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A Clinicopathological Study on Duodenal Ulcer Perforation and Its Management in Tertiary Care Centre

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ABSTRACT:
-Peptic ulcer disease is the result of imbalance of acid secretions & mucosal defence mechanisms.
->90% of patients with PUD are infected with H.pylori, others are due to chronic smoking , alcoholism , NSAID usage, defective duodenal acid secretion mechanism.
-Acute perforation is the most common complication of peptic ulcer disease occurring due to sudden sloughing of unsupported portion of floor of ulcer secondary to slow process of devascularisation.
-Sudden release of gastric/duodenal contents into peritoneal cavity through the perforation leads to devastating sequence of events which if not properly managed are likely to cause death.
KEYWORDS- peptic ulcer disease, perforation

I. INTRODUCTION-

Perforation occurs most commonly on anterior wall due to spurting of gastric contents on to anterior wall.

Perforation progresses in 3 stages -

1. **STAGE OF PERITONITIS OR PRIMARY STAGE** ---immediately after perforation--lasts for 6hrs, symptoms arise due to irritation of peritoneum by escape of gastric and duodenal contents . Produces immediate reflex effect on circulatory and nervous system , referred to as primary neurogenic shock
2.**STAGE OF REACTION OR SECONDARY STAGE** ----pain ceases at this stage due to dilution of irritants by peritoneal exudates. Stage is also known as stage of delusion.
3. STAGE OF BACTERIAL PERITONITIS ----pain is less severe, vomiting is frequent, hiccoughs present , sweating , vomiting and third space fluid loss & abdominal distension, dehydration and electrolyte depletion becomes more evident, characterised by Hippocrates facies.

Patient presents with symptoms of abdominal distension , vomitings, fever.
signs like tenderness , guarding , rigidity.

INVESTIGATIONS-CXR , X ray erect abdomen show air under diaphragm , USG abdomen and pelvis shows free fluid in abdomen.

MANAGEMENT- Patient is initially resuscitated and exploratory laparotomy with grahams omental patch closure done with post op anti H.Pylori regimen .

Definitive procedures like truncal vagotomy with drainage procedure , proximal gastric vagotomy after simple patch closure offer permanent cure with less morbidity and mortality compared to patients of elective surgery.

Conservative management is not definitive but can be opted in patients with late presentations associated with major co-morbidities and preoperative shock and show improvement using HERMAN TAYLOR'S REGIMEN.

II. CASE REPORT-

MATERIAL AND METHODS :
This is a prospective study carried out in 50 patients admitted in Prathima Institute of Medical sciences General Surgery department during September 2020 to September 2022.

INCLUSION CRITERIA:
Patients admitted with duodenal ulcer perforation during study period with age between 25yrs -80yrs.

EXCLUSION CRITERIA-
1.Patients with age < 25yrs and >80yrs
2.Other hollow viscous perforation
3.Duodenal perforation due to trauma

All routine blood investigations such as CBC, RFT,LFT, serum electrolytes, blood grouping and typing done . Ryles tube insertion and Foleys catherization done. After stabilization patient was sent for radiological investigations . After confirmation , patient was posted for emergency exploratory laparotomy , biopsies were taken from edges of perforation and sent for histopathological examination and staining.

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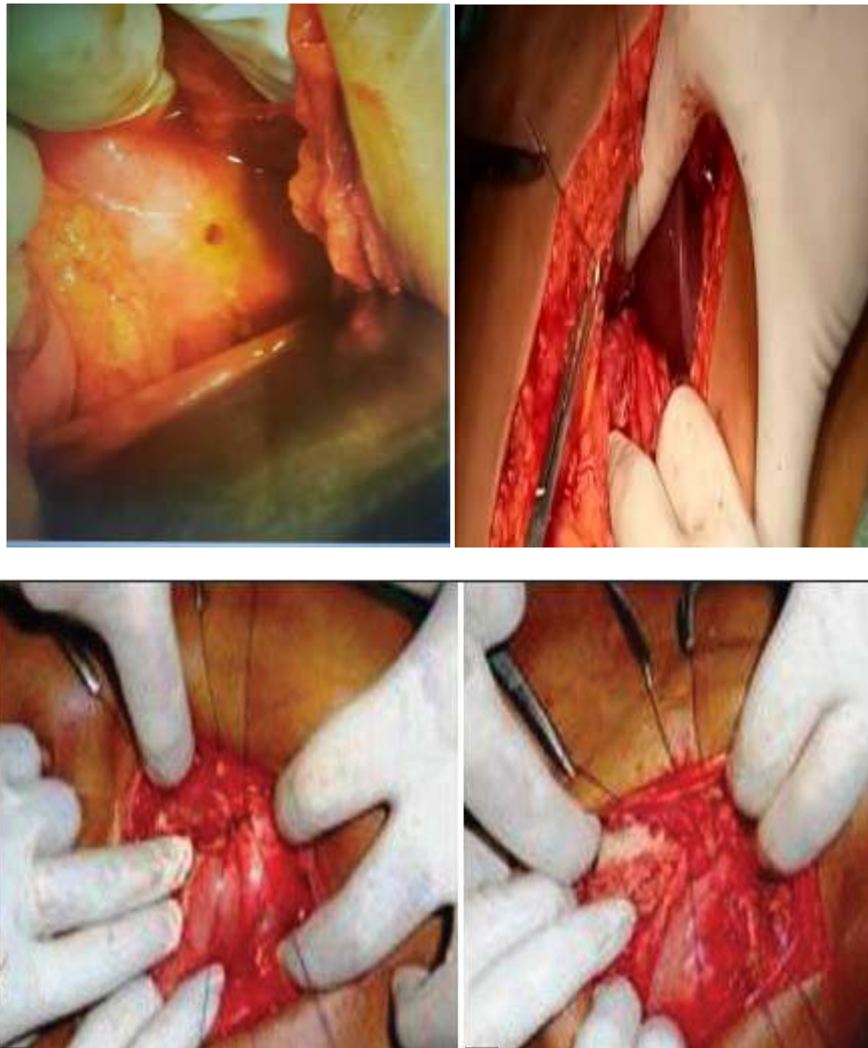

III. OBSERVATION :

1) Maximum number of duodenal perforations are between 25-65yrs age.
2) In this study all patients are males , but many authors stated that DU perforations are most common in males than females.
3) Incidence in lower middle class is 86%, middle 10%, upper class 04%
4) Incidence farmers 14%, labourers 22% , house wives 05% , student 05%.
5) 22 patients presented after 24hrs of onset of symptoms and 8 among them are hemodynamically unstable, 14 patients presented within 24hrs, 6 among them are with shock , 12 presented within 6-12hrs and 2 patients
presented within 6hrs, 1 patient was with shock who presented within 6-12hrs
6) Combined alcoholics have incidence of 50%, only alcoholics have 18%, only smokers have 20%, non alcoholics and non smokers have 06% incidence.
7) Incidence in “ O” blood group is 56%, “ A ” – 36% , “B” -16% , “AB”-12%.
8) Common presenting symptoms were pain abdomen 92%, abdominal distension 70%, fever 54%, vomitings60%
9) Common signs are dehydration 86% , tachycardia 74% , hypotension 60%, pallor 50%.
10) Post operative complications were surgical site infection 26%, respiratory 10% ,electrolyte imbalances 16% , sepsis 02% , wound dehiscence 04% . Perforations on anterior wall of D1 and D2 are 98% & 02%
respectively .
11)35% cases were positive for rapid urease test
12) Mortality in 2% cases , who presented after 24hrs.

Table 1: age distribution

Age in yrs	No.of cases	%
<25	2	4
26-35	8	16
36-45	4	8
46-55	12	24
56-65	14	28
66-75	7	14
76-80	3	6

Table 2: occupation distribution

occupation	No.of cases
Farmer	14
Labourer	22
House wife	5
Businessman	4
student	5

Table 3-socio economic status

Socioeconomic status	No.of cases	%
Low	43	86
Middle	5	10
upper	2	4

Table 4 :Symptoms

Symptoms	No.of cases	%
Abdominal pain	46	92
Abdominal distension	35	70
Fever	26	54
Vomiting	30	60

Table 5: signs

Signs	No.of cases	%
Dehydration	43	86
Tachycardia	37	74
Hypotension	30	60
Pallor	25	50

Table 6- blood group

BLOOD GROUP	NO.OF CASES	%
O	28	56
A	18	36
B	8	16
AB	6	12

Table7: Alcohol and smoking

Habit	No.of Patients	%
Only alcohol	9	18
Only smoking	13	26
Alcohol and smoking	25	50
None	3	6

table 8 : postop complications

Complications	No.of cases	%
Surgical site infections	26	52
Respiratory	7	14
Electrolyte imbalance	12	24
Sepsis	2	4
dehiscence	3	6

Table 9: Total no of cases

Total no of cases	50	%
Total no of deaths	1	2

Table10- duration of symptoms

Duration	No of cases	Condition of patient (good/average)	sepsis
0-6hrs	2	2	-
6-12hrs	12	11	1
12-24hrs	14	8	6
>24hrs	22	14	8

IV. DISCUSSION :

In this observational study of duodenal ulcer perforation in Prathima Institute of Medical Sciences, between September 2020 and September 2022, the various etiological factors , habits are taken into account and intra operative findings, complications of patients are analysed in the post operative period. These are summed up and compared with literature.

Incidence is most common in males , elderly than compared to middle and young age .

Incidence is more in alcoholics and smokers than non alcoholics and non smokers, both are also regarded as accessory cause of perforation .

Smoking alone shows higher risk in pathogenesis and post op complication of perforation due to impaired healing from unknown

mechanisms. Perforations are most common in “O” blood group .

Perforations are most common in labourers followed by farmers , house wives , students. Common signs are dehydration, tachycardia , hypotension , pallor. This is probably due third space fluid loss and reduced fluid intake due to pain abdomen.

Most common complication was wound infection. Mortality rate was 2% due to septic shock. > 50% of patients showed H.pylori infection . Therefore treatment of H.Pylori is regarded as most important factor for peptic ulcer disease. Eradication of it is most important to reduce the incidence of perforation .

V. CONCLUSION

- The incidence of hollow viscous perforation is on raise due to addictions like alcohol and smoking , inadvertent use of NSAIDS, stress , malnutrition .
- Life style modifications like abstinence from smoking and alcohol, having physical exercise reduces incidence of disease and its complications .
- Early presentation to hospital also reduces the post op morbidity and mortality. Delayed presentation increases risk of sepsis and mortality .

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