

CLINICAL PRESENTATIONS, FACTORS RELATED WITH COMPLICATIONS AND MORTALITY IN PEPTIC ULCER PERFORATION IN YOUNG ADULTS: A TERTIARY LEVEL HOSPITAL STUDY

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ABSTRACT:

Objectives: As the peptic ulcer affects 2-10% of the population and is gradually affecting more of the young as compared to the old so a study was designed to identify the factors associated and look for the complications and incidence of peptic ulcer perforation in young adults. **Methods:** Patients of either sex between 18-30 years of age diagnosed of peptic ulcer perforation failing to respond to medical therapy, admitted on an emergency basis were included into the study. Intra-operative findings pertaining to exploration under general anesthesia, release of free gas as the abdomen was opened, site and size of perforation, amount and nature of peritoneal contamination present were made note of standard procedure of simple closure and live omentoplasty followed by thorough peritoneal lavage was performed. **Results:** Of 270 patients, 96(35.5 %) patients constituted our study group of which 78 (81.2%) were males and 18 (18.7%) were females. 20.8 % of the patients reported of history of acute peptic disease/ulcer and had taken medication in the past in any form i.e. antacid, H⁺ pump inhibitor or H-2 blocker whereas 76 (79.1%) patients reported of no such history. All the patients of study group presented with symptoms of pain, tenderness, tachycardia and guarding. Pneumoperitoneum was found in 89 (92.7%) and all 96 (100%) presented with pyoperitoneum. 67 (69.7%), 29 (30.2 %), patients suffered anterior duodenal and gastric perforation respectively and 2 patients suffered combined gastric and duodenal perforation. 2 (2.08%) patients expired post-operatively, 65 (67.7%) continued their regular follow up and 31 (32%) patients did not turn back. **Conclusion:** Peptic ulcer perforation is common disorder in the young population with a male predominance.

Keywords: Incidence, Young adults, Peptic ulcer perforation, Pneumoperitoneum.

INTRODUCTION

Although peptic ulcer have undergone a change with current development in cleanliness and vast availability of potent antisecretory and

ulcerogenic drugs but still peptic ulcer perforation is the commonest perforation of the gastrointestinal tract affecting on an average 2-10 % of the total population. (1-3)

The disease demands prompt diagnosis, timely resuscitation and proper surgical management so as to reduce the morbidity and mortality. Surgery is the mainstay of emergency treatment of these life-threatening complications that are refractory to medical management. The ideal management for the duodenal ulcer perforation has not yet been established. (4-5)

Duodenal perforation is a very common and fatal complication in patients of chronic peptic ulcer symptoms with inadequate or no medical treatment. Perforated duodenal ulcer is mainly a disease of young men but owing to increased smoking and drinking habits in women, NSAID abuse in all the age groups and work related stress, from past few decades peptic ulcer is commonly reported in all adult young population. Up to 80% of patients with perforated duodenal ulcers are *Helicobacter pylori* positive.

(6,7,8,9)

As this gastric ulcer perforation is gradually affecting more of the young as compared to the old so a prospective study was designed to identify the factors associated and look for the complications and incidence of peptic ulcer perforation in young adults admitted in different surgical wards of our Medical College and Hospital.

METHODS

The study was initiated with the approval of Institutional ethics committee and sample size was determined with the rate of prevalence of peptic ulcer perforation.

Inclusion criteria

Patients of either sex between 18-30 years of age diagnosed of peptic ulcer perforation (gastric or duodenal ulcer perforation) failing to respond to medical therapy, admitted on an emergency basis were included into the study after written consent.

Diagnostic criteria

Cases of presence of free gas under diaphragm and gastric or duodenal ulcer perforation that was confirmed only on exploration were included in this study.

Exclusion criteria

Patients with traumatic perforation (jejunal or ileal, appendicular or large bowel), histopathologically proven cases of malignant gastric ulcer perforation, gastro-jejunal stomal perforations were not included in the study.

A thorough history related with previous episodes of dyspepsia, NSAID, smoking and ulcero-genic drugs like steroid use were documented.

Adequate preoperative management was done. Intra-operative findings pertaining to exploration under general anesthesia, release of free gas as the abdomen was opened, site and size of perforation, amount and nature of peritoneal contamination present were made note of. Since we did not encounter any giant gastric or duodenal ulcer perforation case, so, standard procedure of simple closure and live

omentoplasty followed by thorough peritoneal lavage was performed. The procedure was carried out with copious amounts of normal saline and metronidazole. The abdominal drains were kept as per the requirement. Abdomen was closed in layers. Post-operatively, the patients were given intra-venous fluids and were not allowed to take anything by mouth until their bowel activity returned. They were kept on injectable broad spectrum antibiotics, analgesics and pantoprazole (40 mg) once a day. As and when required, the patients were given blood transfusions. Post-operatively the patients in the study were evaluated for various complications. Operative mortality was considered death during hospitalization. Owing to the lack of facilities to study *H. pylori* in our institution, *H. pylori* assay could not be done. Our study group comprised of young patients so gastric biopsy was not done considering the incidence of gastric cancer to be rare. On discharge, all patients were instructed to strictly follow triple regimen for *H. pylori* eradication. After the discharge, a follow up after 2 weeks, 1 month, 3 months and 6 months was done with all patients.

RESULTS

A total of 270 patients of peptic ulcer perforation presented in casualty and surgery out-patient department from October 2010 to October 2012 of which 87 being into the age group of 18 to 30 years were enrolled into the study.

Of the 96 patients enrolled, 78 (81.2 %) were males and 18 (18.7%) females. The male to female ratio of peptic ulcer perforation in young adult therefore was 2.3:1. 20.8 % of the patients reported of history of acute peptic disease/ulcer and had taken medication in the past in any form

i.e. antacid, H⁺ pump inhibitor or H-2 blocker whereas 76 (79.1%) patients reported of no such history.

Table 1: Distribution of number of patients in various age range (n=270)

| Age (in years) | Number of Cases(n=270) | Percentage |
|----------------|------------------------|------------|
| 0-10 | 0 | 0 |
| 11-20 | 2 | 0.74 |
| 11-17 | 9 | 3.33 |
| 18-20 | 18 | 6.67 |
| 21-30 | 78 | 28.89 |
| 31-40 | 44 | 16.30 |
| 41-50 | 41 | 15.19 |
| 51-60 | 40 | 14.81 |
| 61-70 | 36 | 13.33 |
| 71-80 | 2 | 0.74 |
| TOTAL | 270 | 100 |

Table 2: Presenting symptoms

| Symptoms | Number of Cases | Percentage |
|------------------------|-----------------|------------|
| Pain | 96 | 100 |
| Vomiting | 49 | 51.0 |
| Distension of abdomen | 35 | 36.5 |
| Fever | 27 | 28.1 |
| Constipation | 12 | 12.5 |
| Hematemesis and malena | 1 | 1.04 |

Relation with smoking - 57 (59.3%) patients were smokers whereas 39 (40 %) non-smokers. H/O of alcoholism - 58 (60.4%) patients were alcoholic, while 38 (39.6%) non-alcoholic.

H/O of NSAIDs use - 13 (18.57%) patients had a previous history of NSAIDs use while 57 (81.42%) had no such history.

Table 3: Presenting signs

| Signs | Number of cases | Percentage |
|----------------------|-----------------|------------|
| Tenderness | 96 | 100 |
| Tachycardia | 96 | 100.0 |
| Guarding/rigidity | 92 | 95.8 |
| Obliteration of UBLD | 78 | 81.3 |
| Bowel sounds | 0 | 0 |
| Present | 43 | 44.8 |
| Absent | 35 | 36.5 |
| Pallor | 39 | 40.6 |
| Shock | 2 | 2.1 |

X-ray abdomen in erect revealed that 89 (92.7%) patients had gas under diaphragm (pneumoperitoneum) and on ultrasonography

abdomen S/O pyoperitoneum were found in all cases. 67 (69.7%), 29 (30.2 %), patients suffered anterior duodenal and gastric perforation respectively with a ratio of 2.3:1 and 2 patients suffered combined gastric and duodenal perforation.

Table 4: Post operative complications

| Complications | Number of cases | Percentage |
|---------------------------------------|-----------------|------------|
| Wound | 10 | 10.4 |
| Infection | 6 | 6.3 |
| Burst abdomen | 4 | 4.2 |
| Atelectasis | 4 | 4.2 |
| Residual abscess | 2 | 2.1 |
| Suture leak | 0 | 0.0 |
| Re-exploration | 0 | 0.0 |
| Post-operative Intestinal obstruction | 0 | 0 |

Perforation of size <1 cm was found in 89 (92.7%), and size of > 1 cm was found in 7(7.29%) of the patients.

Post-operative follow-up: In a follow up period of 6 months, 2 (2.08%) patients expired post-operatively, 65 (67.7%) continued their regular follow up and 31 (32%) patients did not turn back.

Of 65 patients who underwent regular follow up, 60 (92%) were asymptomatic and 5 (8.3%) had mild to moderate symptoms of peptic ulcer disease in the form of mild epigastric pain, regurgitation, and few episodes of vomiting that could easily be controlled by anti-ulcer treatment like proton pump inhibitors (pantoprazole 40 mg BID).

None of the patients developed post-operative intestinal obstruction.

DISCUSSION

Peptic ulcer perforation is the commonest perforation of the gastrointestinal tract that demands prompt diagnosis, timely resuscitation and proper surgical management so as to reduce the morbidity and mortality. Surgery is the mainstay of emergency treatment.

In a study conducted by Bharti et al (1996) on peptic ulcer perforation, group of patients falling between 31-40 years of age had a maximum incidence of peptic ulcer perforation i.e. 48%. Of these, 72% patients had duodenal perforation. 84% patients had a positive X-ray finding and 94% were positive on ultrasound examination (1).

Hannan et al (2005) in their study of peptic perforation also reported highest incidence of 34% in the age group of 30-40 years. The mean age of the patients was 41 years (2).

Duodenal perforation is a very common and fatal complication in patients of chronic peptic ulcer symptoms with inadequate or no medical treatment.

Different from the above two studies, Elnagib et al (2008) reported the maximum incidence of peptic ulcer perforation i.e. 38% in still younger patients of age group of 20-30 years. NSAIDs abuse is amongst an important causative factor for perforation accounting for a total of 43% patients with stress and alcoholism together accounting for 23% (4).

Chalya et al (2011) in their 4 year study also reported the maximum number of patients i.e. 41% in the age group of 21-30 years (8).

Our study was consistent with above two studies with a maximum incidence of 28.89% in the patients of age group 21-30 years and only 16.30 in the age group of 31-40 years.

CONCLUSION

Peptic ulcer perforation is a very common and fatal complication affecting young population, predominantly men. But owing to increased smoking and drinking habits in women, NSAID abuse in all the age groups and work related stress from past few decades peptic ulcer is reported in all young population irrespective of sex. Although *Helicobacter pylori* is implicated in most of the perforated duodenal ulcers. Drugs are included but its association in peptic ulcer perforation could not be proved in the present

study due to lack of diagnostic facilities for *H. pylori* in our institution.

Post-operative follow-up of the treated patient should be done to detect the recurrence of ulcer, and the symptomatic patient should be evaluated with upper gastro-intestinal endoscopy.

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Ethical approval: The study was approved by the institutional ethics committee

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