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DUODENAL ULCER PERFPRATION - A RETROSPECTIVE CLINICAL STUDY IN VIMSAR, ODISHA

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ABSTRACT

BACKGROUND - Peptic ulcer disease though having multifactorial etiologies, out of which H.pyroli infection and NSAIDs use are leading causes of duodenal perforation. Gastro-duodenal perforations are common in surgical practice. Acute perforations of duodenum are estimated to occur in 2-10% of patients with ulcers. MATERIALS AND METHODS - This a retrospective study (done between August 2021 to August 2022), where 100 patients with duodenal ulcer perforation were enrolled, analyzed and compared in Department of General Surgery, Veer SurendraSai Institute of Medical Science And Research (VIMSAR) , Burla, Sambalpur. RESULTS – More common in 40-59 years age group, male and lower socioeconomic status. CONCLUSION- Duodenal ulcer perforation is one of the most common acute abdominal emergencies.

KEY WORDS – Gastro-duodenal perforation, Non-steroidal anti-inflammatory drugs, Pneumoperitoneum

INTRODUCTION

Gastro-duodenal perforations are common in surgical practice. In spite of there is gradual decreasing in incidence of peptic ulcer disease in recent years due to use of proton pump inhibitors (PPIs) and eradication treatment for H. Pyroli, its complications like bleeding and perforation, are still remain a substantial healthcare problem which may be related to increased use of non-steroidal anti-inflammatory drugs (NSAIDs) , alcohol, smoking and to the aging population [1,2,3]. Peptic ulcer disease though having multifactorial etiologies, out of which H.pyroli infection and NSAIDs use are leading causes of duodenal perforation.Middle to older aged group are commonly affected in peptic ulcer disease. Duodenal ulcer perforations are 7 times more common than perforated gastric ulcers in both sexes. Acute perforations of

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duodenum are estimated to occur in 2-10% of patients with ulcers [4]. Mortality rate due to duodenal perforation ranges from 8%-25% [5,6,7]. The first description of a perforated duodenal ulcer was made in 1688 by Muralto and reported by Lenepneau[8]. In 1894, Dean reported the first successful surgical closure of a perforated duodenal ulcer [9]. Surgery is still the mainstay of treatment for duodenal perforation. . Management is quite challenging who present late, with septicemia, fluid and electrolyte derangements, shock or systemic inflammatory response syndrome [8].

MATERIAL AND METHOD

Study type – Retrospective study

Source of data – Patients admitted in Surgery department, Veer SurendraSai Institute of Medical Science And Research (VIMSAR), Burla, Sambalpur, Odisha for emergency surgery due to duodenal ulcer perorations between August 2021 to August 2022.

Sample size – 100 (Male = 89, Female =11)

Inclusion Criteria – Patients between 15 to 80 year of age irrespective of sex who were admitted for emergency surgery due to duodenal ulcer perforation (based on clinical features, radiological evidences and intra-operative findings).

Exclusion Criteria – Age below 15 years and more than 80 years

- Patients with multiple perforations
- Patients with anterior and posterior ulcer
- Patients with other diseases
- Immuno-compromised patients

ETHICAL APPROVAL - Taken .

FUNDING – No funding of sources

CONFLICT OF INTEREST – None declared

RESULTS

Table 1 : Age distribution.

Age in years	No. of cases	Percentage (%)
15-19	3	3
20-29	19	19
30-39	21	21
40-49	22	22

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50-59	22	22
60-80	14	13
Total	100	100

Table-1 : Shows out of 100 patients studied, the age varies from 15-80 years. The number of patients are lowest in (15-19) years age group(3%), and highest in both (40-49) years and (50-59) years age group(22%).

Table 2 : Sex distribution

Sex	No. of cases	Percentage (%)
Male	89	89
Female	11	11
Total	100	100

Table-2 : Shows out of 100 patients studied, 89(89%) are male and 11(11%) are female.

Table 3 : Patient's status according to family income with perforated duodenal ulcers

	No. of cases	Percentage (%)
Lower	68	68
Upper	32	32
Total	100	100

Table 3 : Shows 68% and 32% of patients belong to lower and upper socioeconomic status respectively.

Table 4 : History of peptic ulcers in patients with perforated duodenal ulcers

History	No. of cases	Percentage (%)
Present	62	62
Absent	38	38
Total	100	100

Table 4 : Shows 62% of patients have history of peptic ulcer disease.

Table 5 : Presence of free gas under diaphragm on digital X-ray in patients with perforated duodenal ulcers

	No. of cases	Percentage (%)
Free gas present	98	98
Free gas absent	2	2
Total	100	100

Table 5 : Shows on digital X-ray abdomen and pelvis, 98% of patients have free gas under diaphragm.

DISCUSSION

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Incidence of iatrogenic duodenal perforations are becoming more common following widespread use of endoscopic procedures such as endoscopic retrograde cholangiopancreatography (ERCP), operative injury related to surgical instrumentation, traumatic injury, foreign bodies (like ingested sharp and thin foreign body, implanted foreign bodies such as endoprosthesis or artificial vascular grafts), and spontaneous duodenal perforation in neonates.

In this study, among 100 patients included, the age varies from 15-80 years. The peak age incidence was equal in both (40-49) and (50-59) years age group, but duodenal perforation has no bar for a specific age group. Following table points opinions from many authors (Table-6).

Table 6 : Peak age incidence

Author	Year	Peak age incidence (in years)
Samuel J et al[10]	1953	30-60
Debaley et al[11]	1990	> 50
M.C.Dandpat et al[12]	1991	20-40
Ramesh C et al[13]	1995	30-50
Hannah et al[14]	2005	31-40
KalpeshJani et al[15]	2006	30-50
Taylor et alv[16]		>50
Noola GS et al[17]	2013	40-49
Present study	2022	Equal in both 40-49 and 50-59 age group (22%)

Table 6 : Shows Opinions from different authors, which correlates to our observation.

Out of 100 patients studied, 11 female cases were identified with duodenal perforation. This point towards male predominance which correlates to many authors. The difference in habits, social, economical and cultural activities may be reasons for that (Table-7).

Table 7 : Sex incidence

Author	Year	Male : female ratio
Paul. H. Jordan[18]	1995	26 : 1
Primrose N. John[19]	2004	2:1
Rodney Maingot[20]	1990	5 : 1
Noola GS et al [17]	2013	19 : 1
Present study	2022	8 : 1

Table 7 : Shows Male predominance for perforated duodenal ulcer.

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Out of 100 patients studied, 68 cases belonged to lower socioeconomic status, which signifies these people were more susceptible for duodenal perforation. The difference in habits, social, economical and cultural activities may be reasons for that.

Digital X-ray abdomen and pelvis was advised to all patients. 98% cases were found with free gas under diaphragm out of 100 cases studied(Table-8).

Table 8 :Comparison of free gas under diaphragm

Presence of free gas under diaphragm		
Study	Year	Pneumoperitoneum (%)
Shaffer study[21]	1992	70
Noola GS et al[17]	2013	91.67
Present study	2022	98

CONCLUSION

Gastro-duodenal perforations are common in surgical practice. Surgery is still the mainstay of treatment for duodenal perforation. . Management is quite challenging who present late, with septicemia, fluid and electrolyte derangements, shock or systemic inflammatory response syndrome.

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