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PERFORATED PEPTIC ULCER- A PROSPECTIVE TRIAL BETWEEN SIMPLE CLOSURE AND DEFINITIVE SURGERY

Surgery

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ABSTRACT

The perforation of gastro-intestinal tract is a serious problem without an attempt at relief. This dictum draws attention at once to the fact that the perforations of peptic ulcer are always serious as to prognosis. This study was done in the department of Surgery, Medical College Jabalpur M.P between the periods of 1989-1990. During the period of present study 48 (46 male and 2 female) patients were treated in surgical ward. Out of 48 cases, 08 cases (16.16%) were subjected to definitive surgery, 38 cases (79.16%) simple closure and 02 cases (94.16%) peritoneal lavage and drainage. The result of this study shows that the incidence of perforation peptic ulcer was higher in middle age group i.e. between 31 to 40 years; the mortality rate irrespective of the type of treatment was 8.33%; the average period of hospitalization irrespective of type of treatment was 9.6 days. In conclusion it can be said that definitive surgery has no mortality, lower complication rate and short duration of hospital stay with excellent follow up results as compared to the other modalities of treatment.

KEYWORDS

Perforated Peptic Ulcer, Simple Closure, Definitive Surgery, Peritoneal Lavage and Drainage.

INTRODUCTION

Although vague references of peptic ulcer disease were made even by hyppocrate and Gelen in first and second century. The history of earliest known case of perforated peptic ulcer was recorded in the 17th century. She was Henrietta-Anne the daughter of King Charles first, died suddenly in 1670 at the age of 26 year after a day of tenderness and abdominal pain[1,2,3,4,5]. Gastro-duodenal perforation is one of the most serious and most over whelming catastrophes that can fall on human being. Since 1880 when MiKulicz's first operated upon a case of perforated peptic ulcer steady progress has been made in the diagnosis and the management of acute gastro-duodenal perforations but still this disease carries a high morbidity and mortality[6]. In India P.K. Sen and T.E. Udwadia in 1963 presented a series of 317 cases treated by conservative treatment, simple closure and definitive surgery[7]. More recently Wainghaker (1971) presented a series of perforation duodenal ulcer treated by vagotomy and Pyloroplasty. They entirely agree with other western surgeons and recommended vagotomy and pyloroplasty as the treatment of choice in suitable case of perforated peptic ulcer[8]. The aim of present study was to find out the mortality and morbidity in perforated peptic ulcer, to compare the efficiency of simple closure and definitive closure, to reduce the recurrence rate and to reduce the long term post-operative medication.

MATERIAL :-

The material for this study consists of cases attending the medical college Hospital Jabalpur, Madhya Pradesh during the period from Aug.1989 to Dec 1990. The cases included are those which have been clinically diagnosed and radiological confirmed on the whom a exploratory laparotomy has been performed and the diagnosis was confirmed. The other materials used are Anesthetic agent for the anesthesia, surgical instrument, and surgical suture material.

METHODS:-

As the study was started with the objective to find the correct place of simple closure and definitive surgery as a method of treatment for perforated peptic ulcer also taking efforts were made in selecting the patients for primary definitive surgery from the cases of the perforated peptic ulcer admitted in the institution during the period mentioned above.

All the patients with perforated peptic ulcers under our care were included in the trial, patients were alternatively allocated to receive either simple closure (group- I) or definitive surgery (group-II) and a third or excluded group (group-III) consisted of high risk patients whose conditions dictated the definitive procedure impossible. The following will be considered high risk factors. Associated disease making a long operation undesirable, shock, purulent peritonitis or marked peritoneal soiling and friability of stomach and duodenum.

The following criteria were used for selecting the patients for primary definitive surgery.

1. Patients having previous history of peptic ulcer disease for any length of time.
2. Young patients ever without any previous history suggestive of peptic ulcer.
3. Patients general condition fit to undergo a major surgical procedure.
4. Patients without any underlying systemic disease.

Hematological and Radiological examination were done to find out hemoglobin percentage and pneumoperiotoneum respectively.

Exploratory laparotomy was performed on total 48 cases included in the present series. Final decision regarding the type of surgical treatment was made depending on the presence or absence of diffuse peritonitis and general conditions of the patient.

Simple Closure:-

The simple closure operation was performed through right paramedian or midline incision. The technique described by Rosoe Graham's for omental patch was followed. Peritoneal lavage and drainage was performed in patient.

Definitive Surgery:-

The following operation was performed in 8 cases, Vagotomy with gastrojejunostomy in 8 cases . All the operations in definitive surgery group were performed through a midline incision.

Vagotomy:-Bilateral abdominal truncal vagotomy was performed.

Gastrojejunostomy:- Retrocolic, no loop, no tension, Isoperistaltic posterior gastrojejunostomy with oblique stoma (Mayo's type) were performed using 4 layer technique.

A careful study was made regarding the postoperative, convalescence and complications. All the patients were discharged with the advice to attend the surgical outpatient department with a regular interval of 15 days and thus a follow up study was made for a period ranging from one month to 9 month. One patient of definitive surgery group was undertaken for endoscopy but no ulcer seen. All the patients under simple closure have been given Antacids along with one patient treated by peritoneal lavage and drainage.

RESULT:-

During the period of present study 48 patients were treated in surgical wards of this institution as a case of perforated peptic ulcer by different surgical methods and we found the following observation:-

1. Out of 48 cases, 08 cases (16.16%) were subjected to definitive surgery (Gastrojejunostomy and vagotomy), 38 cases (79.16%) simple closure and 02 cases (4.16%) peritoneal lavage and drainage. Table no. 02.
2. In this study it was found that incidence of peptic perforation was higher in middle age group i.e. between 31 to 40 years it was 16 cases (33.3%), between 21 to 30 years age group it was 12 cases (25%), 11 cases (22.9%) in the age group of above 50 years, 06 cases (12.5%) between 41 to 50 years of age and 03 cases (6.25%) perforation occurred in youngest age it is under 20 years. Out of patients showed male and female ratio was 95.83% (46 cases) and 4.16% (02 cases) respectively. Table no. 01.
3. The mortality rate irrespective of the type of treatment was 8.33%. The highest mortality rate of 50% was seen in peritoneal lavage and drainage group, 7.89% (03 cases) in simple closure group and no patient died in group of definitive surgery. Table no. 03.
4. The average period of hospitalization irrespective of type of treatment was 9.6 days. In this the range was 3 to 23 days in simple closure group, the average period was 13 days , 8 to 12 days in definitive surgery group, the average period was 10 days and 1 to 11 days in peritoneal lavage and drainage group, the average period was 06 days. Table no. 03.
5. There were maximum complication 65.78% (25/38) in simple closure, 100% (2/2) in peritoneal lavage and drainage and minimum 12.5% (1/8) in definitive surgery. Table no. 03.
6. Post operative fever was the commonest complication which occurred 58.3% (28/48) i.e.65.78 % (25/38) in simple closure, 100% (2/2) in peritoneal lavage and drainage and 12.5% (1/8) in definitive surgery group respectively. Next in order of frequency was found wound infection 16.6% (4/48) i.e. only in the simple closure group 21.05% (8/38) cases of perforated peptic ulcer treated by simple closure and no such complication in definitive surgery. Chest infection was 8.3% (4/48) i.e. 10.52 % (4/38) only occurred in simple closure. Table no. 04.

DISCUSSION:-

Forty eight cases of gastro duodenal perforation were treated by different surgical procedure. During the period of present study 280 patients were admitted in surgical wards for various gastro-intestinal perforation, out of these 48 (17.14%) where gastro duodenal perforation. Budharaj (1973)[9] reported that 35% of ulcer population suffers with this catastrophic complication of peptic ulcer.

CONCLUSION:-

Peptic ulcer is common condition and it's occurring more in male between age group 20-40 years. Perforation predominantly occurs in chronic ulcer at the pyloric part of stomach. In the present study mortality was nil in patients treated by definitive surgery where as mortality rate was 7.89 % in the group of patients treated by simple closure. Average duration of stay in hospital was lesser in the group treated by primary definitive surgery than simple closure. Complication rate was minimal in the patients treated by primary definitive surgery followed by simple closure and was maximum in peritoneal lavage and drainage group. However definitive surgery has no mortality, lower complication rate and short duration of hospital stay with excellent follow up results as compared to the other modalities of treatment. One must make an effort to perform primary definitive surgery in cases of perforated gastroduodeneal ulcer where ever possible.

In the present series maximum member of gastrointestinal perforation were seen in the age group of 21-40 years. Which correlated with the study of Rao S.S. (1959)[10], Waingoankar (1971)[8]. In the present series of 48 cases there were 46 males and 2 females which correlate with the study of Rao S.S.(1959)[10], Hamilton(1967)[11], Booth, R.(1971)[12].Table no.02.

In our study there were 30 cases (62.5%) of perforation at pyloric region , rest of all 18 cases (37.5%) were duodenal perforation which correlate with the study of Donaldson, G.A (1969)[13].

We subjected 16.16% of the total case of definitive surgery and 79.16% to simple closure. 4.16% cases were treated by peritoneal lavage & drainage and these patients were admitted in state of shock. Table no.03. Clinically, the patients selected for simple closure were similar to those in which definitive surgery was performed. only 8 cases 16.16% could be subjected to primary definitive surgery because remaining 38 case had signs of diffuse peritonitis at laprotomy .Two case were not fit for any type either simple closure or definitive surgery, they were admitted in a state of shock and toxic condition, were subjected to peritoneal lavage and drainage. In our series definitive surgery was possible in only 16.16% cases where as in other Jordan (1961) 69% [14], Booth ,R (1971) 35% [12], Hamilton J.E. (1967) 48.7% [11] and Krikpatric (1980) 5.5% [15].

The average complication rate irrespective of the type of treatment was 31.25% while it was minimum e.g. 12.5% in definitive surgery and maximum 100% in peritoneal lavages drainage group followed by 65.78% in simple closure group. In our series the complication rate is much higher than that seen in the other series. The high incidence rate of post operative fever which occurred in 58.3% cases was the commonest noticed, responsible for increased complication rate in general. The chest infection occurred in 8.3% cases. The most of the complication of post operative fever, wound infection occurred in simple closure group and peritoneal lavage and drainage group. In the patients treated by primary definitive surgery no one had mediastinitis or anastomotic leakage and wound infection. Hamilton (1967)[11] who also did not have such complication in their series, this straight way should remove the phobia of mediastinitis and anastomotic leak as natural sequelae in the patients treated by primary definitive surgery in cases of perforated peptic ulcer. Table no.04.

The mortality rate in present series indicates that in general , the mortality rate 8.33% low in comparison with other series reported, Henary , P.Royster (1963) 13.29%[16] , Jordan J.A. & Debakey (1961) [14]. The point which is very apparent is that the increase risk to life in primary definitive surgery can be ruled out because in a series with an average mortality rate of 8.33%, definitive surgery did not have mortality , while in simple closure was 7.89 % and 50% in peritoneal lavage and drainage . In our study there was no mortality in definitive surgery group which was 3.33% in the study conducted by sinha ,Sharma & Tiwari (1981)[17]. Table no.03.

The range of hospitalization was 3-23 days in the 48 cases of present series. The average duration of hospitalization was 9.6% days. The average duration of hospitalization was minimal (6 days) in peritoneal lavage and drainage group. Waingoankar (1971)[8] had the average duration of hospitalization 11 days, while Tiwari ,sinha ,Sharma (1981)[17] had it to be 15 days in his series. Thus it is obvious that the duration of hospitalization is less in definitive surgery as compared to simple closure operation and most certainly a second operation will be required at a later date. Table no: - 03.

Table no: - 01. Table showing number of cases treated by different type of surgical treatment, no. of death and distribution of cases based on age.

Age	Simple closure (%)	Definitive surgery (%)	Peritoneal lavage and drainage (%)	No.of death (%)	No. of cases(%)
Under 20 years	3 (7.89%)	-	-	1(33.33%)	3 (6.25%)
21-30 years	11 (28.94%)	1(12.5%)	-	-	12(25%)
31-40years	11 (28.94%)	5(62.5%)	-	4(6.25%)	16 (33.33%)
41-50 years	5(13.1%)	1(12.5%)	-	-	6 (12.5%)
Above 50 years	8(21.5%)	1(12.5%)	2(100%)	2(18.18%)	11 (22.91%)

Table no: - 02. Table showing sex incidence in case of perforated peptic ulcer.

Sex	No. of cases	percentage
Male	46	95.83%
Female	02	4.16%

Table no: - 03. Table showing no. of cases, duration of hospitalization, no. of complication and mortality rate in relation to the type of surgical treatment

Types of surgical treatment	No. of cases (%)	Duration of range in days	Average days	No. of complication	No. of mortality
Simple closure	38(79.16%)	3-23 days	13 days	25(65.78%)	03(7.89%)
Definitive surgery	08(16.16%)	8-12 days	10 days	1(12.5%)	-
Peritoneal lavage and drainage	02(4.16%)	1-11 days	6 days	2(100%)	01(50%)

Table no: - 04. Table showing types of complication in relation to the type of surgical treatment

Types of complication	Simple closure	Definitive surgery	Peritoneal lavage and drainage	Total No (%)
Chest infection	4(10.52%)	-	-	4(10.52%)
Wound infection	8(21.05%)	-	-	8(21.05%)
Leakage	-	-	-	-
Post operative fever	25(65.78%)	01(12.5%)	02(100%)	28(58.3%)

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