Research Article

A Study of Acute Abdomen Needing an Emergency Laparotomy in a Tertiary Hospital in Central India

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Abstract

Background: acute abdomen and exploratory laparotomy go hand in hand in any surgical emergency duty. We conducted this study to know the causes as well as the post operative complications of the laparotomies in a tertiary hospital in central India. **Materials & Methods:** Our study was a hospital based observational study in which all surgical emergency cases which were operated upon by emergency midline laparotomy for acute abdomen or trauma at a tertiary medical hospital in central India were included in the study. **Results:** A total of 188 consecutive cases of patients presenting with abdominal pain in surgery emergency who had to undergo an emergency laparotomy were included in the study. Out of them, 155 were patients of only acute abdomen while 33 had a history of trauma. Most of the cases were in 40 years–60 years age group (30.4%), closely followed by 60 years–80 years age group (28.9%), while least cases were below 20 years (7.2%). Out of the 188 cases, 142 were males and 46 were females. Among those with history of trauma, about 65% were blunt abdominal trauma and the rest 35% were penetrating type trauma.

Keywords: Acute abdomen; Laparotomy; Surgery

Introduction

Surgical emergency and laparotomies always go hand in hand. [1] The indication for laparotomy may be either traumatic or acute abdomen. [2] Most of the time, it is done as a life-saving procedure. It is very essential that the decision of conducting a laparotomy is made keeping the best interest of the patient in mind and acting judiciously.

We conducted this study to understand the common causes of acute abdomen presenting as a surgical emergency in a tertiary hospital needing a laparotomy. Few of the causes are intestinal obstruction, perforation of hollow viscous or any visceral organ injury, etc. [2,3] Many factors are needed to be kept in the mind while conducting these emergency laparotomies as any delay or neglect is displaying highest surgical skill or mishap in anaesthesia can prove to detrimental to the patient. We conducted this study to know the causes as well as the post operative complications of the laparotomies in a tertiary hospital in central India.

Materials and Methods

Our study was a hospital based observational study in which all surgical emergency cases which were operated upon by emergency midline laparotomy for acute abdomen or trauma at a tertiary medical hospital in central India were included in the study. Elective laparotomies were excluded. It was a record based study [Tables 1-3].

Results

A total of 188 consecutive cases of patients presenting with abdominal pain in surgery emergency who had to undergo an emergency laparotomy were included in the study. Out of them, 155 were patients of only acute abdomen while 33 had a history

Table 1: Showing patient characteristics.

Characteristic	Number	Percentage
Acute abdomen	155	82.44
History of trauma	33	17.56
Age group		
<20	14	7.4
20-40	25	13.3
40-60	95	50.5
60-80	54	28.7
Gender		
Males	142	75.5
Females	46	24.5

Table 2: Showing etiology characteristics.

Characteristic	Number	Percentage
Type of trauma		
Blunt	21	63.6
Penetrating	12	36.4
Free gas under diaphragm on X ray	75	40
USG findings (N=101)		
Free fluid levels	26	26
Intestinal obstruction	15	15
Most common cause of acute abdomen		
Duodenal perforation	42	25

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Table 3: Showing outcome characteristics.

Characteristic	Number	Percentage
Post-operative complications		
Yes	86	45.74
No	102	54.26
Outcome		
Death	22	11.7
Recovered and discharged	166	88.3

of trauma. Most of the cases were in 40 years-60 years age group (50.5%), closely followed by 60 years-80 years age group (28.7%), while least cases were below 20 years (7.44%). Out of the 188 cases, 142 were males and 46 were females. Among those with history of trauma, about 65% were blunt abdominal trauma and the rest 35% were penetrating type trauma. About 20% patients had a history of previous laparotomy.

About 40% patientsshowed free gas under the diaphragm on X ray PA chest standing view. Sonography was done in 54% of the cases and 26% of them showed features of intestinal obstruction while 15% had free fluid. Laparotomy was done in all cases out of which about 32% were done within 8 to 24 hours of entry to the casualty.

The postoperative diagnosis showed thatthe most common cause among them was duodenal perforation, which was seen in 42 (25%) patients. About 54.5% of patients had no complications post operatively while wound infection was the most common (25%) among the complications. Talking of the outcome about 11.7% of the patients died while 88.3% recovered.

Discussion

In any type of acute abdomen, there may always arise the need for a laparotomy and hence surgical emergency and laparotomy go hand in hand. Over the ages there has been a dramatic change in the area of surgery. Sushrut was the father of surgery as per our ancient Indian texts so taking that thing into consideration many people have started thinking that our ancient medicine can surpass modern medicine but it's actually not like that. People are alive today only because of the modern medicine otherwise in ancient times people had many children as many often died young by simple easily preventable infections. The local herbs and indigenous medicines were always there but it could not help in curing the patients of the simple infections hence there was a need of modern medicine.

Likewise after vesalius the father of anatomy dissected the human body and found out the correct anatomy, the world actually knew how organs work and how removal of a bad organ can save the life of the patient. Thus the branch of surgery erupted which was mainly dealing with removal of bad or infected parts out of the body to save the rest of the body.

It's a very common scene in any casualty to see patients bringing a patient with acute pain in abdomen lying absolutely still due to rigidity and the impending doom in the eyes of the relatives due to constant nausea, vomiting and severe pain in the abdomen. Most of them go to local doctor who give plain analgesics or anti spasmodics but the pain is so severe that it doesn't subside and needs an intervention and hence the patient is carried to the casualty as a case of surgical emergency. Fluids, antibiotics, antacids, anti emetics are started and patient is kept nil by mouth. Sometimes the surgeon orders an emergency radiological investigation while sometimes he could know the diagnosis just by clinical examination but in the era of evidence based medicine its always good to get the tests done as often as required to prevent later negligence law suits.

Laparotomies and acute abdomen as surgical emergencies go hand in hand. Almost all serious cases need a laparotomy. Be it acute abdomen or trauma, laparotomy is indicated for both. Due to radiological investigations like x-ray and USG as well as CT, the surgeons get an idea about the seriousness of the case and hence can plan a conservative management too instead of an operation. In some cases however exploratory laparotomies need to be performed as the exact diagnosis will not be certain before surgery. [4]

The acute abdomen is usually used to describe surgical, medical or gynecological conditions with abdominal pain whose severity may range from trivial to life threatening, which require hospital admission, investigation, and treatment. [5] Almost 50% of emergency general surgical admissions are of acute abdomen with the common conditions being acute appendicitis, gastrointestinal perforation, acute cholecystitis, acute pancreatitis, peptic ulcer disease, small and large bowel obstruction, gynecological disorders, malignant diseases, etc. [6]

In our study a total of 188 cases were studied and all of them had to undergo an emergency laparotomy. Out of them, 155 were patients of only acute abdomen while 33 had a history of trauma. Most of the cases were in 40 years-60 years age group (30.4%), closely followed by 60 years-80 years age group (28.9%), while least cases were below 20 years (7.2%). Out of the 188 cases, 142 were males and 46 were females.

Among those with history of trauma, about 65% were blunt abdominal trauma and the rest 35% were penetrating type trauma.

About 20% patients had a history of previous laparotomy. About 40% patients showed free gas under the diaphragm on X ray PA chest standing view. Sonography was done in 54% of the cases and 26% of them showed features of intestinal obstruction while 15% had free fluid. Laparotomy was done in all cases out of which about 32% were done within 8 hours-24 hours of entry to the casualty.

The postoperative diagnosis showed that the most common cause among them was duodenal perforation, which was seen in 42 (25%) patients.

About 54.5% of patients had no complications post operatively while wound infection was the most common. Talking of the outcome about 12% of the patients died while 88% recovered. Raja et al. presented a case of atrial fibrillation with acute abdomen in an elderly patient. [7] A number of related studies were published. [8-11] Studies on abdominal surgeries by Bhattacharjee et al. [12], Gupta et al. [13], Rallabhandi et al. [14] and Wanjari et al. [15] were reviewed.

Thus this study gives an insight about the usual picture of the cases of acute abdomen presenting at a tertiary hospital and the

common causes and the outcome of the surgery *i.e.* laparotomy in them. The gastric injuries and the trauma often cause morbidity and mortality as it depends on the extent of trauma, site of trauma, blood loss, hypovolemic shock, other associated injuries, any co-morbidities in the patient as well as age of the patient. In our study majority of the outcomes of mortality happened in the older aged people which show that age plays an important role in determining the outcome of the operation.

Conclusion

Our study concluded that majority of laparotomies for acute abdomen were done within 24 hours and Duodenal perforation was the most common cause and half of the patients have no post-operative complications.

References

1. Deaver JB. When and when not to open the abdomen in acute surgical conditions. Ann Surg. 1929;89:340-353.
2. Rintoual R. Farquharson's textbook of operative surgery. London: Churchill Livingstone. 1986.
3. Lund H, Kofoed SC, Hillingso JG, Falck-Larsen C, Svendsen LB. High mortality after emergency room laparotomy in haemodynamically unstable trauma patients. Dan Med Bull. 2011;58:A4275.
4. Farahmand N, Sirlin CB, Brown MA, Shragg GP, Fortlage D, Hoyt DB, et al. Hypotensive patients with blunt abdominal trauma: Performance of screening US. Radiology. 2005;235:436-443.
5. Gordon PH, Nivatvongs S, Mulholland MW. Principles and practice of surgery for the colon, rectum, and anus. Shock. 1999;12:328.
6. Nathens AB, Rotstein OD. Therapeutic options in peritonitis. Surg Clin North Am. 1994;74:677-692.
7. Raja, Karthik K, Shilpa G, Sharad BS, Nazli K, Yash G. Atrial fibrillation presenting with acute abdomen in an elderly patient: A case report. J Evolution Med Dent Sci. 2020;9:3019-3021.
8. Shrey, Shruti, Amol S,Basant S, Pratibha N, Ayushma. A comparative study of intraperitoneal ropivacaine and bupivacaine for postoperative analgesia in laparoscopic cholecystectomy. J Evolution Med Dent Sci.2020;9:200-205.
9. Kailuke, Reshama M, Bhavitha V, Sanjot SN. Laparoscopic appendicectomy in a 26-weeks parturient. J Evolution Med Dent Sci. 2020;9:1964-1966.
10. Ladke, Amruta B, Pandit AP, Vinod RB. Parasitic fibroid: Complication of post-laparoscopic morcellation. J Obstet Gynaecol India. 2020;71:207-209.
11. Walke, Monali, Sheetal S. Assess the risk of constipation among patients undergoing abdominal surgery. Int J Mod Agric. 2020;9:120-124.
12. Bhattacharjee, Anurag A, Harshal R, Yashwant L. Role of drains in intra-abdominal surgeries. J Evolution Med Dent Sci. 2020;9:3806-3810
13. Gupta, Deepak P, Vijay C. Comparative study of ondansetron and palonosetron for prevention of nausea and vomiting following upper abdominal surgeries under general anaesthesia: A randomised control trial. J Clin Diagnostic Res.2020;14:1-4.
14. Rallabhandi, Saranya, Vivek C, Amol S, Neeta V, Anjali M, et al. Evaluation of transdermal fentanyl patch as pre-emptive analgesia for improvement of postoperative pain relief in patients undergoing major abdominal surgeries under general anaesthesia. J Evolution Med Dent Sci. 2020;9:3556-3559.
15. Wanjari, Anil K, Arjun JD, Parimal ST, Yashwant L. Midgutmal rotation with chronic abdominal pain. N Am J Med Sci. 2012; 4:196-198.