



Pediatric Acute Abdomen- A Descriptive Study

DR ALTHAF AHMED PILLAI

PG RESIDENT, DEPARTMENT OF GENERAL SURGERY FATHER MULLER MEDICAL COLLEGE, KANAKANADY MANGALORE, DK DISTRICT, KARNATAKA

ABSTRACT

Acute abdomen means the patient complains of acute abdominal symptoms that suggest a disease, which definitely or possibly threatens life and may or may not demand immediate operative interference. Although most children with acute abdominal pain have self limited condition the pain may herald a surgical or medical emergency. The most difficult challenge is making a timely diagnosis so that treatment can be initiated and morbidity preserved. The majority of cases of acute abdomen arise from the conditions of the gastrointestinal tract. As different conditions of the gastrointestinal tract present with similar clinical features, accurate diagnosis by clinical methods is often a very challenging task. This study endeavors to study the acute abdomen of atraumatic origin in children in the age group of 1- 15 years.

KEYWORDS

AIMS AND OBJECTIVES

- To study the incidence of various specific conditions presenting as acute abdomen in the children in the age group of 1-15 years.
- Various treatment modalities used to treat these conditions.

Materials and Methods

- STUDY DESIGN: Descriptive study.
- SAMPLE AND SAMPLING TECHNIQUE- Randomly selected hundred cases of acute abdomen will be studied with patients belonging to age group of one to fifteen years.
- Case selection done in the criteria of history, clinical examination, laboratory and radiological investigations.
- Soon after admission clinical data is recorded according to the proforma. The diagnosis mainly based on clinical examination and laboratory investigation and supported by radiological examination.
- The investigations done in the cases for study will be WBC count, CRP , blood urea , serum creatinine, ultrasound abdomen

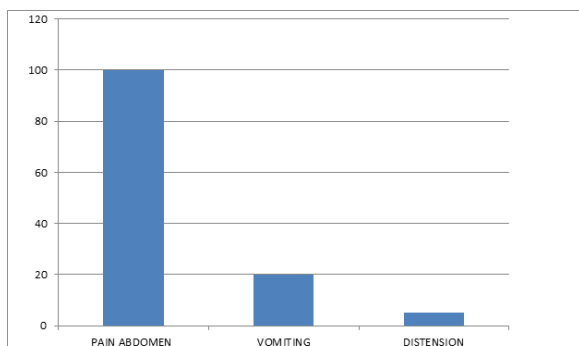
Inclusion Criteria

- All patients in age group 1-15 years presenting with pain abdomen.

Exclusion Criteria

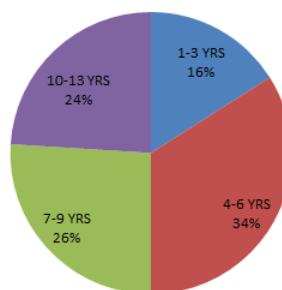
- Infants and patients above fifteen, symptoms with recurrent pain abdomen, traumatic pain abdomen.

RESULTS



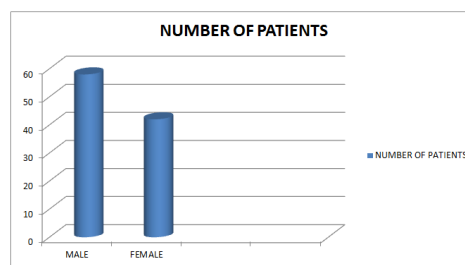
Graph 1: Frequency of the symptoms of presentation. most common presentation was pain abdomen.

AGE DISTRIBUTION



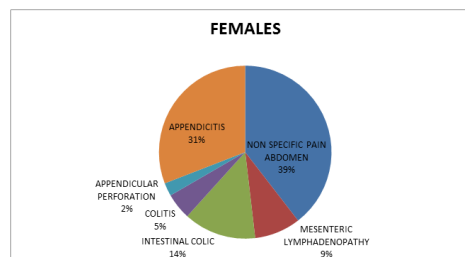
Graph 2-Acute abdomen was most common in the age group of 4-6 years.

NUMBER OF PATIENTS

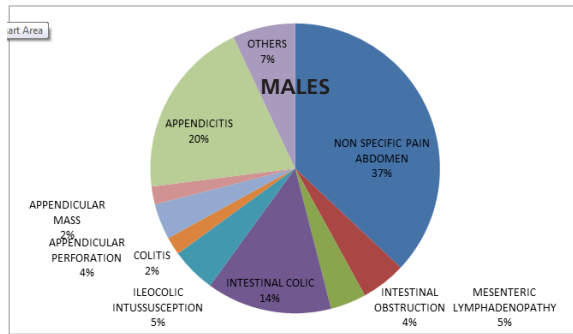


Graph 3-Gender distribution of acute abdomen; Acute abdomen was most commonly observed in males.

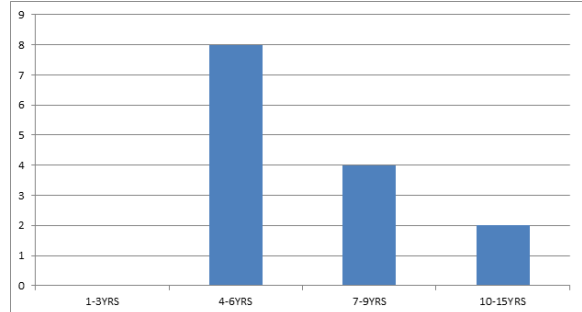
FEMALES



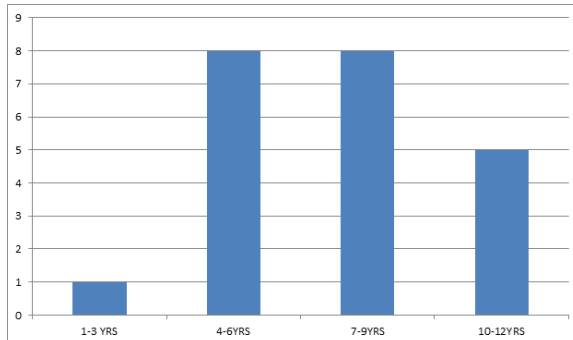
Graph 4-In females the most common diagnosis was NSAP, followed by



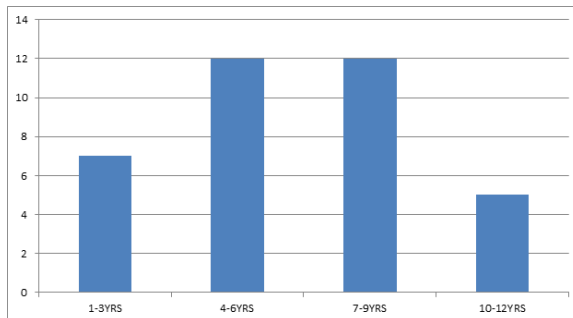
Graph 5-In males the commonest diagnosis was also NSAP.



Graph 9-Intestinal colic was observed with peak incidence in the age group of 4-6 years.

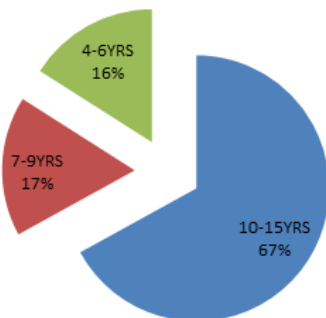


Graph 6-Appendicitis was observed most commonly in the age group of 4-9 years.



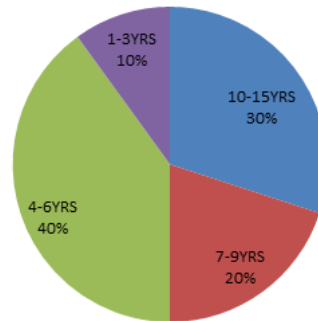
Graph 7-NSAP was observed most commonly in the age group of 4 – 9 years followed by occurrence in the age group of 1-3 years.

MESENTERIC LYMPHADENOPATHY



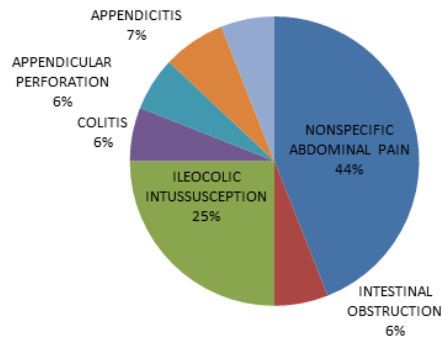
Graph 8-Mesenteric lymphadenopathy was most commonly observed in the age group of 10-15 years followed by occurrence in the age group of 7-9 years.

OTHERS

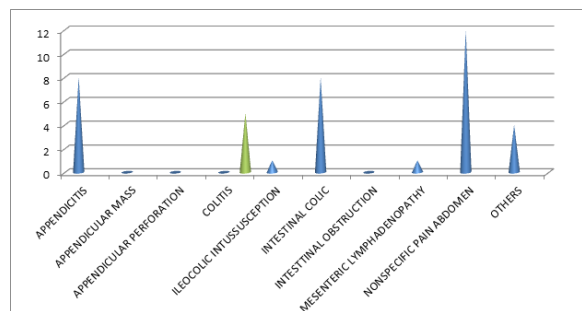


Graph 10-Age distribution of other conditions- left VUJ calculus, intestinal worms , renal colic, Appendicular mass

OTHERS 1-3YRS

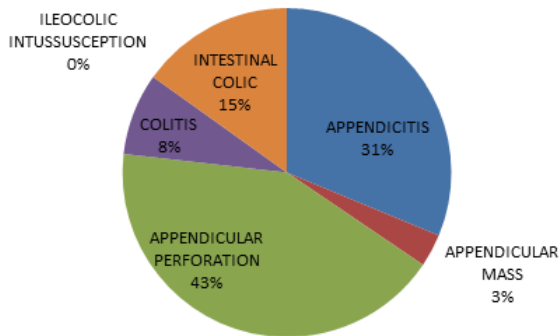


Graph 11-Commonest diagnosis was NSAP (44%), followed by intussusception (25%).

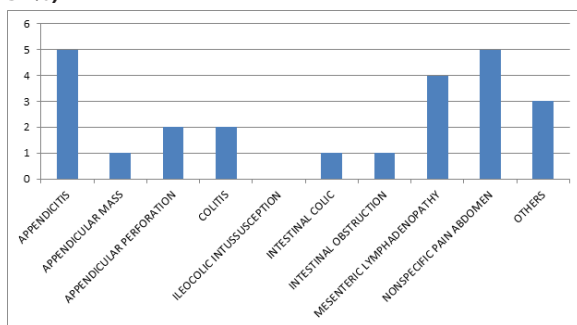


Graph 12-NSAP was the frequently observed condition followed by intestinal colic and appendicitis.

7-9 YRS

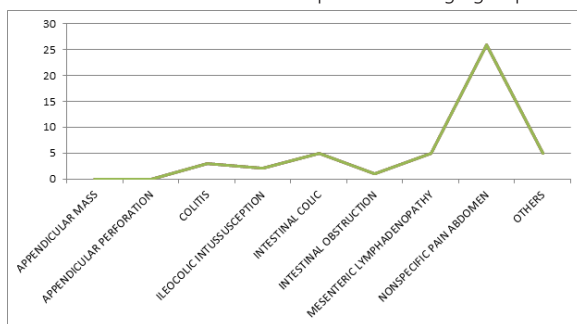


Graph 13-Appendicular perforation(43%) was commonly observed in this age group followed by appendicitis(31%).

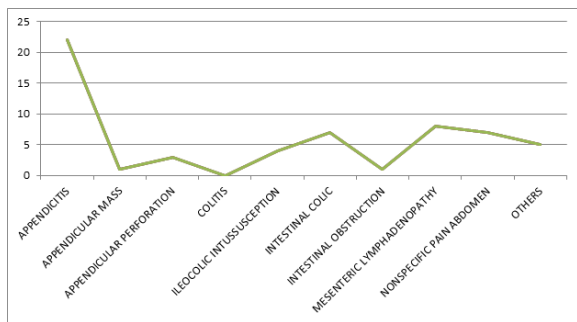


Graph 14-Appendicitis and NSAP were commonly observed.

There were no cases of intussusception in this age group.

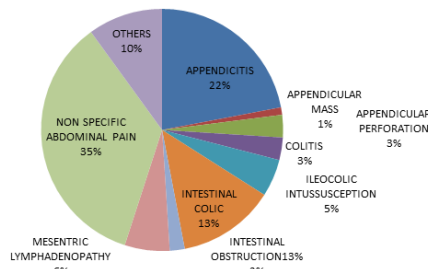


Graph 15-CRP was normal in most cases of NSAP.



Graph 16-Levels were elevated in most cases of appendicitis

DIAGNOSIS



Graph 17-The commonest condition found in our study was NSAP, followed by appendicitis, third intestinal colic.

DISCUSSION

- In the present study NSAP was found to be the most common diagnosis accounting 35%.
- This is consistent with the study done by Holland A, Gollow IL (1996) in which NSAP was the most frequent diagnosis and were treated without surgical intervention. [1]
- It was most commonly observed in the age group of 4-9 years accounting 42.2%. Males accounting 37% compared to females 33%. CRP , USG was done in all cases.
- In 27 patients CRP was normal. In 8 children it was elevated .
- USG was normal in all the patients diagnosed NSAP.
- This is consistent with the study done by Eriksson et al, in which study normal value for CRP and WBC count should be an indication to defer surgery. [2]
- All children were managed conservatively with analgesics. In our study acute appendicitis was the 2nd most common diagnosis accounting 22%,with a peak age incidence between 7-9years and 4- 6 years accounting 30.8%.
- This study is consistent with study done by Sandy Craig in which appendicitis is common in the age group of 6-10years.
- They discussed incidence of appendicitis in children gradually rises from birth, peaks in late teen years and gradually declines in the geriatric years.
- The mean age when appendicitis occurs in the pediatric population is 6-10years with reported rates of 50-80%.
- Lymphoid hyperplasia is observed more often among infants and adults and is responsible for the increased incidence of appendicitis in these age groups.
- Appendicitis was observed with increased incidence among females 25%,compared to 20% in males.
- This study is inconsistent with study done by J.A.H.Lee(1962) in which males had higher incidence of appendicitis compared to females. [3]
- CRP was elevated in all patients diagnosed appendicitis accounting 22%. This study is consistent with the study done by Eriksson et al. [2]
- USG was done in all patients . out of 22 patients 17 patients were diagnosed by USG as appendicitis carrying sensitivity of 77%. This is consistent with the study done by Sivit in which the sensitivity of ultrasound in diagnosing appendicitis ranging from 44% to 94%.All the patients diagnosed appendicitis were taken up for surgery . [4]
- Treated with appendicectomy, IV antibiotics , IV fluids and analgesics.
- Intestinal colic was the third common diagnosis.
- All children presented only with pain abdomen. No vomiting, abdomen distension.
- Routine investigations, CRP, USG abdomen were done. All were normal.
- Patients were treated conservatively.
- Non specific mesenteric lymphadenitis is another common diagnosis in children and from the lack of unanimity of literature.
- Mesenteric lymphadenopathy accounted 6% of the diagnosis of acute abdomen in children which was equally

common in both the sex.

- Gender wise females were most commonly diagnosed accounting 7%.
- This was more commonly observed in the age group of 10-15 years accounting 67% followed by occurrence between 7-9 years.
- This study is consistent with the study done by MacKeith and O'Neill (1951), in which mesenteric lymphadenitis was common in the series in the age group of 7-12 years.^[5]
- CRP was normal. Ultrasound showed mesenteric lymphadenopathy in all cases.
- This is consistent with study done by Vignault et al in 1990 in which USG was the investigation criteria to diagnose mesenteric lymphadenitis.^[6]
- All children were managed conservatively with IV antibiotics and analgesics.

Intussusception

- Commonly observed in the age group of 1-3 years and 1 case between 4-6 years. Males were most commonly affected accounting 60% compared to females.
- This study is closely consistent with the study done by Matsuo Takeuchi (2011) in which males affected 66% and the median age of diagnosis was 17 months and most of the cases were under 5 years of age.^[7]
- Ultrasound showed intussusception in all patients. Intestinal obstruction features were present in 4 patients which was revealed in Erect x ray abdomen.

Summary

- The leading cause of acute abdomen in this study was NSAP 35%, the second is appendicitis 22%, third is intestinal colic 13%, followed by mesenteric lymphadenopathy 6%, ileo colic intussusception 5%, appendicular perforation 3%, intestinal obstruction 2%, others together 10%.
- The highest incidence is found between 4 to 6 years followed by 7 to 9 years.
- The sex incidence being more common in males than females. Pain was the presenting complaint in all patients, second is vomiting presenting in around 25 patients and abdomen distension in 7 patients.

Laboratory investigations, Ultrasound abdomen done in all cases. Ultrasound was normal in 52 patients. USG showed appendicitis in 17 patients,

- Appendicular mass in 1 patient, appendicular perforation in 3 cases,
- Mesenteric lymphadenopathy in 6 cases, VUJ calculus in 1 patient.
- Intussusception and intestinal worms each was shown in 5

cases.

- Appendix was not visualized in 4 patients. Inflammatory changes were noted in 1 patient
- Erect x ray abdomen showed air fluid levels in 2 patients.
- F/S/O of intussusception in 2 patients
- Air under the diaphragm in 3 patients.
- Conservative management was done in 69 patients.
- Emergency surgery done in 31 patients depending on the etiology.
- The post operative period was monitored.

Conclusion

- In this study the leading cause of acute abdomen is Non-Specific Abdomen pain,
- Second is acute appendicitis,
- Third is intestinal colic followed by
- Mesenteric lymphadenopathy, intestinal obstruction, appendicular perforation.
- The highest incidence is between four to six years with male preponderance.
- The pain was the presenting complaint in all patients, vomiting was second most common symptom. Routine blood investigations, CRP was done in all patients.
- Serum electrolytes in selected patients.
- Ultrasound abdomen was done in all patients.
- Plain erect x- ray abdomen was done in selected patients
- Most patients were managed conservatively.
- Emergency surgery were done in surgery indicated patients.
- IV fluids, analgesics, and antibiotics used for conservative management.
- Appendectomy, laparotomy and proceed and URS were the procedures done as indicated.

REFERENCES

1. Holland A, Gollow J. Acute abdominal pain in children; An analysis of admissions over a 3 year period J Qual Clin Pract 1996 Sep; 16(3):151-5. | 2. . Eriksson S, Granstrom L, Carlstrom A. The diagnostic value of repetitive | preoperative analyses of C-reactive protein and total leucocyte count in patients with suspected acute appendicitis. Scand J Gastroenterol 1994; 29: 1145-9. | 3. . Lee J.A.H . The influence of age and sex on appendicitis in children and young adults. Gut .1962 March ;3(1): 80-84. | 4. Sivit C.J. Diagnosis of acute appendicitis in children: spectrum of sonographic | findings. AJR Am J Roentgenol 1993;161:147- 52. | 5. MacKeith, R., and O'Neill, D. (1951). Recurrent abdominal pain in | children. Lancet, 2, 278. | 6. Vignault F, Filiatrault D, Brandt ML, et al. Acute appendicitis in children: | evaluation with US. Radiology 1990; 176: 501. | 7. Takeuchi M, Osamura T, Yasunaga H, Horiguchi H, Hashimoto H, Matsuda S. | Intussusception among Japanese children: an epidemiologic study using | administrative data base. BMC Pediatr 2012. Mar 22; 12:36. |