

Non Traumatic Acute Abdominal pain (100 days study in Emergency Department)

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ABSTRACT

Background: Abdominal symptoms are possibly the most frequent of all symptoms encountered in surgical practice. Pain is the most common of all abdominal symptoms. Causes of acute abdominal pain include both medical and surgical. Most symptoms arise from intra-abdominal organs or systems while some may originate extra abdominally and are then referred to the abdomen. Medical causes of abdominal pain are encountered more frequently.

Objective: To study the causes of acute abdominal pain in patients attending emergency department in Al- Imamain Al- Kadhimain Medical City.

Type of the study: A prospective cross sectional study

Methods: The patients attending Emergency Department in Al- Imamain Al- Kadhimain Medical City over the period from April-2014 to April 2016. There was a one day call duty per week managed by the same surgical team (total one hundred days study). Only patients above 12 years old with acute non-traumatic abdominal pain were included in this study.

Results: The total number was 1217 patients over hundred days study. Their age ranges from 12-83 years; average age was 36.18 ±17 year. There was slight female predominance, 638 (52.42%) female patients and 579 (47.58%) male patients. The most common cause of abdominal pain was acute appendicitis 252 (20.70%), followed by ureteric colic 251 (20.62%), and acute cholecystitis 249 (20.46%). Conservative management was

done for 836 (68.69%) patients, while operative management done for 379 (31.14%) patients. Postoperative mortality was 8 (2.11%) patients. Medical causes of acute abdominal pain were found in 48 (5.74%) patients.

Conclusion: Not all the patients attending surgical emergency department needs operations. Causes of acute abdominal pain include both medical and surgical diseases, some of the medical diseases are very serious like acute viral hepatitis, myocardial infarction, and diabetic ketoacidosis; and should not submit those patients to unnecessary operations with serious and may be fatal postoperative complications. General urine examination is a must in all patients with acute abdominal pain. Electrocardiography (ECG) may be needed in old patients.

Keywords: Acute abdominal pain. Surgical causes. Medical causes.

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Abdominal symptoms are possibly the most frequent of all symptoms encountered in surgical practice. Causes of acute abdominal pain include both medical and surgical⁽¹⁾. Most symptoms arise from intra-abdominal organs or systems while some may originate extra abdominally and are then referred to the abdomen. Pain is the most common of all abdominal symptoms. Acute abdominal pain accounts for up to 40% of all emergency surgical hospital admissions^(2,3,4).

The abdominal wall and parietal peritoneum are supplied by the somatic nervous system, while the abdominal organs and visceral peritoneum are innervated by the autonomic nervous system. Therefore pain will appear to change in position and nature as the underlying pathology spreads from a local intraperitoneal structure to the parietal peritoneum. A complete history is generally the cornerstone of an accurate diagnosis. The history should include complete description of the patient's pain and associated symptoms. Medical, surgical, and social history should also be sought as this may provide important information. Visceral pain is generally

perceived in the midline because afferent impulses from visceral organs are poorly localized. Visceral nociceptors can be stimulated by distention, stretch, vigorous contraction, and ischemia. Lateral abdominal pain may be due to renal and ureteric diseases; pain is usually reported in the back for retroperitoneal structures such as the kidneys⁽⁵⁾. Gradual onset of pain may be expected in an infectious or inflammatory process. Pain that awakens the patient from sleep should be considered serious until proven otherwise. The severity of pain, its duration, progression character, radiation and referral, also may give clues to the underlying possible pathological process⁽⁶⁾. Any history of previous episodes of the same attack of pain and its aggravating and relieving factors (it is important to establish whether jarring motions such as coughing or walking exacerbate the pain, suggesting peritoneal irritation)⁽⁷⁾. Associated symptoms, like anorexia, nausea and vomiting. Vomiting may occur in almost any abdominal disease. Pain generally precedes vomiting in surgical conditions, with the important exception of esophageal rupture from forceful emesis⁽⁶⁾. Other symptoms like, bowel symptoms, fever; past medical and surgical history, current medications, social history are important to get

idea about the possible pathological process. Proper physical examination of the patient is very important to reach the diagnosis. The general appearance of the patient is noted first, patient's position, spontaneous movements, respiratory pattern, and facial expression all are important. Vital signs abnormalities should alert the clinician to a serious cause of the abdominal pain. However, the presence of normal vital signs does not exclude a serious diagnosis. While fever certainly points to an infectious cause or complication, it is frequently absent with infectious causes of abdominal pain. For example, fever is absent in over 30% of patients with appendicitis and in the majority of those with acute cholecystitis⁽⁸⁾. Proper abdominal examination looking for tenderness, rebound tenderness distention, abnormal peristalsis, any palpable mass, abnormal sounds, scars of previous surgery special signs (Murphy's sign, Rovsing sign,...etc.), tests for peritoneal irritation, and rectal examination. Proper investigations of the patients by ultrasound of abdomen, hematological and biochemical blood tests, urine examination, and other radiological or endoscopic investigations according to their indications. All diagnostic tests have a false-negative rate. If the history and physical examination leads to a high pre-test probability of a disease, a negative test cannot exclude the diagnosis. For example, the total leukocyte count can be normal in the face of serious infection such as appendicitis or cholecystitis⁽⁹⁾. Plain abdominal radiographs are of limited utility in the evaluation of acute abdominal pain⁽¹⁰⁾, although they may be helpful (free intraperitoneal air, and air fluid levels in intestinal obstruction). Common important causes of the acute abdomen in emergency department are, surgical diseases (like, acute appendicitis, acute cholecystitis, ...etc.) and non-surgical disease like; diabetic ketoacidosis, myocardial infarction, pneumonia, hepatitis, inflammatory bowel disease, typhoid, or enteritis.^(11,12) complicated hydatid cyst⁽¹³⁾ and other rare causes⁽¹⁴⁾ like phytobezoar⁽¹⁵⁾ and thromboemboli⁽¹⁶⁾. Regarding analgesia in the emergency department; the previous practice was to withhold analgesia. One recent review showed that opiate administration may alter physical examination findings, but these changes result in no significant increase in management errors⁽¹⁷⁾. Another study showed that morphine safely provides analgesia without impairing diagnostic accuracy⁽¹⁸⁾. Thomas and colleagues authored a prospective study where the administration of up to 15 mg of morphine did not affect diagnostic accuracy in patients with acute abdominal pain⁽¹⁹⁾.

Laparoscopy has become a routine procedure in the management of acute abdominal disease and can be a useful therapeutic and additional diagnostic tool in selected cases.⁽²⁰⁾ Older patients tend to show less specific symptoms and signs, and present later in the course of their illness. Morbidity and mortality in older patients presenting with acute abdominal pain are high. There should be a higher index of suspicion of serious pathology in older age patients. Aortic aneurysm and bowel ischemia are more prevalent in the elderly. Angiodysplasia of the colon is more common and can cause gastrointestinal hemorrhage. Medical causes of abdominal pain are encountered more frequently⁽²¹⁾.

Methodes

A prospective cross sectional study was done for patients attending the emergency department in Al-

Imamain Al- Kadhmain Medical City over the period from April-2014 to April 2016. Patients above 12 years old complaining of acute non-traumatic abdominal pain were included in this study. Patients with history of trauma were excluded from the study. Children up to age of 12 years were also excluded from the study because they were managed by pediatric surgeon in the same hospital. Al- Imamain Al- Kadhmain Medical City is a tertiary teaching hospital; and there was a one day call duty per week managed by the same surgical team. Proper detailed history and physical examination done for patient and the data documented in the reception notes, with special concern to the details of the abdominal pain; its site, onset, character, severity, radiation, aggravating and relieving factors, associated symptoms,...etc. Proper physical examination and appropriate investigations were done for the patients. Management of patients was started by assessment and management of airway, breathing and circulation (ABC) as a priority. Active resuscitation and treatment was done when the patient looks ill, septic or shocked.

All patients were investigated by: hemoglobin, white blood cells count (WBC), general urine examination (GUE), and ultrasound (U/S) of the abdomen. Some patients need other blood tests like blood sugar, blood urea, serum creatinin, liver function test, serum amylase, and other serological and biochemical blood tests. Radiological examinations like; plain X-ray of abdomen erect and supine (in cases of suspicion of intestinal obstruction), chest X-ray, computerised tomography (CT scan) of abdomen, magnetic resonance image (MRI) of abdomen, magnetic resonance cholangiopancreatography (MRCP) for jaundiced patients, and upper and lower gastrointestinal tract endoscopy when they are indicated. Electrocardiography (ECG) done for old patients with suspicion of inferior myocardial infarction.

The patients were divided into two groups, Group A, include patients were treated conservatively or referred to other specialist like, gynecologist, urologist, or internal medicine specialist; and Group B patients were treated by surgical intervention in the same day or next day of admission to the hospital.

Results

There was one call duty per week with total 100 days during two years over the period from April 2014-April 2016. There was 7-15 patients per day presented with non-traumatic acute abdominal pain, a total of 1217 patients over two years study. The age of the patients ranges from 12-83 years, average age was 36.18 ± 17 year. There was slight female predominance, 638 (52.42%) female patients and 579 (47.58%) male patients (female: male ratio is 1.1:1). Conservative management (Group A) done for 836 (68.69%) patients, while operative management (Group B) done for 379 (31.14%) patients. Figure 1: shows the number of patients underwent conservative versus operative management.

The most common cause of abdominal pain was acute appendicitis 252 (20.70%), followed by ureteric colic 251 (20.62%), and acute cholecystitis 249 (20.46%). Other

causes of abdominal pain according to their frequency were: irritable bowel syndrome 76 (6.24%), peptic ulcer 56 (4.60%), non-specific abdominal pain, dyspepsia and intestinal colic 52 (4.27%), intestinal obstruction 51 (4.19%), generalized peritonitis 45 (4.39%), acute pancreatitis 36 (2.95%), inflammatory bowel disease (ulcerative colitis and Crohn's disease 32 (2.26%), renal failure (uremia) 22 (1.80%), obstructed umbilical and para-umbilical hernia 11 (4.48%), viral hepatitis 11 (0.90%), Herpes zoster 8 (0.65%), mesenteric lymphadenitis 7 (0.57%), obstructed inguinal hernia 6 (0.49%), empyema of gall bladder and liver abscess 5 (0.41%), upper gastrointestinal (GIT) bleeding due to peptic ulcer 5 (0.41%), incisional hernia 4 (0.32%), diabetic ketoacidosis 4 (0.32%), inferior myocardial infarction 3 (0.24%), lower GIT bleeding (angiodysplasia) 2 (0.16%), ruptured hydatid cyst of liver 2 (0.16%), diverticulitis 2 (0.16%), and Crohn's disease 1 (0.08%).

Operative findings for Group B patients are: acute appendicitis 252 (66.49%), intestinal obstruction 51 (13.45%), generalized peritonitis 45 (11.87%), obstructed umbilical, para-umbilical, and incisional hernia 15 (3.95%), obstructed inguinal hernia 6 (1.58%), empyema of gall bladder and liver abscess 5 (1.31%), Meckel's diverticulitis 3 (0.79%), and right ovarian cysts misdiagnosed as a case of acute appendicitis 15 (3.95%) patients. Perforated acute appendicitis with localized peritonitis was found in 45 (11.87%) patients. Table (1) shows types of operations and incisions for Group B patients.

Causes of intestinal obstruction are: Adhesions and bands 22 (5.80%), obstruction of large bowel due to Carcinoma of the colon 16 (4.22%), Small intestinal lymphoma 5 (1.31%), Intussusception 5 (1.31%), and Volvulus of sigmoid colon in 3 (0.79%). Table (2) shows the operative findings in (Group B) patients and their outcomes.

Causes of generalized peritonitis were: Perforated peptic ulcer 12 (3.16%), primary peritonitis 5 (1.31%), tuberculosis of peritoneum (TB) 5 (1.31%), hemorrhagic pancreatitis 5 (1.31%), ruptured big ovarian cyst and tumors presented as a case of acute abdomen and generalized peritonitis 5 (1.31%), perforated typhoid ulcer 5 (1.31%), mesenteric thrombosis and gangrenous bowel 3 (0.79%), perforated gall bladder and biliary peritonitis due to sever cholecystitis 3 (0.79%), perforated retroileal appendicitis with generalized peritonitis and septic shock 1 (0.26%), and sigmoid Colonic diverticulitis 1 (0.26%). Table (2) shows the

operative findings in (Group B) patients and their outcomes.

Postoperative mortality was 8 (2.11%) patients: one patient (0.26%) had septic shock and generalized peritonitis due to perforated retroileal appendicitis, 3 (0.79%) patients had mesenteric thrombosis of the superior mesenteric artery with gangrene of the whole small bowel ascending and right side of the transverse colon, 1 (0.26%) patient had sever hemorrhagic pancreatitis and died due to respiratory distress syndrome, 2 (0.52%) patients had intestinal lymphoma involving most of the small bowel and presented with intestinal obstruction, and 1 (0.26%) patient 78 years old presented with Empyema of gall bladder and liver abscess. Table (4) shows postoperative mortality.

The diagnosis of patients in Group A were; ureteric colic with different findings of urinary tract infection (UTI) hydronephrosis and ureteric stones 251 (20.62%), acute cholecystitis 249 (20.46%), irritable bowel syndrome 76 (6.24%), peptic ulcer 56 (4.60%) patients, non-specific abdominal pain dyspepsia and intestinal colic 52 (4.27%) patients, acute pancreatitis 36 (2.95%), Inflammatory bowel disease (ulcerative colitis and Crohn's disease 32 (2.26%), renal failure (uremia) 22 (1.80%), acute viral hepatitis 11 (0.90%), Herpes zoster 8 (0.65%), mesenteric lymphadenitis 7 (0.57%), upper GIT bleeding (peptic ulcer) 5 (0.41%), diabetic ketoacidosis 4 (0.32%), inferior myocardial infarction 3 (0.24%), diverticulitis 2 (0.16%). Table (3) shows the site of pain and the final diagnosis and outcomes in patients treated conservatively (Group A patients).

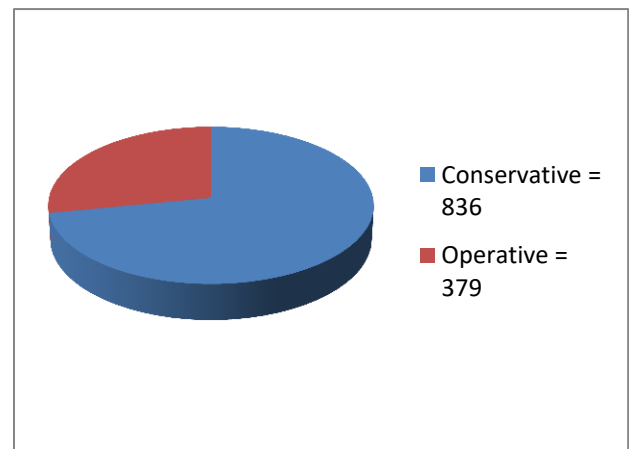


Fig 1: Pie shows the number of patients underwent conservative versus operative management.

Table (1): Types of operations and incisions done for Group B patients.

Type of Incision	Type of Operation	Number	Total Operations
Grid Iron Incision	Appendectomy for acute appendicitis	189(49.86%)	252 (66.49%)
	Appendectomy for acute perforated appendicitis	45(11.87%)	
	Appendectomy and ovarian cystectomy	15(3.95%)	
	Appendectomy and Meckel's diverticulectomy	3(0.79%)	

Midline longitudinal Incision (laparotomy)	Laparotomy for intestinal obstruction	51 (13.45%)	101 (26.64%)
	Laparotomy for generalized peritonitis	45 (11.87%)	
	Colectomy for Lower GiT bleeding (angiodysplasia)		
	Ruptured hydatid cyst of liver		
	Cronh's disease		
		1 (0.26%)	
Transverse Abdominal Incision	<u>Obstructed Hernia</u> umbilical and para-umbilical Hernia	11 (4.48%)	15 (3.95%)
	Incisional Hernia.	4 (1.05%)	
Oblique Right Subcostal Incision	Empyema of gall bladder and liver abscess	5 (1.31%)	5 (1.31%)
Inguinal Incision	Obstructed inguinal hernia	6 (1.58%)	6 (1.58%)
Total Operations		379	379

Table (2): Shows the Operative findings in (Group B) patients.

Site of pain	Diagnosis	Type of operation	Number of patients	Outcome
periumbilical pain that shifts to the right lower quadrant	Acute appendicitis Perforated appendicitis ovarian cyst, and dermoid cyst of ovary Meckel's diverticulitis	Appendectomy	189(49.86%)	Cured
		Appendectomy	45 (11.87%)	Cured
		Appendectomy and ovarian cystectomy	15 (3.95%)	Cured
		Appendectomy and Meckel's diverticulectomy	3 (0.79%)	Cured
Generalized abdominal pain	Laparotomy for generalized peritonitis	Perforated peptic ulcer	12 (3.16%)	Cured
		Perforated typhoid ulcer	5 (1.31%)	Cured
		Primary peritonitis	5 (1.31%)	cured
		Hemorrhagic pancreatitis	5 (1.31%)	<u>One died</u>
		Ruptured ovarian cysts		4 Cured
		Tuberculosis of peritoneum (TB)	5 (1.31%)	Cured
			5 (1.31%)	Cured
		Mesenteric thrombosis		<u>3 died</u>
		Perforated gall bladder	3 (0.79%)	Cured
		Perforated retroileal appendicitis	3 (0.79%)	<u>Died</u>
	1 (0.26%)	Cured		
Generalized abdominal pain and abdominal distension	Laparotomy for intestinal obstruction	Adhesions and bands	22 (5.80%)	Cured
		Carcinoma of the colon	16 (4.22%)	Improved
		Small intestinal lymphoma	5 (1.31%)	<u>2 died</u>
		Intussusception		3 improved
		Volvulus of sigmoid	5 (1.31%)	Cured
		3 (0.79%)	Cured	
Central abdominal pain and pain at site of obstructed inguinal hernia	<u>Obstructed Hernia</u> umbilical and para-umbilical Hernia Inguinal Hernia Incisional Hernia.	<u>Reduction of the contents and repair of the hernia</u>	11 (4.48%)	Cured
			6 (1.58%)	Cured
			4 (1.05%)	Cured
Right hypochondrial	Miscellaneous (Total = 10)	Empyema of gall bladder and liver abscess	5 (1.31%)	<u>One died</u>
Lower abdominal pain		Lower GiT bleeding (angiodysplasia)	2 (0.52%)	4 improved
		Ruptured hydatid cyst of liver	2 (0.52%)	Cured
		Cronh's disease	1 (0.26%)	improved
Total			379	

Table (3): Site of pain and final diagnosis in patients treated conservatively.

<u>Site of pain and important associated features</u>	<u>Final Diagnosis (proved by investigations)</u>	<u>Number of patients</u>	<u>Outcome after conservative management</u>
Loin pain with dysuria and other urinary symptoms	Ureteric colic , urinary tract infection and pyelonephritis	251 (20.62%)	Referred to urologist
Epigastric and right hypochondrial pain	Acute cholecystitis	249 (20.46%)	Admission to surgical ward, discharged well, and given date for surgery. (cholecystectomy)
Diffuse abdominal pain and dyspepsia	Irritable bowel syndrome Normal investigations	76 (6.24%)	Discharged well, and follow up
Epigastric pain	Peptic ulcer	56 (4.60%)	Gastroduodenoscopy and follow up
Diffuse abdominal pain, dyspepsia, and intestinal colic	Non-specific abdominal pain and dyspepsia. Normal investigations	52 (4.27%)	Discharged well, and follow up
Epigastric pain radiating to back	Acute pancreatitis	36 (2.95%)	Admission to surgical ward and follow up
Periumbilical, right and left iliac fossa, and suprapubic pain	Inflammatory bowel disease (ulcerative colitis and Crohn's disease)	32 (2.26%)	Admission to surgical ward and follow up
Diffuse abdominal pain and dyspepsia	Renal failure (uremia)	22 (1.80%)	Referred to Nephrologist
Epigastric pain and vomiting	Viral Hepatitis	11 (0.90%)	Referred to Gastroenterologist
Unilateral loin pain	Herpes zoster	8 (0.65%)	Referred to Physician
Right iliac fossa	Mesenteric lymphadenitis	7 (0.57%)	Admission to surgical ward and follow up
Epigastric	Upper GIT bleeding (peptic ulcer)	5 (0.41%)	Gastroduodenoscopy and follow up
Epigastric pain and vomiting	Diabetic ketoacidosis	4 (0.32%)	Referred to Physician
Epigastric pain and vomiting	Inferior myocardial infarction	3 (0.24%)	Referred to Cardiologist
Left iliac fossa	Diverticulitis	2 (0.16%)	Admission to surgical ward and follow up
Total		836	

Table (4): Shows postoperative mortality and operative findings in Group B patients.

<u>Diagnosis</u>	<u>Operative findings</u>	<u>Number of patients</u>	<u>Comment</u>
Retroileal appendectomy	Generalized peritonitis and septic shock due to perforated retroileal appendicitis	1 (0.26%)	Delayed diagnosis of acute appendicitis due to its retroileal position (and absence of tenderness in the right iliac fossa) leading to perforation of the appendix with generalized peritonitis, sever septic shock with cyanosis
Mesenteric thrombosis	Complete obstruction of superior mesenteric artery with gangrenous small and large bowel	3 (0.79%)	Postoperative short bowel syndrome and sepsis leading to death of the patient. One patient survives 27 days postoperatively.
Hemorrhagic pancreatitis	sever hemorrhagic necrotizing pancreatitis leading to respiratory distress syndrome and mediastinitis	1 (0.26%)	Died due to respiratory distress syndrome due to sever hemorrhagic pancreatitis.
Lymphoma of the small intestine).	Lymphoma of the small intestine involving most of the small bowel and presented with intestinal obstruction). Advanced stage 4intestinal lymphoma.	2 (0.52%)	Advanced end stage intestinal lymphoma involving most of the small bowel
Empyema of gall bladder and liver abscess	Two liver abscesses and Empyema of gall bladder	1 (0.26%)	Old age male 80 years old with sepsis
Total		8 (2.11%)	

Discussion : Causes of acute abdominal pain include both medical and surgical ⁽¹⁾. In this study, surgical operations done for about one third of the patients attending the emergency department 379 (31.14%) patients; while more than two thirds of the patients 836 (68.69%) were treated conservatively. The most common cause of abdominal pain was acute appendicitis 252 (20.70%), followed by ureteric colic 251 (20.62%), and acute cholecystitis 249 (20.46%). The most common operation done were appendectomy for acute appendicitis 252 (66.49%), followed by laparotomy for intestinal obstruction 51 (13.45%), laparotomy for generalized peritonitis 45 (11.87%), surgery for different types of obstructed hernia 21 (5.54%), and miscellaneous operations 10 (2.63%). Many patients were presented with gastrointestinal perforation (perforated peptic ulcer 12 (3.16%) patients, and perforated typhoid ulcer 5 (1.31%) patients), typhoid fever is endemic in Iraq. Non-traumatic small bowel perforation is the most common form of gastrointestinal perforation in developing nations. Perforation of the intestines results in the potential for bacterial and chemical contamination of the abdominal cavity which leads to acute diffuse peritonitis ^(22- 25). Previous studies have reported that non traumatic small bowel perforation due to enteric fever is common ⁽²⁶⁾.

There were 15 (3.95%) female patients underwent appendectomy for normal appendix with removal of ovarian cyst and dermoid cysts (the patients were presented with tenderness and rebound tenderness in the right iliac fossa); this misdiagnosis was due to absence of ultrasound at midnight; so ultrasound should be available in the emergency department day and night. Postoperative mortality was 8 (2.11%) patients; one (0.26%) young female patient 22 years old was presented with diffuse abdominal pain for three days, she was consulted junior doctors (before she came to the Al- Imamain Al- Kadhmain Medical City) and was misdiagnosed and discharged her due to lack of tenderness and rigidity in the right iliac fossa; once she was presented to the Al- Imamain Al- Kadhmain Medical City; she was in a state of septic shock and signs of generalized peritonitis; active resuscitation done for her with broad spectrum intravenous antibiotics, and intravenous fluid; and explorative laparotomy shows diffuse peritonitis due to perforated retroileal appendicitis, but unfortunately the patient died 6 hours postoperatively in the intensive care unit.

The modern physician should be humbled by the fact that, despite diagnostic and therapeutic advances (computed tomography [CT], ultrasonography, and laparoscopy), the misdiagnosis rate of the most common surgical emergency, acute appendicitis, has changed little over time ⁽²⁷⁾. In limited studies, the psoas, obturator, and Rovsing signs demonstrate a low sensitivity (15%-35%) but a relatively high specificity (85%-95%) for appendicitis ⁽²⁸⁾. Another 3

(0.79%) patients, two females and one male, were presented with acute generalized abdominal pain for two to three days and acute abdomen; explorative laparotomy shows gangrenous bowel including the whole small intestine, ascending and transverse colon; (complete obstruction of the superior mesenteric artery); there was no other choice other than resection of the gangrenous bowel and end to end anastomosis, and postoperative parenteral nutrition; but the patients died less than one month postoperatively.

One young male patient 1 (0.26%), presented with severe acute abdominal pain with generalized abdominal tenderness and rigidity; explorative laparotomy shows severe hemorrhagic necrotizing pancreatitis, the patient died second postoperative day in the intensive care unit due to respiratory distress syndrome.

Small intestinal lymphoma was found in 2 (0.52%) young female patients, their presentation was acute abdominal pain with signs of intestinal obstruction; explorative laparotomy shows multiple tumors of the small intestine. Postoperatively they were sent for chemotherapy, and they were died few months later. Eighty years old man was presented with abdominal pain, fever, and tenderness in the right hypochondrial region, ultrasound reveal empyema of the gallbladder and two liver abscesses, cholecystectomy and drainage of liver abscesses done for him, with broad spectrum intravenous antibiotics, but the patient died in the first week due to severe sepsis. Conservative management done for more than two thirds of the patients 836 (68.69%) attending the emergency department for acute abdominal pain; of them; 251 (20.62%) patients had ureteric colic, urinary tract infection and pyelonephritis, with different findings of hydronephrosis and ureteric stones; they were referred to the Urologist for further management.

Patients were admitted to the surgical ward, treated conservatively and discharged well, and were given instruction for follow up in the surgical consultation clinic, those patients include; 249 (20.46%) patients admitted to the surgical ward as a cases of cholecystitis, they were treated conservatively and given date for surgical removal of the gallbladder; 36 (2.95%) patients had acute pancreatitis, 32 (2.26%) patients had Inflammatory bowel disease (ulcerative colitis and Crohn's disease), 7 (0.57%) patients had mesenteric lymphadenitis, 5 (0.41%) patients were presented with abdominal pain and upper gastrointestinal bleeding due to peptic ulcer, and 2 (0.16%) patients had left iliac fossa pain and tenderness due to diverticulosis of the sigmoid colon.

Patients were treated conservatively and discharged well from the emergency department and given instructions for follow up in the surgical consultation clinic; those include 76 (6.24%) patients had irritable bowel syndrome, 56 (4.60%) patients had peptic ulcer proved by gastroduodenoscopy, 52 (4.27%) patients had non-specific abdominal pain, dyspepsia and intestinal colic, with normal investigations and no intra-abdominal signs of surgical disease.

Medical (non-surgical) diseases constitute 48 (5.74%) patients in Group B, and they were referred to Physicians according to their specialties; 22 (1.80%) patients had renal failure, they were presented with diffuse abdominal pain, dyspepsia, and hiccough (they thought that they had irritable bowel syndrome); their blood urea and serum creatinin were elevated and

ultrasound shows small size kidneys, with no signs of any surgical diseases; they were referred to Nephrologist; three of them underwent dialysis. Eleven (0.90%) patients had viral hepatitis; they were presented with epigastric and right hypochondrial pain with nausea and vomiting (they thought that they had peptic ulcer), their serum liver enzymes were elevated and liver function test, and virology screen prove the diagnosis of acute viral hepatitis, they were referred to Gastroenterologist for management. Eight (0.65%) young patients were presented with unilateral abdominal pain with no signs of intra-abdominal surgical disease; the presence of rash proved the diagnosis of herpes zoster and referred to Physician for treatment. Four (0.32%) young patients were presented with epigastric pain and repeated vomiting, (the junior doctor was thought that they had acute abdomen, but their general urine examination shows sugar in urine); there were no previous history of diabetes mellitus nor family history of the disease; the final diagnosis was diabetic ketoacidosis; they were referred to the medical emergency unite for management; urine examination is a must in management of patients with acute abdominal pain. Three (0.24%) old patients were presented with epigastric pain and repeated vomiting, their electrocardiogram (ECG) shows changes of inferior myocardial infarction; they were referred to cardiologist and medical emergency department for management; so ECG is mandatory in management of acute abdominal pain in elderly patients.

Those patients with medical diseases confuse the junior doctors that they may had acute abdomen; if those patients underwent explorative laparotomy and general anesthesia, they may develop catastrophic complications, and even death; so it is mandatory to be aware of non- surgical causes of acute abdominal pain. In comparison with other studies; observational study by Tariq *et al.* from Pakistan the most common cause of acute abdomen was acute appendicitis followed by acute pancreatitis and duodenal ulcer⁽²⁹⁾. A study done in Ghana, Africa, also reported acute appendicitis followed by typhoid fever with ileal perforation and acute intestinal obstruction as most common causes of acute abdominal pain; the mortality rate was 2.3%, which is comparable with our study⁽³⁰⁾ (postoperative mortality of this study was 8 (2.11%) patients). 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 department, appendicitis was the most common cause followed by non-specific abdominal pain (15.5%), cholelithiasis (12.5%) and abdominal malignancy (10.3%)⁽³¹⁾.

Conclusion : Causes of acute abdominal pain include both medical and surgical diseases, some of the medical diseases are very serious like acute viral hepatitis, myocardial infarction , and diabetic ketoacidosis; and should not submit those patients to unnecessary operations and general anesthesia with serious and may be fatal postoperative complications. General urine examination is a must in any patient with acute abdominal pain. Some patient with renal failure may present with vague abdominal pain, dyspepsia, and abdominal distention and they thought that they have irritable bowel syndrome; so laboratory test for blood urea and serum creatinin are important in those patients when presented with abdominal pain. Inferior myocardial

infarction may present with epigastric pain and vomiting specially in old age patients, so ECG is mandatory in those patients.

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