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Unravelling Acute Abdomen – A Clinical Study

Dr. Harisha N S M.S[1], Dr. Hemanth Vupputuri M.S[2], Dr. Lakshmi Narayana G M.S[3]

[1]Assistant Professor, Department of Surgery, Kempegowda Institute of Medical Sciences and Research Centre, K.R Road ,V.VPuram, Banglore Karnataka PIN: 560004, India

[2]Resident, Department of Surgery, Kempegowda Institute of Medical Sciences and Research Centre, K.R Road ,V.VPuram, Banglore Karnataka PIN: 560004, India

[3]Resident, Department of Surgery, Kempegowda Institute of Medical Sciences and Research Centre, K.R Road ,V.VPuram, Banglore Karnataka PIN: 560004, India

Abstract: ***Introduction: Acute abdomen means, the patient complains of acute onset abdominal symptoms that suggest a disease, which definitely or possibly threatens life and may or may not demand immediate operative interference. The diagnosis and management of acute abdomen forms a large part of routine duties of a general surgeon throughout his career. The aim of the research is to study the proportion of occurrence of various causes of non traumatic acute abdomen in KIMS Hospital and Research Centre, Bangalore with respect to age, sex. To study the clinical features of various causes of non traumatic acute abdomen patients. To know the proportions of success of the treatment after surgery for different causes. Methods: The study was conducted in KIMS.Hospital and Research Centre , Bangalorefrom January 2014 to July 2014. 100 cases have been studied. Those acute cases, who underwent surgery have been only included in this study because of a correct diagnosis could be established. Acute abdomen of traumatic origin was not included in this study. Pre-operative history of all acute abdominal emergencies has been taken to arrive at pre-operative diagnosis. In all the cases, operative findings and post-operative diagnosis were recorded. To arrive conclusion of 100 cases which have been studied. Results: Acute abdomen was more common in 2nd, 3rd, and 4th decade of life and in males. Acute appendicitis forms the commonest cause of acute abdomen. Hollow viscus perforation being the 2nd and intestinal obstruction forms the 3rd commonest cause of acute abdomen. Conclusion: In our study acute abdomen was found more commonly 2nd to 4th decade of life with male : female :: 69:31. Most common presenting symptom was pain abdomen. The commonest cause being acute appendicitis. Commonest position of appendix was retrocaecal and pathological type was non-perforated inflamed appendix, for which emergency appendectomy was done and mortality was nil. Hollow viscous perforation 2nd commonest and intestinal obstruction was 3rd commonest cause of acute abdomen***

Keywords: Acute Abdomen, Acute appendicitis, Hollow Viscus Perforation, Intestinal Obstruction.

1. Introduction

Acute Abdomen remains the important cause of morbidity and mortality in emergency. A delay in seeking a surgical opinion contributes to make the situation even worse [1]. Since presentation of a case of acute abdomen varies from mild dull aching pain, to frank guarding and rigidity with associated systemic symptoms, there is also need to know the spectrum of presentation as well as the most frequent among them.

Surgeon managing a case of acute abdomen should be aware of the diverse aetiology of acute abdomen. So, there is a need to enlist the different aetiologies leading to acute abdomen and the most enlist the different aetiologies leading to acute abdomen and the most common among them, so that the decision regarding the management of such a case can be taken at the earliest.

It is always advantageous to do an early surgery than a late surgery. The investigative procedure involved should be such that, they should give a definite diagnosis in a short-time. And after a diagnosis is made, the method of management of the case holds prime importance [2]. Since acute abdomen forms a significant chunk of cases attended by surgeons in emergency rooms a proper clinical profile of this condition is needed to be charted out to help in easy and early diagnosis and the required emergency intervention i.e the appropriate surgery in each case can be performed without delay. The present prospective study is done with the following aims and objectives:

1) To study the proportion of occurrence of various causes of non traumatic acute abdomen in KIMS Hospital and Reseach Centre Bangalore with respect to age, sex.
2) To study the clinical features of various causes of non traumatic acute abdomen patients.
3) To know the proportions of success of the treatment either surgery or conservative for different causes.

The idea being that , the clinical profile of the condition in an Indian population will help in better diagnosis and treatment of the condition in centres across the country as the statistics differ from western literature owing to differences in factors such as race, environment, socioeconomic status , comorbidities etc. The study also helps at gaining an insight into the different methods of surgical management of these conditions.

2. Materials and Methods

The data for this prospective study was obtained from patients recruited from Department of General Surgery at KIMS Hospital and Research Centre, BangaloreIndia between January 2014 and July 2014. The study design and protocol was approved by the hospital Research and Ethics Committee. A total of 100 adult male and female patients were studied. These patients were 100 consecutive patients attending the emergency department of our hospital with

acute onset pain abdomen as the chief complaints and fitting the inclusion and exclusion criteria were studied. Inclusion criteria included

1) All cases presenting with acute onset abdominal pain >18 yrs of age
2) Those acute abdominal cases, which underwent surgery, as a correct diagnosis could be established only then.

Exclusion Criteria included
1. Patients with blunt and penetrating trauma were excluded from the study.
2. Patients with proved renal calculi disease were also excluded.
3. Pediatric patients less than 18yrs were excluded from the study.
4. Patients of poor general condition with disorientation not fit for giving informed consent.
5. Patient of acute abdomen due to non surgical causes were referred to appropriate specialty.
6. Patients with no abdominal signs after examination by three clinicians.

The patients were informed in detail about the details and procedure of the study, the requirement to do a ultrasound and Erect abdominal xray and chest xray . All patients who consented for the above only were included in the study. Enrolment of eligible patients began on January 2011 and continued till Jul 2012. A Total of 172 eligible patients were admitted of whom 166 agreed to give consent for the study and of whom 66 were excluded due to various reasons and the study was carried out in 100 patients. A detailed history and examination of the patient was carried out with specific importance to socioeconomic status of the patient, sanitary and household conditions of the patient and dietary habits of the patients. Data was systematically collected according to a proforma . The proforma included history, physical examination, appropriate minimal investigations, treatment and post op follow up was done at least for 4 months to note complications and success of treatment. Routine investigation like haemoglobin, bleeding time ,clotting time , total WBC count, renal function test, radiological investigations like X ray, USG done in all cases. All patients were given informed consent for surgery i.elaparotomy was carried out for most patients, to establish diagnosis and treated accordingly. All the patients were prepared for surgery on emergency basis, on table antibiotics were given and all surgeries were done under GA by a surgeon of more than 5 yrs clinical experience. The intraoperative findings were meticulously recorded and all patients were given similar post operative care.

Statistical Methods: Descriptive statistical analysis has been carried out in the present study. Results on continuous measurements are presented on Mean ± SD (Min-Max) and results on categorical measurements are presented in Number (%). Significance is assessed at 5 % level of significance. Chi-square/ Fisher Exact test has been used to find the significance of study parameters on categorical scale between two or more groups. 95% Confidence Interval has been computed to find the significant features. Confidence Interval with lower limit more than 50% is associated with statistical significance.

Statistical software: The Statistical software namely SAS 9.2, SPSS 15.0, Stata 10.1, MedCalc 9.0.1 ,Systat 12.0 and R environment ver.2.11.1 were used for the analysis of the data and Microsoft word and Excel have been used to generate graphs, tables etc**.**

3. Results

Out of 100 cases of acute abdominal conditions from January 2014 to July 2014, which were operated at KIMS. Hospital and Research Centre Bangalore, the leading cause of acute abdomen wasacute appendicitis constituting 46 (Table 1). The majority of the patients are in the age group of 31 to 40 years and only 2 patients were above 60 years. Youngest patient in the study group was 18 years and eldest patient was 72 year old. Out of 100 cases the acute abdomen 69 cases were males, 31 cases were females. Of 46 cases of acute appendicitis male were 30, and females 16. Out of 41 cases of Hollow viscus perforation 31 were males, 10 were females. 8 cases were males in intestinal obstruction and 4 cases were females. In general, all types of acute abdomen has got preponderance in males. The symptomatology of all the cases is shown in Table 2. The various clinical signs in all the cases is shown in Table 3. The most common cause of acute abdomen was appendicitis and the most common pathological type of appendix was inflamed appendix without perforation. The position of appendix varied on the following lines. Retro-caecal appendix in 29 cases(63.04%), Pelvic appendix in 11 cases (23.91%), Pre-ileal appendix in 2 cases (4.3%), Paracaecal position in 2 cases(4.3%) and Post Ileal in 2 cases (4.3%).

The second most common cause of acute abdomen was hollow viscus perforation. The location of the perforation varied as shown in Table 4. Out of 100 patients in our study 20 (48.78%) had duodenal perforation, 15 (36.5%) patient had ileal perforation and 6(14.63%) had perforated gastric ulcer.

The third most common cause of acute abdomen was intestinal obstruction. Out of 12 cases intestinal obstruction, the commonest cause was obstructed inguinal hernia 5(41%). The various causes of obstruction were shown in Table 5.

4. Conclusion

Totally 100 cases were studied. Acute abdomen of traumatic origin was not included in this study, to ensure correct diagnosis. The leading cause of acute abdomen was acute appendicitis, constituting 46% of cases of which appendectomy was done in 42 cases and mortality was nil. The second common cause of acute abdomen was perforated duodenal ulcer constituting 20% of cases of which mortality was28.57% (2cases). The third common cause was ileal perforation accounting for 15% of cases of which mortality was 42.85%(3 cases).Acute intestinal obstruction constitute 12% of cases with mortality of 28.57% similar to other studies [3].

Acute appendicitis was the commonest cause of acute abdomen. Out of total 46 cases studied 6 were gangrenous

and 34 were inflamed, which were treated by appendicectomy.4 cases with diagnosis of appendicular mass and 2 with appendicular abscess were managed conservatively. The appendicular mass was closed without disturbing the mass. And in appendicular abscess it was drained and corrugated drained was kept in right flank. In both cases interval appendectomy was done after 6 weeks. The commonest position of appendix seen was retreocaceal 29(63.04%) comparable to other studies [4].

Out of 12 cases of intestinal obstruction, 6 cases were due to obstructed hernias, 4 was due to post op adhesions. 1was due to sigmoid volvulus, 1 was secondary to intussusception and Out of 6 cases of obstructed hernias, 5 (83.33%) were due to obstructed right inguinal hernia, 1(16.7%) obstructed epigastric hernia. In 2 case of obstruction due to obstructed inguinal hernia resection and anastomosis was done in view of the gangrenous changes seen in the bowel. The other 3 were obstructed right inguinal hernia for which obstruction was relieved and hernioplasty was done. Incisional hernia were reduced and anatomical repair was done. Sigmoid volvulus for which derotation and fixing was done. The other two causes are intussusception for which reduction was done and post-op intestinal adhesions in which adhesions were released.

Hollow viscus perforation was the diagnosis in 41 cases of acute abdomen: 20 were duodenal perforation, 15ileal perforation and 6 gastric perforations. 3 cases of acute abdomen secondary to ileal perforation (42.85%)And 2 cases of duodenal perforation expired (mortality 28.57%) similar to findings in other studies [5,6]. All cases of duodenal,and gastric perforations were treated with simple closure and pedicle omental graft (Graham's patch).

Acute appendicitis was more common in second and third decade; youngest case in our study was a 18 year old male. It is uncommon after 40 years.Intestinal obstruction was more common in 3rd to 4th decade. Peritonitis secondaryto hollowviscus perforation was seen between the age group of 20-60 years. So acute abdomen is a clinical entity, which is more commonly seen in young adults and middle aged as found in other studies [7,8].

Of 100 cases of acute abdomen 69 were males and 31 females. Of 46 cases of acute appendicitis males were 30 and females 16. Out of 41 cases of Hollow viscus perforation 31 were males and 10 were females, 8 cases were males in intestinal obstruction 4 cases were females. In general all types of acute abdomen have got preponderance in males [9].

Out of 100 cases of acute abdomen, which underwent surgery, 7 cases died during postoperative period. 3 were due to ileal perforations; 2 was secondary to intestinal obstruction due to strangulated inguinal hernia. The acute intestinal obstruction was due to strangulated inguinal hernia, the distal ileal was gangrenous for which resection and ileo-ileal anastomosis was done. On the 6th postoperative day patient developed a faecal fistula and expired on 18th post operative day due to septicaemia. One case was due to ruptured liver abscess, for which laparotomy was done and Peritoneal lavage was done. Third generation cephalosporins were administered prophylactically in all cases due to enteric perforation and continued till the 7th post op day.

Acute abdomen is often a surgical emergency and a challenge to any surgeon. Out of 100 cases of acute abdomen acute appendicitis was 46% and perforation was 41%. Most common age group was 31 to 40 yrs of age. The sex incidence was male 69% and female 31%. Most common symptom of acute abdomen was pain abdomen 88% and next was vomiting 78%. Out of 46 cases of appendicitis 34 were due to inflammation without perforation and retro caecal position was 63.04%. Most common causes of perforation was duodenal ulcer perforation accounting for 48.78% [10,11]. Most common cause of intestinal obstruction was obstructed inguinal hernia.41% and next post op adhesion 33.33%. Total mortality among 100 cases studied was 7%.Most common cause of mortality was ileal perforation accounting for 42% of all mortality.

Authors Contributions

1. Dr. Harisha NS M.S -Concept and design of study and final approval of the version to be published.
2. Dr. HemanthVuppturi M.S -Drafting the article or revising it critically for important intellectual content
3. Dr. Lakshmi Narayana G M.S -Acquisition of data or analysis and interpretation of data

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References

[1] Richard H Turnage, Kathryn A Richardson, Benjamin D Li, John C McDonald.Abdominal wall, umbilicus, peritoneum, mesenteries, omentum and retroperitoneum. 18ed. Chapter 43. In: Sabiston Textbook of Surgery, TheBiological basis of modern surgical practice, Townsend CM, Beauchamp RD,Evers BM, KL Mattox, eds. Philadelphia: Elsevier; 2008. p. 1142.
[2] Shackel Ford's Surgery of the alimentary tract, Charles J Yeo, ed. Philadelphia: Saunders Elsevier; 2007. pp. 1025-33.
[3] Brain W. Elis, Simon Paterson-Brown, "Small Bowel Obstruction" in Hamilton Bailey's Emergency Surgery, Ch:38, Ed 13, Arnold Publications, 2000; 427-436
[4] D J Humes, J Simpson, Acute appendicitis, BMJ 2006;Vol 333;530-534
[5] Kimchi NA, Broide E. Shapiro M, Scapa E. Non-traumatic perforation of the
[6] small intestine - Report of 13 cases and review of the literature
[7] Hepatogastroenterology. 2002; 49(46): 1017-22.
[8] Rajender Singh Jhobta, Ashok Kumar Attri, Robin Kaushik, Rajeev Sharma, AnupamJhobta. Spectrum of perforation peritonitis in India – review of 504 consecutive cases. World J EmergSurg 2006;1:26
[9] Russell G Posteir, Ronald A Squires , Acute Abdomen, 18th Ed, Sabiston text

[10] book of Surgery Vol2, townsend Beauchamp Evers Mattox, Saunders Elseveir:
[11] 2009;1180.
[12] Silen W: Cope's Early Diagnosis of the Acute Abdomen, 21st ed. New York,
[13] Oxford University Press, 2005.
[14] Aijaz A. Memon, Afsar Ali Bhutto, GhulamShabirShaikh, et al, Spectrum of Diseases in Patients with Non-Traumatic Acute Abdomen, JLUMHS SEPTEMBER - DECEMBER 2008,180-183.
[15] Brewer BJ, Golden GT, Hitch DC, et al: Abdominal Pain : An analysis of 1,000 consecutive cases in a University Hospital Emergency Room. American Journal of Surgery 131:219- 223, 1976.
[16] IMC Macintyre "Perforated peptic ulcer'. Christopher Wastell, L.M.Nyhus (ed) Surgery of the Esophagus, Stomach and Small intestine. Little Brown and Company, London 5thEd Elsevier; 2010. p. 300

Tables

Table 1: Proportion of acute abdominal conditions

S.No	Diagnosis/Cause of Acute Abdomen	No of Cases	Mortality
1	Acute appendicitis	46	0
2	Perforated duodenal ulcer	20	2
3	Ileal perforation	15	3
4	Gastric perforation	6	0
5	Acute Intestinal Obstruction	12	2
6	Ruptured LIVER Abscess	1	0
	TOTAL	100	7

Table 2: Distribution of Symptamatology in all the study cases

Symptoms and signs	Number of cases	Percentage
Pain abdomen	44	88
Vomiting	39	78
Distension	33	66
Constipation	27	54
Tachycardia	40	80
Previous surgical scar	22	44
Tenderness	13	26
Rigidity	13	26
Mass	12	24
Visible peristalsis	30	60

Table 3: Frequency and Distribution of site of tenderness

Site of pain	Frequency	Percent
Diffuse	33	66.0
Right iliac fossa	5	10.0
Right iliac fossa, right lumbar	1	2.0
Epigastric	10	20
Right hypochondriac	1	2.0
Total	50	100

Table 4: Incidence of Hollow viscus perforation

Sl. No	Hollow Viscus Perforation	No. of Cases	%
1	Perforated duodenal ulcer	20	48.78
2	Ileal perforation	15	36.5
3	Gastric perforation	6	14.63
	TOTAL	41	100

Table 5: Causes of Intestinal Obstruction

S.NO	Cause of Intestinal Obstruction	No. of Cases	%
1	Obstructed Right Inguinal Hernia	5	41
2	Sigmoid Volvulus	1	8.3
3	Obstructed Epigastric Hernia	0	0
4	Obstructed Incisional Hernia	1	8.3
5	Intussusception	1	8.3
6	Postoperative Intestinal adhesions	4	33.33
	TOTAL	12	100