was the same of that of final diagnosis.

Table 4: Distribution of patients according to provisional and final diagnosis

Condition	Provisional diagnosis		Final diagnosis	
	n	%	n	%
Acute appendicitis	110	78.6%	110	78.6%
Acute cholecystitis	11	7.9%	11	7.9%
Perianal abscess	9	6.4%	9	6.4%
Gluteal abscess	8	5.7%	8	5.7%
Complicated inguinal hernia	1	0.7%	1	0.7%
Fecal impaction	1	0.7%	1	0.7%
Total	140	100%	140	100%

Table (5) shows the final destination of studied patients, whereas surgical operation was done for 110(78.6%) of patients, while 28(20%) of patients leave the hospital on their responsibilities and 2(1.4%) of patients were send for further opinion.

Table 5: Distribution of presentation according to final destination

Destination	n	%
Admission (surgical word)	110	78.6%
Leave on their responsibility (self-discharged)	28	20.0%
Consultation (surgical)	2	1.4%
Total	140	100%

Table (6) shows the studied patients with comorbidities, 1(0.7%) of patients suffered from Ischemic heart disease, 3(2.1%) of patients suffered from Diabetes mellitus and 2(1.4%) of patients suffered from Hypertension.

Table 6: Distribution of patients according to comorbidities

Comorbidities	**n**	**%**
Diabetes mellitus	3	2.1%
Hypertension	2	1.4%
Ischemic heart diseases	1	0.7%

Discussion:

Acute abdominal conditions are the most common presentations in ED, acute non-traumatic surgical emergencies & non-specific acute abdominal pain are challenging to junior house officers & senior house officers because their causes are wide, ranging from self-limiting conditions to life-threatening diseases. There is no specific study about NTASE in our country.

Over the past few years, the numbers of emergency admissions to the emergency surgical department have increased may be due to inconvenient dietary habits, sedentary lifestyle, increase incidence of comorbidities, inappropriate health care consultations, incorrect using of medications, increase incidence of malignancies & environmental circumstances. [1, 2] The pattern & the incidence of NTASE may change over time in the same country, e.g. acute appendicitis has replaced intestinal obstruction as the leading cause of non-traumatic acute abdomen (NTAA) in Nigeria. [1]

In this study acute appendicitis was the first common cause of NTASE and the second reason of NTASE was acute cholecystitis compared to other similar results in Nigeria where acute appendicitis has replaced intestinal obstruction as the leading cause of non-traumatic acute abdomen (NTAA) [1], it may be due to an unhealthy diet habit, obesity, increase incidence of chronic diseases and lack of exercise

A prospective cohort study of NTSE in adults in rural Greece (2012), found that acute abdomen is the most common condition in his study, urological emergency from acute urinary retention secondary to benign prostatic hyperplasia is the second common cause of NTAA, intra-abdominal malignancies are the third common cause of non-traumatic surgical emergencies [3]. Many studies on NTASE worldwide are limited to specific age groups such as women, who are at risk of genitourinary disease, that may cause acute abdominal pain; and elderly patients who

present with malignancies and atypical symptoms of diseases. [1, 4]

In Rwandan district hospitals (2015), 356 patients presented with non-traumatic emergency surgical conditions, the majority was male (57.2%) and adults, the most common diagnostic issue was soft tissue infections, followed by acute abdominal conditions, of all patients, 54% were operated. [7] Some studies suggest accurate and rapid diagnosis of NTAA will help in reducing related complications and will prevent the death for many patients, this is done by laboratory studies & imaging techniques (CXR, abd x-ray, U/S,CT-SCAN, MRI).[8]

In another study in India (2017) of 98 patients of NTAA, males have higher incidence of acute abdomen with the young age group (21-30 years) most commonly affected. Perforated peritonitis constituted the most common cause of acute abdomen (39.7%), followed by acute appendicitis (37.7%), followed by intestinal obstruction (14.2%) [9], these results were close and somewhat similar to the results found in this study, the majority of patients were male (54.3%), young and middle-aged, this may be due to a tiring lifestyle, unhealthy nutritional pattern, alcohol consumption and chronic diseases associated with males.

In another retrospective study done at Institute of Surgery of the University of Rome on 450 patients presenting with acute abdominal pain to the emergency surgical department, found acute appendicitis was the most common cause (15.5%), cholelithiasis (12.5%) and abdominal malignancy (10.3%). [10]

In prospective observational study that was conducted in a tertiary care center in India (2012), of all patients, ureteric colic (16.3%), UTI (12.5%), acute pancreatitis (11%) and acute appendicitis (10.6%) were the most common causes of NTAA, surgery was performed on 25.8% of patients. [10] The reported lifetime risk of appendicitis in the United States is 8.6% in men and 6.7% in women; large studies from the United Kingdom and United States have shown that complicated appendicitis is found at surgery in about 16.5% to 24.4% of cases. [11]

In this study, 54.3% of all patients were males, 45.7% were females, with young & middle age group. Acute appendicitis was the first common cause of NTASE, the second reason of NTASE was acute cholecystitis, perianal abscess was the third reason, the forth reason was gluteal abscess, followed by complicated inguinal hernia & fecal impaction respectively. Laboratory investigations were done for most of patients, while imaging investigations were done for some of them who are in suspicious features & when indicated.

Comorbid conditions were 1 of patients suffered from Ischemic heart disease, 3 of patients suffered from Diabetes mellitus, 2 of patients suffered from Hypertension. The final diagnosis was the same of that of provisional diagnosis. Surgical operations, were done for 110 of patients, while 28 of patients quitted on their responsibilities & two of patients were send for further opinion.

We can conclude from the findings of this study that traumatic abdominal surgical emergencies were the most common cause for general surgical admissions. Most of the patients were young males. Acute appendicitis was the most common diagnosis. The limitation of this study was incomplete patient's records in the emergency department that were not filled in a proper way.

References

1. John Owoade Agboola, Samuel Adegboyega Olatoke, Ganiyu Abebisi Rahman. Pattern and presentation of acute abdomen in a Nigerian teaching hospital. Niger. Med J, 2014 (May-June); 55(3): 266–270.
2. Abdulmohsen A. Al-Mulhim. Emergency general surgical admissions Prospective institutional experience in non-traumatic acute abdomen: Implications for education, training and service. Saudi medical journal, 2006 Dec; 27(11):1674-9.
3. Apostolos Pappas, HarikliaToutouni, Stavros Gourgiotis, CharalamposSeretis. Comparative Approach to Non-Traumatic Acute Abdominal Pain Between Elderly and Non-Elderly in the Emergency Department: A Study in Rural Greece. J. Clin. Med. Res. 2013 Aug; 5(4): 300–304.
4. Malik A, Hall D, Devaney R, Sylvester H, Yalamarthi S. The impact of specialist experience in the surgical management of perianal abscesses. Int. J. Surg. 2011; 9(6):475-7.
5. Kim Edward LeBlanc, Leanna L. LeBlanc, KARL A. LeBlanc. Inguinal Hernias: Diagnosis and Management. Am. Fam. Physician, .2013 Jun 15; 87(12):844-848.
6. Sherly ABRAHAM, Haidy G. RIVERO, Irina V. ERLIKH, Vasantha K Kondamudi. Surgical and Nonsurgical Management of Gallstones. Am. Fam. Physician. 2014; 89(10):795-802.

7. Mpirimbanyi C, Nyirimodoka A, Lin Y, Bethany L Hedt-Gauthier , Jackline Odhiambo and Theoneste Nkurunziza , *et al.* Emergency general surgery in Rwandan district hospitals: a cross-sectional study of spectrum, management, and patient outcomes. BMC Surg. 2017 Dec 17:121.
8. KiranGangadhar, AniaKielar, Manjiri K. Dighe. Multimodality approach for imaging of non-traumatic acute abdominal emergencies. Abdominal Radiology. 2016 Jan, Volume 41, pp 136–148.
9. Rajiv Jain, Vikas Gupta. A prospective study of epidemiology and clinical presentation of non-traumatic acute abdomen cases in a tertiary care hospital of central India. Int.Surg.J. Vol. 4, 2017, 2349-2902.
10. LakshayChanana, Moses A. K. Jegaraj, KimminKalyaniwala, Bijesh Yadav, Kundavaram Abilash. Clinical profile of non-traumatic acute abdominal pain presenting to an adult emergency department. J Family Med. & Prim Care. 2015 Jul-Sep, 4(3): 422–425.
11. Ajay Malviya, AshfaqueHussain, Hitesh P. Bulchandani, Girish Bhardwaj, Subhash Kataria. Acomprehensive study on acute non-traumatic abdominal emergencies. ISJ. Vol. 4, 2017, 2349-2909.