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Original Research Paper

General Surgery

STUDY OF VARIOUS CLINICAL PARAMETERS IN PEPTIC ULCER PERFORATION AND ITS RELATION WITH OUTCOME IN BUNDELKHAND REGION

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ABSTRACT

Background: In our study we aimed to provide a complete epidemiological, clinical and management description of Peptic ulcer Perforation in all age group patients

Materials and Methods: This study has been based on analysis 50 cases of peptic ulcer perforation (gastric and peptic) admitted in Department of Surgery, M.L.B. Medical College, Jhansi from December 2017 to August 2019. Results: All the patients who were undergoing exploratory laparotomy followed by graham's omentum patch repair for peptic ulcer perforation were taken. A detailed history, thorough clinical examination and necessary routine blood investigations and X-ray chest - standing position were performed in each case.

Conclusion: Peptic ulcer perforation shows increasing incidence in young adult males. The increased incidence shows association to smoking, alcoholism, irregular food habits, use of NSAIDS/steroids and overall stressed lifestyle.

KEYWORDS : Peptic ulcer, Perforation, Laparoscopy, Surgery, Outcome

INTRODUCTION

Perforation is one of the most important complications of a peptic ulcer (Acid -peptic disease). In spite of modern management, it is still a life threatening catastrophe. The sudden release of gastric or peptic contents into the peritoneal cavity through a perforation leads to a devastating sequence of events which if not properly managed, is likely to cause death. Perforation may occur in a patient with a known chronic peptic ulcer or it may happen without any preliminary symptoms at all (20%). Recent statistics indicate that roughly 10% of the population develops a gastric or peptic ulcer in lifetime. About 1-3% of population above the age of 20 yrs have some degree of Acid peptic disease during any annual period.

Acute perforation is one of the complications of chronic peptic ulcer (DC) and occurs in about 10-15% of all recognized chronic peptic ulcers[1].

A detailed history with regard to the symptomatology of the patient, a meticulous examination of the patient, radiological and biochemical investigations help to arrive at a correct diagnosis of perforation. Operative method is still the treatment of choice and simple closure of perforation is the method followed in most of the surgical centers. Conservative treatment is definitely unsuitable for routine use. But few of the patients who are brought to the hospital at a late stage, have major concurrent illness and preoperative shock, may Improve with conservative treatment with Herman Taylor's regimen. Immediate treatment for perforated peptic ulcer disease has been an established procedure for sometimes now. It can be stated that immediate definitive surgery like truncal vagotomy with a drainage procedure or Proximal Gastric Vagotomy (PGV) after simple closure for perforated peptic ulcer offers the prospects of a permanent cure with a mortality and morbidity comparable to that of patients with elective surgery. The recent studies show that whenever a definitive surgery is deemed an appropriate addition to a simple closure of perforated DU, PGV is the procedure of choice.

If the condition is not diagnosed properly and not adequately treated, it progress in a definite manner with a typical course and may lead to the death of the patient due to Bacterial peritonitis in about 7-8 days.

The mortality increases with delay in operating:

The mortality rate when operation is performed within 6 hours of onset of pain approaches zero, from 6-12 hours the rate is 5-10%, 12-24 hrs it is 25% or higher and in the course of 3rd day after, operations are seldom successful[2].

AIMS AND OBJECTIVES

The present study has been undertaken to evaluate

1. The age and sex incidence,
2. Associated clinical history.
3. Risk factor involved,
4. Time of surgical intervention done after the onset of illness,
5. Postoperative complication,
6. Total duration of hospital stay,
7. Mortality and its relation with outcome of the patient.

MATERIALS AND METHODS:

This study has been based on analysis 50 cases of peptic ulcer perforation (gastric and peptic) admitted in Department of Surgery, M.L.B. Medical College, Jhansi from December 2017 to August 2019.

The cases were collected at random, which were admitted in emergency and treated in various surgical units. After admission a detailed history was taken and clinical examination was done and possible immediate investigations were done.

All 50 cases admitted, and were subjected to emergency laparotomy . At the time of laparotomy, the site of perforation, size of perforation, nature of peritoneal fluid, peritoneal fluid culture and amount of peritoneal contamination were determined. All cases have been treated by simple closure with graham omental patch repair, peritoneal lavage, and flank drainage procedure.

Patients were followed up every day with continuous bedside monitoring of vital data in immediate post operative period. Due attention was paid to note the development of any complication .Suitable and appropriate treatment was instituted from time to time according to the needs of the patients.

After satisfactory improvement patients were discharged from the hospital with advice regarding diet, rest, drug to be taken and need for periodic checkup.

Patients who came for regular checkup were examined in

detail .A general physical examination and examination of the abdomen was carried out to note the condition of operative scar and for evidence of tenderness over the various regions of the abdomen and patients were advised necessary treatment.

Figure 1: X-Ray Abdomen AP Erect view with both dome of diaphragm shows gas under right dome of diaphragm

Figure 2: Gastric perforation

RESULTS:

All the patients who were undergoing exploratory laparotomy followed by graham's omentum patch repair for peptic ulcer perforation were taken. A detailed history, thorough clinical examination and necessary routine blood investigations and X-ray chest - standing position were performed in each case.

Generally in per abdomen examination- tenderness ,guarding / rigidity were present . Almost all the cases require Resuscitation, urinary catheterization for urinary output monitoring / Ryle Tube insertion and aspiration for reduce peritoneal contamination/Proper fluid and electrolytes management with broad spectrum antimicrobial coverage include anaerobes.

In preoperative investigation most of the patients have dehydration, anemia and hypernatremia. Almost all patients have free gas under right dome of diaphragm in X-Ray abdomen with both dome of diaphragm-AP Erect.. All patients need surgical intervention for which we performed graham's omental patch repair with peritoneal lavage followed by Morrison and pelvic drain insertion.

In Intraoperative findings- most of the patient have bilious / serosanguinous peritoneal fluid and prepyloric (gastric) perforation of size perforation less than 10 mm.

In the postoperative period- return of the bowel activity (day of passing flatus) and RT removal usually done between 3-5 days followed by oral sips allow. Morison drain usually removed between 3-5 days and pelvic drain removed within 6 –10 days of post-operative period. Most common postoperative complication was surgical site wound infection which usually managed by lower skin stitch removal and proper cleaning and dressing. In my study -19 patient have respiratory infection either in preoperative or in postoperative period and most of managed by prophylactic nebulisation, chest physiotherapy and steam inhalation and early mobilization. Most of the patient discharge from hospital within 6 -10 days. Post operative Mortality is only 6% and rest all survived.

DISCUSSION

Peptic ulcer perforation is one of the commonest non traumatic abdominal surgical emergencies requiring hospitalization and management in our hospital. Peptic ulcer disease, once so common 3-4 decades ago, has drastically decreased in incidence due to the advent of PPIs and anti H. pylori therapy. Although perforate peptic ulcer remains a dramatic surgical emergency, now-a-days it seldom results in death. The surgical mortality has decreased steadily and is now about 5% (Sawyers et al., 1976[3]). Obviously, patient characteristics are crucial in choosing optimal surgical treatment. Simple closure or even non-operative management is acknowledged to be most appropriate for patients who are markedly debilitated or in shock.

Simple closure is associated with an unacceptable high recurrence rate of peptic ulcer, as high as 92.50% (Anantha Krishnan et al. 2013[4]). But with increased knowledge about the significance of H. pylori infection in perforated peptic ulcer, it has been shown that eradication of this organism has become imperative after patch closure. An aphorism 'once an ulcer, always an ulcer' which seemed infallible earlier is slowly becoming obsolete, since eradication of H. Pylori seems to eliminate recurrences of peptic ulcer.

1. Age:

Peptic ulcer perforation is common in age group of 50-60 years in our study, but the age is no bar for perforation to occur.

In our study, youngest patient was 18 years old male and oldest was 80 years old.

Mean age in our study is 46.17$\pm$18.197 in years.

2. Sex:

In our study out of 50 patients 47 were male and only 3 females Majority of the authors have reported that incidence is high in males when compared to females.

In our study male to female ratio is 15:1

The male predominance can also be explained on the basis of smoking / alcoholism / more stress and strain of life style.

3. Habits/Risk factors:

In our study 47 out of 50 patients were smokers and 26 out of 50 were both smoker and alcoholic. This point out to the synergism between both risk factor and people. Our study match with Avijeet Mukherjee et al[5].

4. Chief / Presenting complaints

In our study most common symptom was sudden onset of upper abdominal / epigastric pain which was found in all 50 patients followed by abdominal distention which was found in 46 out of 50 patients. Fever and vomiting had been seen in some patients. Our study match with Andrew H. Soll et al[6].

5. General examination

Most common general examination finding was dehydration. Which was found in 44 out of 50 patients. Followed by tachycardia which was found in 39 out of 50 patients.

About 1/3rd of the patients presented with SIRS / shock.

13 out of 50 patients were having anemia and 6 patients having renal impairment.

Tsugawa et al[7] and Boey john et al[8] reviewed that preoperative shock and co morbidity led to increased morbidity and mortality in patients.

In our study we report that early surgical intervention via exploratory laparatomy followed by graham's omental patch repair with peritoneal lavage and broad expectrum

antimicrobial including antianaerobes / proper fluid and electrolyte management / prophylactic nebulization with chest physiotherapy/ early mobilization and early feeding favored good prognosis.

6. Preoperative per-abdomen findings

In our study most reliably tenderness and guarding / rigidity were present in all cases indicating peritonitis Obliteration of liver dullness and absent bowel sounds are common. Our study matched with Kuldeep M et al[9], Avijeet Mukerjee et al[5].

7. Radiological investigation

Since peptic perforation is an emergency, time spent for unnecessary investigations is cut off and basic investigations like X ray erect abdomen for gas under diaphragm is enough in making a probable diagnosis of perforation peritonitis.

In our study all cases were positive for free gas under right dome of diaphragm in plain Xray abdomen AP erect view.

Our study matched with Kuldeep M et al[9], Avijeet Mukherjee et al[5].

8. Preoperative electrolyte imbalance:

Most of patients having hypernatremia or hyperkalemia can be explained by the late refer of the patients from lower centers.

9. Intra operative findings:

In our study peritoneal fluid was mostly bilious (26 out of 50) followed by serosanguinous fluid (20 out of 50 patients), only 4 out of 50 patients had purulent peritoneal fluid, who had poor outcome.

In our study mostly patients with peptic ulcer perforations were pre pyloric And perforation of size less than 10mm had good prognosis. Only 3 cases out of 50 were having perforation of size more than 10mm and were having higher morbidity.

Grahams omental patch repair with peritoneal lavage / Morrison and pelvic drain insertion was done in all prepyloric perforation cases.

10. Post operative care:

In our study it is seen that return of the bowel activity usualy comes within 3-5 days in postoperative period. At the same time Ryle tube was removed and oral sips were allowed.

In our study- Morrison drain was usually removed within 3-5 days in post operative period and pelvic drain was usually removed within 6 -10 days of postoperative period.

11. Postoperative complication

In our study most common post operative complicatin was surgical site wound infection which occurred in 28 out of 50 patients. This was probably due to peritoneal fluid contamination, and was usually managed by removal of lowest stitch with regular cleaning and dressing.

19 out of 50 patients had respiratory infection either in preoperative / postoperative period. Most of them were managed by nebulization and chest physiotherapy and a very few need ICU care with ventilator support.

12. Duration of hospital stay:

In our study most of the patients were discharged within 6-10 days with prescription of Anti-H-Pylori regimen.

13. Mortality:

In our study mortality rate was very minimal and only 3 out of 50 patients were died.

The mortality in these 3 patients can be attributed to elderly age, late presentation, shock at the time of presentation, bigger size of perforation and chronic smoking, alcoholism with other co-morbidities.

Our study matched with Sawyers et al[3] and Bharathi C Ramesh et al[10] .

CONCLUSIONS

1. Peptic ulcer perforation is one of the most common Nontraumatic acute abdominal emergencies.
2. Peak incidence 50-60 years.
3. Male have higher incidences than female.
4. No perforation found in children. Youngest was 18 year old male and oldest was 80 year old male.
5. Most of patient of peptic perforation belong to middle class followed by upper lower and upper middle least is seen in upper class.
6. Maximum number of patient of perforation belongs to rural area.
7. Maximum number of patient are referred from some other Lower centers.
8. Most common risk factors are smoking followed by alcoholism and NSAID intake.
9. Most common symptom is sudden onset upper abdominal / epigastric pain.
10. The general conditions of patients were usually poor with dehydration / SIRS / shock.
11. Generally in per abdomen examination- tenderness, guarding / rigidity were present.
12. Almost all the cases require Resuscitation, urinary catheterization for urine output monitoring / Ryle Tube insertion and aspiration to reduce peritoneal contamination / Proper fluid and electrolytes management along with broad spectrum antimicrobial coverage include anaerobes and proton pump inhibitors or hydrogen receptor blockers.
13. In preoperative investigation most of the patients have dehydration, anemia and hypernatremia or hyperkalemia.
14. Almost all patients have free gas under right dome of diaphragm in X-Ray abdomen with both dome of diaphragm-AP Erect.
15. All patients need surgical intervention for which we performed graham's omental patch repair with peritoneal lavage followed by Morrison and pelvic drain placement.
16. In Intraoperative findings- most of the patient have bilious / serosanguinous peritoneal fluid and prepyloric (gastric) perforation of size perforation less than 10 mm.
17. In the postoperative period- return of the bowel activity (day of passing flatus) and RT removal usually done between 3-5 days followed by oral sips allow.
18. Morison drain usually removed between 3-5 days and pelvic drain removed within 6 –10 days of post-operative period.
19. Most common postoperative complication was surgical site wound infection which usually managed by lower skin stitch removal and proper cleaning and dressing.
20. In my study 19 patients have respiratory infection either in preoperative or in postoperative period and most of managed by prophylactic nebulization, chest physiotherapy, steam inhalation and early mobilization.
21. Most of the patients discharge from hospital within 6 -10 days.
22. Post operative Mortality is only 6% and rest all survived.

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