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REVIEW ARTICLE

A CLINICAL REVIEW IN GASTRODUODENAL PERFORATION: IN SOUTHERN ODISHA ON 30 CONSECUTIVE CASES

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ABSTRACT: Gastrointestinal perforation is one of the common surgical emergency worldwide and its spectrum is different in India from its western counterpart. With the advancement of medical science still the morbidity and mortality rate is not acceptable. The data regarding the factor affecting the morbidity and mortality is still unclear in India. The present study is conducted in M.K.C.G. Medical College Brahmapur, Odisha in the Dept. of Gen. Surgery on 30 patients with intraoperative findings of gastroduodenal perforation presented to the surgical OPD between July 2014 to Nov 2014 and post op follow up was done till the discharge of the patient from the hospital. **OBJECTIVES:** To highlight the common cause of gastroduodenal perforation, age/sex commonly affected and the factor that influence the morbidity and mortality related to it. **RESULTS:** In our study the most common cause of gastroduodenal perforation is chronic and heavy alcohol intake followed by NSAID intake, common age group and sex with predisposing factor is 50 – 59yrs. males (36.6%). Morbidity and mortality is higher in elderly patients (>60 yrs.) with late presentation to health care center, poor general condition of patient and their pre -operative co-morbid condition. Most common entity is D1 Anterior wall perforation. **CONCLUSION:** The two common cause of gastroduodenal perforation in our study is chronic and heavy alcohol intake followed by NSAID intake and it is preventable. Late presentation to the hospital still remains an important factor for increase in morbidity and mortality for patient of perforation peritonitis. We need to develop a system for early diagnosis and early referral to tertiary care and make the community aware about the risk factor to decrease the morbidity and mortality due to this disease.

KEYWORDS: Gastroduodenal perforation, morbidity, mortality, peritonitis.

INTRODUCTION: BACKGROUND: Gastrointestinal perforation is one of the common surgical emergency worldwide. Early diagnosis, proper surgical intervention and proper post-operative care are the mainstay of the treatment. Early presentation to hospital, patient's general condition and comorbid condition are the main prognostic factor. Patient who present early to hospital with good general condition has low morbidity and mortality.

The risk factors include APD, NSAID intake, Steroid intake, heavy and chronic alcohol intake, Corrosive poisoning ingestion, Gastric malignancy, trauma, tuberculosis, Typhoid. Gastrointestinal perforation has different spectrum in India as compare to its western counterpart. Lower gastrointestinal perforation is more common in western countries while in India Gastroduodenal perforation is the most common site for gastrointestinal perforation. The sign and symptoms are ranges from mild abdominal pain to generalized peritonitis and MODS.

METHODOLOGY: All consecutive patients from both sex and all age groups with features of hollow viscus perforation were admitted to the Surgery Dept. of M.K.C.G. Medical College and hospital Brahmapur.

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During the period of study all routine investigations, X-ray chest and abdomen in erect posture and USG of abdomen was done. After the confirmation of hollow viscus perforation exploratory laparotomy was done in emergency setup. On the basis of operative findings with gastroduodenal perforation were selected for the study. A retrospective analysis was done from patient's clinical history regarding predisposing factor and clinical record from bed head ticket.

EXCLUSION CRITERIA:

Patient not willing to take part in the study and other than gastroduodenal perforation.

OBSERVATION:

AGE GROUP (In Yrs.)	CASE	%
20 - 29	02	6.6%
30 - 39	01	3.3%
40 - 49	08	26.6%
50 - 59	11	36.6%
60 - 69	04	13.3%
70 - 79	02	6.6%
>80	02	6.6%

TABLE 1. AGE DISTRIBUTION

In our study a total 30 no. of gastroduodenal perforation were studied in five month of interval, the age group that is affected most are 50-59yrs. (11 patient, 36.6%) followed by 40-49 (08 patient,26.6%), that reflects gastroduodenal perforation is common in middle age and <20yrs. it is rare, with majority of patient being males(96.6% Table 1)

RISK FACTOR	CASE	IN %
PUD	01	3.3%
NSAID INTAKE	14	46.6%
STEROID INTAKE	O1	3.3%
ALCOHOL INTAKE	20	66.6%
MALIGNANCY	00	00%
TRAUMA	00	00%
APD + NSAID	04	13.3%
APD + NSAID + ALCOHOL	00	00%
APD + ALCOHOL	03	10%
NSAID + ALCOHOL	07	23.3%

TABLE 2

Intake of heavy and chronic alcohol is the most common risk factor (20 patient,66.6%) for gastroduodenal perforation followed by NSAID intake(14 patient 46.6%), among them 07 patient(23.3% Table 2) has history of intake of both alcohol and NSAID and this patient has given typical history of intake of alcohol that lead to pain upper abdomen and they ingested NSAID for the

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treatment of the pain, they have short history of intake of NSAID that shows if two risk factor coexist together the time interval for pathogenesis of gastroduodenal perforation is get decreased.

1st	09	30%
2nd	10	33.3%
3rd	04	13.3%
4th	03	10%
5th	01	3.3%
6th	03	10%

TABLE 3: DURATION FROM THE ONSET OF SYMPTOM TO PRESENTATION TO OUR INSTITUTE (IN DAYS)

The time taken by the patient between onset of symptoms and presentation to hospital was less than 24 hrs. in 09 cases (30%) and between 24-48 hrs. in 10 cases (33.3%) and general condition of these patient were stable, post-operative morbidity and mortality was less in these cases. The data reflects that early presentation to hospital and early treatment causes less morbidity and mortality. Patient who presented after 48 hrs. Had shock (10 patient, 33.3%) out of total no. 13 patient with shock and all the 07 patient (23.3%) with MODS were presented after 48 hrs. from the onset of symptoms (Table 3, 4).

SIGNS AND SYMPTOMS	IN CASES	IN %
PAIN ABDOMEN	30	100%
VOMITING	20	66.6%
FEVER	10	33.3%
DISTENSION ABDOMEN	20	66.6%
GUADING & RIGIDITY	23	76.6%
CONSTIPATION	03	10%
SHOCK	13	43.3%
MODS	07	23.3%

TABLE 4: SYMPTOMS AND SIGNS

Pain abdomen is the most common symptoms present in 100% cases, that is not relieved by medication followed by vomiting (20 patient 66.65%) distension of abdomen (20 patient, 66.6%), fever(33.3%), Guarding and rigidity (76.6%) is common in patient who presented more than 24 hrs. of onset of symptoms (Table 4).

D1 ANTERIOR WALL	**28**	**93.3%**
D1 POSTERIOR WALL	01	3.3%
GASTRIC PERFORATION	01	3.3%
PYOPERITONIUM	10	33.3%
ADHESION	04	13.3%
SHIELD PERFORATION	03	10%

TABLE 5: OPERATIVE FINDINGS

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Operative findings shows D1 Anterior wall perforation (28 patient, 93.9%) is the commonest site of gastroduodenal perforation while D1 Posterior wall and gastric perforation has equal incidence. The incidence of pyoperitoneum are common with late presentation 10 patient (33.3%, Table 5)

INVESTIGATION DONE IN ALL PATIENTS:

- HB, TLC, DLC, TPC, CT, BT.
- SERUM – Urea, Creatinine, Sodium, Potassium, RBS.
- ECG.
- HIV/HBsAg.
- X-RAY Chest and Abdomen in erect posture.
- USG Abdomen.

DIAGNOSIS: Patients were diagnosed by thorough clinical examination, X-Ray chest and X- Ray abdomen in erect posture showing both dome of diaphragm and USG Abdomen. In X-Ray chest and abdomen, 25(83.3%) patients had gas under diaphragm out of 30 patient and in USG abdomen and pelvis all the patient had peritoneal collection.

TREATMENT: All the patient were treated by Modified Graham's closure, thorough peritoneal lavage done with normal saline, after the closure of abdomen Metrogyl solution instilled via abdominal drain and clamped for 3 hrs.

Total Mortality: 05(16.6%)
Male: Female: 29: 1

DISCUSSION: Gastroduodenal perforation is the most common cause for perforation peritonitis.[1,2,3.4] Most commonly affecting the men with mean age between 40-59 yr. similar patterns was seen in various other studies. Late presentation to the hospital, patient's poor general condition, old age and comorbid condition are the factor responsible for high morbidity and mortality.[5,6]Most of the patient who presented > 48hr to the hospital had well developed peritonitis and shock. In our study 23 (76.6%) has features of peritonitis, out of them 17(56.6%) were presented after 48hr. 13 patient (43.3%) were in shock out of them 10 patient (33.3%) were presented after 48hrs.[7]

D1 Anterior wall is the most common site for upper gastrointestinal perforation.[8] Duodenal to gastric ulcer perforation was 7:1 and 15:1 noted in earlier studies in India but it is 29:1 in present series.

All the patients were treated with modified Graham' closure with thorough peritoneal lavage with normal saline and metrogyl was instilled after the closure of abdomen. There were 05(16.6%) deaths. The important cause for mortality was due to septicaemia. The previous study by George et al shows with simple closure the mortality rate was 10.9% that is comparable.[9]

Maximum no of patient with gastroduodenal perforation were from low socio economic status and has positive history of chronic and heavy alcohol intake (20 patient, 66.6%) with no previous history of pain abdomen. Alcohol intake is the known risk factor for PUD and gastroduodenal perforation is a complication of PUD. Jhobta et al study shows PUD is the most common cause for gastroduodenal perforation.

CONCLUSION: To conclude the spectrum of gastroduodenal perforation it is common in India in contrast to western countries where lower gastrointestinal perforation is more common. All the cases of pain abdomen presented to hospital must be taken seriously and routine and radiological investigation should be done, to reduce the morbidity and mortality related to this disease. Making community aware about the risk factor could be a new trend to avoid it.

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