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General Surgery

A COMPREHENSIVE STUDY TO DETERMINE INCIDENCE, CAUSES, DIAGNOSIS AND MANAGEMENT OF ACUTE INTESTINAL OBSTRUCTION

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ABSTRACT **Introduction:** Acute intestinal obstruction is an enigma with its versatile presentation. Given the different ways that AIO might present and the variety of current management techniques, it is an entity yet to be understood. With intestinal obstruction, timing is key, and any delay in diagnosis or treatment raises the fatality rate. **Aim Of The Study**: To determine incidence, causes and clinical presentation of AIO. **Materials And Methods**: This is a Prospective Analytical Study of 50 patients with a diagnosis of AIO admitted in Government General Hospital, Anantapur. The details of symptoms at presentation, the diagnosis entertained, investigations reports, type of surgery and outcome have all been recorded and tabulated for reference and comparison. **Results-** Abdominal pain is the most common presenting symptom (100%) followed by vomiting (94%) and distention of abdomen (94%). The most common sign was tachycardia (96%), tenderness (96%) of the cases, followed by guarding (84 %) & absent bowel sounds which was present in (82%) of patients. Of the 50 cases the commonest cause of AIO is adhesions/bands (18 cases). Hernias were present in 16 cases, and is the second commonest cause. **Conclusion-** Recent advances in imaging modalities enable surgeons in distinguishing between complete and partial bowel obstruction. But, little progress has been made in detecting early reversible bowel strangulation.

KEYWORDS : AIO, Obstruction, pain abdomen, adhesions, hernia, bowel ischemia.

INTRODUCTION

Acute intestinal obstruction is an enigma with its versatile presentation, is the most frequently encountered emergency in abdominal surgery[1][2]. Given the various different ways that AIO might present and the variety of current management techniques, it is an entity yet to be understood. It consistently tests the surgeon's ability to make accurate diagnoses and use good judgement for timely definitive intervention. Since the time of onset of intestinal obstruction, pathophysiological changes are in a dynamic state. Timing is the key and any delay in diagnosis or treatment rises the fatality rate[3]. The surgeon should be familiar with the common modes of presentation given the wide spectrum of illnesses known to induce obstruction.

This study is done to determine and analyse the incidence, clinical presentation, treatment, and prognosis of patients with AIO, as well as the incidence and triggers of ischaemia and intestinal necrosis.[4][5]

Death due to AIO is decreasing with better understanding of pathophysiology, improvement in diagnostic techniques, fluid and electrolyte management. Early diagnosis of obstruction and timely operative management[6], proper technique during surgery and intense postoperative treatment carries a grateful result.

AIMS OF THE STUDY:

1. To determine incidence and various causes of bowel obstruction and their clinical presentation.
2. To assess the corelation between symptoms and need for surgical intervention.
3. To identify alarming signs that indicate the need for an early operative intervention.

MATERIALS AND METHODS:

This is a Prospective Analytical Study of 50 patients with AIO admitted in Government General Hospital, Anantapur. All patients aged 14 years and above are included in this study. Patients with history of previous episodes of obstructive features, and those with history of previous surgeries related to GIT are included on this study. Paediatric age group and Patients who were treated conservatively & relieved of obstruction were excluded. Patients with IO due to obstructed inguinal hernia with no evidence of strangulation that reduce spontaneously were also excluded. From the time of presentation the cases were followed up till the time of discharge / death. X-ray abdomen erect was routinely taken for all patients. The details of symptoms at presentation, the diagnostic investigations, type of surgery and outcome have all been recorded.

The final outcome has been sub grouped based on the degree of incapacitation to death. The observations were compared with the current literature on acute intestinal obstruction and conclusions were drawn.

RESULTS

In the study of AIO which was carried out in the Government General Hospital, Anantapur, 50 cases were studied based on clinical evaluation and radiographic evidence.

Age And Sex Incidence-

As far as age distribution is concerned the age range was 14 – 72 years, most common occurrence between 30 to 60 years.

Clinical Symptomatology-

Abdominal pain is the most common presenting symptom (100%) followed by vomiting (94%) and distention of abdomen (94%). The most common sign was tachycardia (96%), tenderness which was present in (96%) of the cases, followed by guarding (84 %) & absent bowel sounds which was present in (82%) of patients.

Signs	No Of Patients	Percentage
Tachycardia	48	96%
Tenderness	48	96%
Guarding & Rigidity	42	84%
Absent Bowel Sounds	41	82%

Symptoms	Percentage	No Of Patients
Abdominal Pain	100.00%	50
Vomiting	94.00%	47
Abdominal Distension	94.00%	47
Constipation	90%	45

Disease Spectrum-

The commonest cause of AIO is adhesions/bands (18 cases). Hernias were present in 16 cases, and is the second commonest cause.

Investigational Aids-

Plain X-Ray abdomen was taken for all the 50 cases of intestinal obstruction. The most common finding in the X-Ray was multiple fluid levels (>3) , dilatation of bowel loops proximal to intestinal obstruction was seen in some cases, one case had coffee bean appearance. X-Rays were inconclusive in some cases. Ultrasound abdomen was preformed, it revealed dilated bowel loops, free fluid,

and in majority of the patients the results were inconclusive. The ultrasound had little role to play in the diagnosis of intestinal obstruction.

Surgical Procedure adopted-

Exploratory Laparotomy & Adhesiolysis/band release was the most common surgical procedure performed accounting for 18 cases followed by hernia repair 16 cases. Resection and anastamosis was done in 6 cases, colostomy in 5 cases, ileostomy in 4 cases and other procedures were performed in the remaining patients.

Procedure Adopted	No Of Patients
Adhesiolysis/Band Release	18
Hernia Repair	16
Resection Anastamosis	6
Colostomy	5
Ileostomy	4
Hemicolectomy	1

The Surgical Outcome-

Majority of patients had an uneventful recovery. Prognosis depends on the time of presentation, time of surgical intervention, associated comorbidities, most common being Diabetes and COPD. Most common post-operative complications that were noted were Surgical site infections, Burst abdomen, Anastamotic breakdown.

Complications	No Of Patients	Percentage
Fever	17	34%
Wound Complications	15	30%
Fistula	1	2%
Death	3	6%

The earlier the intervention, the better the outcome. Three patients expired in the postoperative period due to the pre-exisiting comorbidities(COPD).

DISCUSSION-

Intestinal obstruction continues to be common emergency which surgeons have to face. The mortality has reduced significantly by instituting the treatment at the earliest period nowadays. In this study, Intestinal obstruction although occurs in all age groups. This study showed highest incidence in the age group 30 - 60 years and which is comparable with the studies carried out by Adhikari S et al[7] and Cole GJ et al[8] . According to Brewer et al in 1976 analyzed 1000 consecutive abdominal surgeries and reported an incidence of 2.5%[9]. As study done by Gilroy P et al[10] in 1975, 3.2% reported an incidence. About 3.2 million cases of intestinal obstruction occurred in 2015 which resulted in 2,64,000 deaths[11][12] . The common clinical features of intestinal obstruction are abdominal pain, vomiting, constipation and abdominal distension. In the study Duron JJ et al[13] found that adhesions contributed for intestinal obstruction upto 25.5% and Ti et al[14] reported that postoperative adhesions and bands contributed upto 23.8% which is almost similar to this study. Fuzan et al[15] study found that 42.2% patients the cause for intestinal obstruction was adhesions due to previous operations. In this study maximum presenting symptoms were abdomen pain (100%) followed by vomiting (94%), distension of abdomen (94%) and constipation (90%) which is least to study of Asbun et al that shows in retrospective analysis of 105 cases of small bowel obstruction found that incidence of pain abdomen 82%, vomiting 88%, were commoner than constipation (28%) and distention of abdomen (56%)[16] .

CONCLUSION-

In conclusion, most of the recent advances in the management of bowel obstruction consist of developments in the imaging modalities available to assist in the diagnosis itself, particularly with regard to the distinction between partial and complete obstruction. Unfortunately, little progress has been made to enable physicians to detect early reversible strangulation. Because of the inability to detect reversible ischemia, there is a substantial risk of progression to irreversible ischemia when surgery is delayed for an extended period of time, especially in the setting of suspected complete obstruction. It is encouraging, that some advances have been made in understanding the patho-physiology and prevention of adhesion formation. Research efforts in the future should continue to focus on these issues as well as on the development of methods to better recognize early signs of strangulation.

Literature Review

1.Acute intestinal obstruction in adults in “Kumasi Ghana” ohene Yeboah Adippah. E, Gyasi, Sarpong K. Department of Surgery, Komfo Anokye Teaching Hospital, Kwame, Kumasi, Ghana.

They conducted a prospective study, between 1998-2003 of 652 cases of intestinal obstruction of which 412 (63.2%) were due to strangulated external hernias and 176 (27.2%) were due to post operative adhesions which is comparable to our study.

2.Hernias are the most common cause of strangulation in patient with small bowel obstruction. Thedioha.Y, Alani A, Modak P, Chong P, O'Dwyer PJ, University of department of surgery western infirmary Dumbarton road, GLASGOW.

Hernias remain the most frequent cause of strangulation in patients presenting with intestinal obstruction.

This study is comparable with our study, with a p-value of 0.05%

REFERENCES

1. Mucha P Jr. Small intestinal obstruction. SurgClin North Am, 1987; 67: 597-620.
2. Miller G, Boman J, Shrier I, Gordon PH. Natural history of patients with adhesive small bowel obstruction. Br J Surg., 2000; 87: 1240-7.
3. Scott G Houghton, Antonio Ramos De la Medina, Michael G Sarr. Bowel obstruction. In: Michael J Zinner, Stanley W Ashley, eds. Maingot's Abdominal operations. 11th ed. New York: McGraw-Hill Medical; 2007:479-505
4. Richards WO, Williams LF Jr. Obstruction of the large and small intestine. SurgClin North Am., 1988; 68: 355-76.
5. Renzulli P, Krahenbuhl L, Sadowski C, al-Adili F, Maurer CA, Buchler MW. Modern diagnostic strategy in ileus. ZentralblChir., 1998; 123: 1334-9.
6. Charles V. Mann. Intestinal Obstruction, Charles V. Mann, R.C.G. Russell (eds): Bailey and Loves short practice of surgery, 21st edition, Hongkong Chapman and Hall, 1994, p. 1175.
7. Adhikari S, Hossein M, Das A, Mitra N, Ray U. Etiology and outcome of acute intestinal obstruction: A review of 367 patients in Eastern India. Saudi J Gastroenterol. 2010;16(4):285.
8. Cole G. A review of 436 cases of intestinal obstruction in Ibadan. Gut. 1965;6(2):151-162
9. Richard JB, Gerald TG, David CH, Leslie ER, Wangensteen SL. Abdominal pain. Am J Surg 1976; 131: 219 - 223
10. Gilroy P. Bevan. Adhesive obstruction. Ann Roy Call Surg Eng 1983; 164-17061. Sufian S, Matsumoto T. Intestinal obstruction. Am J Surg 1975; 130: PP 9 - 14
11. Feigin V. Global, regional, and national life expectancy, all-cause mortality, and cause-specific mortality for 249 causes of death, 1980-2015: a systematic analysis for the global burden of disease study 2015. The Lancet. 2016;388(10053):1459- 544.
12. Vos T, Allen C, Arora M, Barber RM, Bhutta ZA, Brown A, et al. Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990-2015: a systematic analysis for the Global burden of disease study 2015. The Lancet. 2016;388(10053):1545.
13. Duron JJ, Silva NJ, Montcel ST, Berger A, Muscari F, Hennet H, et al. Adhesive postoperative small bowel obstruction: incidence and risk factors of recurrence after surgical treatment: a multicenter prospective study. Ann Surg. 2006;244(5):750-7.
14. Ti TK, Young NK. The pattern of intestinal obstruction in Malaysia. BJS. 1976;63:963-5.
15. Fuzan M, Kaymake E, Harmancioglu O, Astarcioglu K. Principal causes of mechanical bowel obstruction in surgically treated adults in Western Turkey. BJS. 1991;78:202-03.
16. Asbun HJ, Perpinello C, Halasz NA. Small bowel Obstruction and its management. Int Surg. 1989;74:2- 27.