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A retrospective study of age and sex distribution in non-traumatic acute abdomen in a tertiary care hospital

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Abstract
Background: Acute abdominal pain is one of the most frequent causes of admission to emergency departments. Here the difference of outcomes or etiology of acute abdominal pain according to age is an important criteria. The aim is to study the age and sex distribution of these conditions. In Trichy SRM Medical College Hospital and Research Centre, Irungalur, Trichy.
Methodology of study: This study material consists of 200 cases of Acute Abdomen admitted in Five Surgical units in our Department Of Surgery, Trichy SRM Medical College Hospital And Research Centre, during the period from Oct 2017 to sep 2019.All the patients admitted with acute abdomen pain were thoroughly examined and appropriate investigation taken.
Results: Among 200 patients acute appendicitis is the commonest non traumatic abdominal emergency with male dominance in 3rd decade. Duodenal perforation is common in males of 4th and 5th decade. There is a decrease in the average age of peptic ulcer perforation with an overwhelming majority of male patients. The incidence of intestinal obstruction is equal in both males and females, mostly due to post-operative adhesions. Inguinal hernia is the commonest obstructed hernia with male dominance with a shift towards the younger age group.
Conclusion: Judging from the results of this present study it comes to a firm conclusion that acute abdominal emergencies incidence is more common in males when compared to female and the most common age group is 20-50 years.

Keywords: Acute abdomen, non traumatic surgical conditions, age group in surgical emergency perforations

Introduction

An Imprecise term 'Non Traumatic Acute Abdomen' leaves much to be desired from a semantic point of view but is useful in practice, included under the heading are all the painful abdominal syndromes, sometimes benign, frequently potentially lethal and of several origin; characterized by sudden appearance of pain with accompanying local or general signs and symptoms.

The majority of emergency admissions in surgical ward are patients complaining of NON Traumatic Acute Abdominal Pain. Non Traumatic Acute abdominal pain continues to provide a large work load for the general surgeon and also many diagnostic [1] and management problems. It is helpful to know the patient's age, since the incidence of certain condition is limited within a particular range of years. Acute intususception occurs generally in infants under 2 yrs of age [2]. Obstruction of large intestine by a cancer is seldom seen before thirty, is infrequent before forty but very common after forty years of age. Conditions such as cholecystitis or twisted pedicle of an ovarian cyst may occur in childhood though much more commonly in adult life. Sex: Male In the adult population most cases of acute abdominal pain is benign rather than malignancy. A lesser percentage in the out-patient setting have a severe or life-threatening cause or require surgery. Acute appendicitis, diverticulitis, cholecystitis [8], and bowel obstruction are common causes of acute abdominal pain, but other important causes like perforated viscus or vascular diseases such as aortic dissection and mesenteric ischemia are less common. Female: The female gender represents a special population from a diagnostic point of view in the clinical suspicion of acute abdomen because abdominal pain in women may be related to pathology in the pelvic organs. Ectopic pregnancy, pelvic inflammatory disease, and hemorrhagic ovarian cysts are the most commonly diagnosed gynaecologic conditions presenting with acute pelvic pain. Ovarian torsion and degenerating fibroids occur less frequently.

Other causes to consider include endometriosis, and postpartum causes such as endometritis, or ovarian vein thrombosis. Finally, nongynaecologic conditions may overlap in their presentation of acute pelvic pain and should also be considered; the most important of these is acute appendicitis. An accurate menstrual history is especially valuable in the assessment of abdominal pain in females. The type of contraception and its duration of use are also important.

Aim of the study

To study the age and sex distribution of various non -traumatic abdominal surgical emergencies

Materials and Methods

This study material consists of 200 cases of Acute Abdomen admitted in Five Surgical units in our Department of Surgery, Trichy SRM Medical College Hospital and Research Centre, during the period from Oct 2017 to sep 2019.

Methods

The age and sex incidence, the common clinical presentation, the different types of management were analysed and discussed in relevance to each of the patients. The various investigations that were available in our institution had been used, that includes biochemical and radiological. The various treatment options were considered for each of the cases and each case was provided best optimal treatment available in our institution

Inclusion Criteria: All the patients admitted with acute abdomen, not trauma induced and managed surgically are included in the study.

Exclusion Criteria: Patients with trauma induced abdominal injuries were excluded from the study. Children below the age of 12 and gynaecological emergencies are excluded from the study. Patients treated by conservative management are excluded from the study.

Results

A total of 200 patients were included in this study. The study was conducted over a period of 15 months from 2017 Oct to 2019 September. Each etiological group of emergencies will be discussed separately.

1. **Appendicitis:** total of 132 cases of acute appendicitis were operated on. The youngest was a 12 yr. old male, while the oldest was 58 yrs. old male. It was observed that the majority of cases, 61 cases (46.21%) were in the 21-30years age group. Of the 132 cases studied 88 cases (66.67%) were male and 44 cases (34.09%) were female patients. This reflected of a male preponderance.
2. **Hollow Viscus Perforation:** A total of 28(14%) cases of perforations were studied in the given time period.
3. **Duodenal Perforation:** There were no cases in 1st decade, 2 cases (9.09%) in the second decade, 5 cases (22.73%) in the third Decade, 5 cases (22.73%) in the fourth decade, 5 cases (22.73%) in the fifth decade and 5 cases (22.73%) in the 6th decade [3]. The youngest was 24years old male and the oldest was 64years old male. Off all the patients who underwent surgery, 20 cases (90.9%) were males and 2 cases (9.09%) were females.
4. **Ileal Perforation:** There were a total of 4 cases (14.29%) patients, all the 4 cases were male (100)
5. **Obstructed Hernia:** A total of 17 (8.5%) patients were studied, of which inguinal hernia was13cases (76.47%), Incisional hernia was 1 case (5.88%), umbilical hernia was 1case (5.88%), femoral hernia was 1 case (5.88%) and epigastric hernia was 1 case (5.88%).
6. **Obstructed Inguinal Hernia:** There were 4 cases (23.53%) in the 2nd decade, 2 cases (11.76%) in the 3rd decade, 2 cases (11.76%) in the 4th decade, 1 case (5.88%) cases in the 5th decade, 2 case (11.76%) in 6th decade, 1 case (5.88%) in 7th decade and 1 case (5.88%) in 8th decade. All the 13 cases (82.35%) were male in case of obstructed inguinal hernia.
7. **Obstructed Incisional Hernia:** Only 1 (5.88%) female patient belonging to 5th decade had incisional hernia with history of abdominal hysterectomy. Anatomical repair after reducing the contents was done.
8. **Obstructed Umbilical Hernia:** Only 1 female patient (5.88%) belonging to 8th decade. The contents were reduced and anatomical repair was done in all cases.
9. **Intestinal Obstruction:** Obstructed inguinal hernia is discussed above. The other intestinal obstructions are discussed broadly as small and large bowel obstruction. There was no cases in the first decade, 2 cases (11.11%) in the second decade, 3 cases (16.67%) in the third decade, 3 cases (16.67%) in the fourth decade and 4 cases (22.24%) in the fifth decade, 5 cases (27.08%) in the 6th decade and 1 case (5.56%) in 7th decade. There were 9 males (50%) and 9 females (50%) cases.

Table 1: Over all incidence of Acute Abdomen

Acute abdomen	Total no	%	Male	%	Female	%	Chi square	P value
Appendicitis	132	66	88	66.67	44	34.09	10.02	0.04
Perforation	28	14	26	90.9	2	9.09		
Obstructed Hernia	17	8.5	14	82.35	3	17.65		
Intestinal Obstruction	18	9	9	50	9	50		
Others	5	2.5	3	60	2	40		

Discussion

A total of 200 cases that needed emergency surgical intervention [4] were studied. The remaining patients were managed conservatively.

Incidence of appendicitis in 21-30 age groups, which accounted for almost 46.21% of all cases and male incidence (66.67%) predominated over the female incidence 34.09%.

As expected, duodenal perforations [5] contributed for more than 78.57% of our cases followed by ileal perforation 14.29%. Incidence of duodenal perforation in the 21-70 age [6] groups accounted for 81%.

The youngest was 24years old male and the oldest was 64years old male. Our study showed a 90.09% incidences of male compared to western studies which shows only a 50% incidence.

The common incidence of ileal perforation in my study is found to be 4th and 5th decade. All the 4 cases were male.

A total of 17 (8.5%) patients were studied, of which obstructed inguinal hernia was 13 cases (76.47%), incisional hernia was 1 case (5.88%), umbilical hernia was 1case (5.88%), femoral hernia was 1 case (5.88%) and epigastric hernia was 1 case (5.88%). The age incidence showed a preponderance to the 2nd decade. There was a preponderance of male patients. There were 2 sliding hernias which got obstructed. There was one case of recurrent inguinal hernia with obstruction. Only 1 (5.88%) female patient belonging to 5th decade had incisional hernia with history of abdominal hysterectomy. Only 1 female patient (5.88%) belonging to 8th decade [7]. Among the obstructed inguinal hernia there is a shift towards the younger age group.

There were more than 50% incidence of patients between 20 and 40 in our series. The average was 60 years. Pointing to the fact that small bowel obstruction was more a disease of the older age group than the younger with male dominance as 55.55% were male and 44.44% were females. The commonest cause was post-operative adhesions forming 66.66% of the cases studies. This confirmed the general view that adhesion were the commonest cause of intestinal obstruction next common cause were the stricture obstruction forming 11.11% of cases. Of the 3 cases of large bowel obstruction [9] in our series the average age was 20-30 yrs. This again points to the fact that large bowel obstructions 62.5% cases were male patients. Constitutes to 17.65% of the total cases of large bowel obstruction. Of the 3 cases of sigmoid volvulus, 2 cases were females belonging to the 4th decade and 1 male belonging to 5th decade.

Conclusion

Judging from the results of this present study it comes to a firm conclusion that acute abdominal emergencies incidence is more common in males when compared to females. Acute abdominal emergencies incidence is more common in males when compared to females. Among the cases of acute appendicitis, the incidence is more males of the 3rd decade when compared to females. In Duodenal perforations cases, the incidence is more in males of the 4th and 5th decade when compared to females. The study showed a decrease in the average age of peptic ulcer perforation with an overwhelming majority of male patients. Cases of intestinal obstruction, the incidence is equal in both males and females, mostly due to post-operative adhesions. And cases of small bowel obstruction, the commonest cause is found to be post-operative adhesions. There was almost equal incidence among both sexes. There is a shift towards the younger age group with male predominance in this study. In conclusion, this study demonstrated significant age groups gender predominance incidence outcomes and etiology of acute abdominal pain. We hope that this study will provide useful information and assist future epidemiological investigations in Tamil Nadu.

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