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A STUDY OF THE CLINICOPATHOLOGICAL EVALUATION, MANAGEMENT AND OUTCOME OF GASTRO-INTESTINAL PERFORMATIONS

General Surgery

Dr. Jatin K. Punia Senior Resident, Department of Gen. Surgery, R.D. Gardi Medical College and CRGH, Ujjain, M.P.

Dr. Swapnil Wadhwa Junior Resident, Department of Gen. Surgery, R.D. Gardi Medical College and CRGH, Ujjain, M.P.

Dr. P.R. Bayes Professor & HOD Departments of Gen.Surgery, R.D. Gardi Medical College and CRGH, Ujjain, M.P.

ABSTRACT

The most common cause of acute abdominal pain in the gastrointestinal system relates to an inflammatory process in stomach, small and large intestines and the pancreatic –biliary system.

The symptoms are usually non-specific and are influenced by age of the patient, medication and co-existing diseases. For instance, intake of corticosteroids in an elderly individual with a perforation may end up being a Damocle's Sword over a surgeon just into his practice.

The reaction of the closed peritoneal cavity cleanly divided into various stages. Gastrointestinal perforation is the third most common cause for laparotomy as an emergency. With the advances in treatment of acid peptic disease, the incidence of peptic ulcer perforation decrease. The advent of laparoscopy and endoscopy has played a dramatic role both in diagnosis and management of gastro-intestinal perforation.

KEYWORDS

Gastrointestinal perforation, laparotomy, laparoscopy and endoscopy

INTRODUCTION

Perforation peritonitis is the most common surgical emergency faced by the surgeons, now days. Gastrointestinal perforation is one of the most common causes for explorative laparotomy as an emergency.

Peritonitis is defined as inflammation of all or a little portion of parietal and visceral peritoneum. Peritoneum is the largest smooth membrane structure of human body, whose surface area is about 2mtr^{2}[1].

Gastrointestinal perforation occur when an opening is formed through stomach, small or large intestine.

The symptoms are influenced by age, medications and co-morbidity of patient. In majority of the cases, patient usually present late to hospital because of ignorance, self treatment or by vaids/hakeems and when sign and symptoms progress suddenly then they come with well established peritonitis and faecal contamination with septicaemia.

Peritonitis has typical sign and symptoms, so it is not so difficult to establish diagnosis by examination, USG abdomen and X-Ray chest & abdomen. Peritonitis is a life threatening condition and the chances of recovery and improvement totally depends on early diagnosis, resuscitation and surgical intervention.

After intensive review of the literature related to gastrointestinal perforation one can conclude that time between presentation of symptoms and initiation of medical management directly affects the prognosis.

Now days, introduction of endoscopy& laparoscopy played a dramatic role in diagnosis and management.

Whatever the site of perforation or delay in presentation, perforation peritonitis has caused the surgeons to spend nights on sleepless pillows.

LITERATURE REVIEW

HISTORY[2]

Peritonitis is defined as inflammation of peritoneal cavity in which peritoneal fluid get increase in volume in presence of transudate that are rich in fibrin and polymorphs.

Perforation got three stages, stage of irritation of peritoneum (Primary), Stage of delusion or reaction (Secondary), Stage of Bacterial Peritonitis and finally Stage of Peritonitis.

Investigations include blood counts, x-ray and sonography or CT was done in suspected case of sub-acute or chronic perforation.

Procedure like simple closure with omentopexy, gastroenterostomy with or without vagotomy, resection & anastomosis with or without ileostomy or colostomy are some of the treatment options

In 3200 BC, perforation peritonitis with septicaemia was usually treated with application of warm oil with starvation and mummies are the excellent example regarding failure of this therapy.

Rawlinson (1724), was first to record sign and symptoms of gastric ulcer that perforates.

Dean (1884) was first surgeon to perform closure of perforated duodenal ulcer.

McKenzie (1888), perform four laparotomy for closure of perforation but was able to identified and repair in only one patient.

Travers and Elliotson present their thesis regarding perforation of gastro-duodenal ulcers in 19th century.

Standard procedures for closure of various perforation and peritoneal lavage with warm saline were introduced by Howard, Page and Dickenson Bennet in 1890.

Taylor used vagotomy introduced by Dragstedt with closure of perforation. Other surgeons used this technique with caution due to risk of mediastinitis and peritonitis.[3]

As H2 blockers and proton pump inhibitor are introduced, the incidence rate of gastro-duodenal or intestinal perforations decreases.

MATERIAL AND METHODS

This entitled **"A STUDY OF THE CLINICOPATHOLOGICAL EVALUATION, MANAGEMENT AND OUTCOME OF GASTRO-INTESTINAL PERFORATIONS"** was carried out in Department of Surgery of our institution after the approval of ethics committee. This study was done over a period of 1 year from August 2015 to August 2016 on 90 patients admitted with features of perforation using purposive sampling technique. Monitoring of data and certification was duly done by guide.

Patient was recorded in study after explaining the procedure and purpose of study in their mother tongue. A well informed written consent was taken before including them in study.

INCLUSION CRITERIA

- Perforation confirmed by radiographic imaging.
- Willing for surgery.

- Patient explained about the purpose and procedure of research.
- Patients giving written and informed consent for surgery and inclusion in study.

EXCLUSION CRITERIA
- Patient not willing for operation.
- Previously operated for perforations.
- Not giving consent.

METHOD OF COLLECTION DATA COLLECTION
Patient selection and surgical procedure is done by guide, researcher record the observation and collect the relevant data in pre-tested Performa after taking proper consent.

RESULT AND ANALYSIS
This study was done on data obtained from 90 patients that were admitted, diagnosed and treated for perforation peritonitis. There was a male preponderance in comparison to females. Majority of the patients presents in first three days. 46 (51.1%) patients had common epigastric pain. Majority of the patients were having peptic gastric perforation 41 (45.6%), followed by peptic duodenal perforation. Wound infection was seen in 36 (40%) patients followed by electrolyte imbalance. The mean time of stay is 9.70 ± 4.66 days.

DISCUSSION
The patient in this study was admitted and treated in Department of Surgery over a period of 1 year presenting with perforation.

AGE DISTRIBUTION
The younger patient in our study is of 8 years and the elder is of 80 years. Majority of the perforation is seen in female age group is from 20-29 years and in male age group is 30-39 years.

Tripathi et al[4] shows majority of 41.25% between 21-40 years and according to **Desa et al**[5]the mean age was 31.5 years.
According to **Chakrabarti et al**[6] the mean age was 36.6 ± 14.8 years.

SEX DISTRIBUTION
77.8% (70) of the patients were male in our study. According to **Desa et al**[5] 82.6% was male.

Tripathi et al[4] shows 72.5% of male and **Kachroo et al**[7] shows equal number of male and female.

Chakrabarti et al[6] shows that 81% were male.

DAYS OF PRESENTATION
In our study 33 (36.7%) patients was presented at 2nd day. Majority of the patients presented on 1to 4 days.

According to **Kachroo et al**[7] mean time was 4 days and 60% after 24 hours according to **Chakrabarti et al**[6]

SIGN AND SYMPTOMS
In our study pain was seen in all 90 (100%) patients. Same was seen by **Kachroo et al**[7] and **Chakrabarti et al**[6]. **Desa et al**[5]shows pain was present in 86.96%. Guarding and rigidity was the most common complaint that was seen in 83 (92.2%) patients and same was recorded by **Kachroo et al**[7] , **Chakrabarti et al**[6] and **Desa et al**[5].

Abdominal distension was presented in 81 (90%) patients due to peritonitis and paralytic ileus. **Desa et al**[13] found distention in 52.7% & 37% by **Chakrabarti et al**[6].

In our study 29 (32.2%) cases present with fever and 52% by **Chakrabarti et al**[6]. Bowel disturbance was recorded in 78 patients. 75 (83.3%) patient presented with constipation. **Desa et al**[5] found bowel disturbance in 30.43% and **Chakrabarti et al**[6] in 27%.

In our study vomiting was found in 65 (72.2%) patients as it was 53.42% in the study of **Desa et al**.[5]and 59% in **Chakrabarti et al**[6].

Liver dullness was obliteration in 59 patient in this study. In series of **Desa et al**[5] it was 50.93% and 34% in **Chakrabarti et al**[6].

Bowel sounds was completely absent in 85 (94.4%) patients but in series of **Desa et al**[5] it was 51.5%, 44% according to study by **Kachroo et al**[7] and 55% in series of **Chakrabarti et al**[6]

INVESTIGATION
57(63.3%) patients had altered hemoglobin. **Kachroo et al**[7]reports that majority of cases had low hemoglobin. 30% in study done by **S Chakrabarti et al,**[6].

Total leucocyte count was also altered in 49 (54.4%) cases. Widal test was present in 7 (7.7%) cases.

RADIOLOGICAL INVESTIGATION
In our study x-ray of abdomen in erect position shows Gas under diaphragm is seen in 85 (94.4%) cases, **Desa et al**[5] found gas under diaphragm in 72.72%. **Kachroo et al**[7] reports gas under diaphragm in 13 out of 15 cases and 45% according to **Chakrabarti et al**[6].

FINAL DIAGNOSIS (CAUSE OF PERITONITIS)
In our study 41 (45.6%) patients presents with peptic gastric perforation.

Desa et al[5] shows 32.29% of patients were duodenal ulcer perforation and 41% as appendicular perforation by **Kachroo et al**[7]. **Chakrabarti et al**[6] shows 55% of the cases as duodenal perforation.

OPERATIVE MANAGEMENT
In our study 40 (44.4%) cases were operated with Repair & omentopexy. 21 (23.3%) cases were treated with simple repair of perforation in double layer. Resection anastomosis was performed in 10 (11.1%) patients. Appendicectomy was done in 7 (7.7%) cases. **Chakrabarti et al**[6] state that 54 patients underwent simple closure with omentopexy.

COMPLICATIONS
Wound infection was found in 36 (40%) patients and electrolyte imbalance in 29 (32.2%) patient. 12 (13.3%) had asthma with UTI in 10 (11.1%) patients. Renal failure in 7 (7.8%) patients and fecal fistula in 6 (6.7%) cases. Similar to our study, **Desa et al**[5], **Kachroo et al**[7] and **Chakrabarti et al**[6] reports wound infection as common complication.

DURATION OF TREATMENT (DAYS)
The minimum stay in hospital was 2 and the maximum was 30. The mean time was found to be 9.70 ± 4.66 days.

OUTCOME/ CONCLUSION
In our study of 90 patients total 80 (88.9%) patients were discharged in well condition and 10 (11.1%) expired. Majority were discharged in well condition. 24.8% of mortality was found by **Desa et al**[5] and 8.8% by **Kachroo et al**[7] and 13% by **Chakrabarti et al**[6]. Study by **Hunt et al**[8] out of 54 patients average age of patients get expired was 62 years. **Desa et al**[5] study states that the mean age of the patient expired was 49.2 years.

In our study the cause of death is directly proportional to delayed in presentation.

Majority are male between 30-39 years presented on 2nd day with abdominal pain and distension followed by guarding and rigidity with absence of bowel sounds.

Abnormal level of hemogram was noted in 2/3rd of patients with septicemia in 50%.

Gas under diaphragm was found in 94.4% with peptic gastric perforation as common cause. Repair & omentopexy was common intervention performed in our study with surgical site wound infection as commonest complications.

An average number of stay is 9.70 ± 4.66 days and 80 (88.9%) patients were discharged.

In conclusion we observe that less delay in presentation, proper resuscitation and early surgical intervention reduces the risk rate of morbidity and accounts for lesser mortality that was associated with perforation peritonitis.

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