

## A Prospective Study on a Safer Technique of Closure of Peptic Ulcer Perforation Using Figure Of Eight Stitch

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**Abstract:** There are many methods for closing the perforated peptic ulcer. The technique of closure of perforation by figure of 8 stitch method has been found to be very effective in managing patients with this common problem.

**MATERIAL AND METHOD:** The present study was conducted in Unit III of Department of General Surgery, Government Rajaji hospital, Madurai from January 2017 to September 2017 on the cases of peptic ulcer perforation peritonitis

**RESULTS:** A total of 50 patients were included in the study. Out of these, 34 patients 68% were males and 16 patients 32% were females. Figure of eight is done for 34 patients of which male 25 females. Post operative leak was found only in one case of Figure of eight and 6 cases of omental patch developed leak, and the mortality was not found in cases which underwent Figure of eight repair, where one mortality was there in omental group.

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### I. Introduction:

Perforation Is A Common Complication Of A Peptic Ulcer disease. Patients With perforation Usually Complain Of Sudden onset Frequent Epigastric Pain Typically. For Many Persons It Is The first Symptom Of Their Peptic Ulcer Disease. For Some Of Their Perforations May Seal Spontaneously , However Operative Intervention Is Needed In Almost All Cases. Perforation Has The Highest Mortality Rate Of Any Complication Of Ulcer disease Approaching Almost 15% In Total. Postoperative Leak Is One among The Most Commonly Encountered Complication Following Gastro Duodenal Perforation Closure Varying In Incidence From 3 To 30 %. Postop Leak After Surgery Is A Persistent Problem much To The Noyance Of Surgeon And Patient Alike, In Spite Of Advances In Surgical Techniques And Hemostasis.

### II. The Outcome Of Patients Presenting With A Perforated Ulcer Depends On:

1. Time Delay To Presentation And Treatment—Recent Data Suggest increasing Delays For Surgical Treatment, In Part As A Consequence Of More Extensive Diagnostic Workup.
2. Site Of Perforation—Gastric Perforation Is Associated With A Poorer Prognosis.
3. Patient's Age—Elderly Patients Who Often Have Associated Comorbidities Have A Worse Outcome.
4. Presence Of Hypotension At Presentation (Systolic Blood Pressure < 100).

Recent Studies Show That In Carefully Selected Groups Of Patients A Perforation Can Be Treated Conservatively With Nasogastric Decompression And Antibiotics. This Approach Should, However, Be Used Only If A Water-Soluble Contrast Study Has Confirmed That The Ulcer Is Sealed With No Extravasation Of Contrast Into The peritoneal Cavity. Such Patients Should Be Followed Closely With Regular physical Examination And, If Their Abdominal exam Or Laboratory Findings Indicate Progressive Sepsis, Should Undergo Surgery. This Approach Is Generally Used For Individuals Who Have A Perforation Of 24 Hours' Duration, Are Stable, And Often Have Significant Comorbidities That Increase The Risk Of Surgical Interventions.

In This Study The Integrity Of The Closure Technique Using The Figure Of Eight Stitch Is Assessed And Compared To The Conventional Grahams Omental Patch Closure Technique. This Is Due To The Fact That In Patients With High Grade Septicemia Following Perforation The Omentum Is Often Found To Be Unhealthy And The Edges Of The Ulcer Are Indurated, So A Safe Method Of Using The Figure Of Eight Stitch Helps In Closure Of The Perforation And Decreases The Leak Rate, Further Morbidity And Mortality.

#### Aim of the study:

- To assess the efficacy and ease of Figure of eight method of closure of gastroduodenal ulcer perforation
- To statistically compare the procedure with the conventional Grahams Omental Live patch closure in terms of per-operative ease and post-operative outcome

### III. Methodology

This is a prospective study comprising 50 patients of perforation peritonitis over a period of six months from March 2017 to August 2017. In this present study, the clinical material consists of patients admitted with perforation peritonitis in the Department of General Surgery, at Government Rajaji Hospital, Madurai.

#### METHOD OF COLLECTION OF DATA:

##### Sample size:

The size of sample work is 50 cases

Patients with odd in-patient no. underwent figure of eight for gastroduodenal perforations

Patient with even in-patient no. underwent graham omental patch for gastroduodenal perforations

##### Inclusion criteria:

- Patients above 15 years of age
- Cases of perforation peritonitis diagnosed to have gastroduodenal perforation
- Patients consented for inclusion in the study according to the designated proforma.

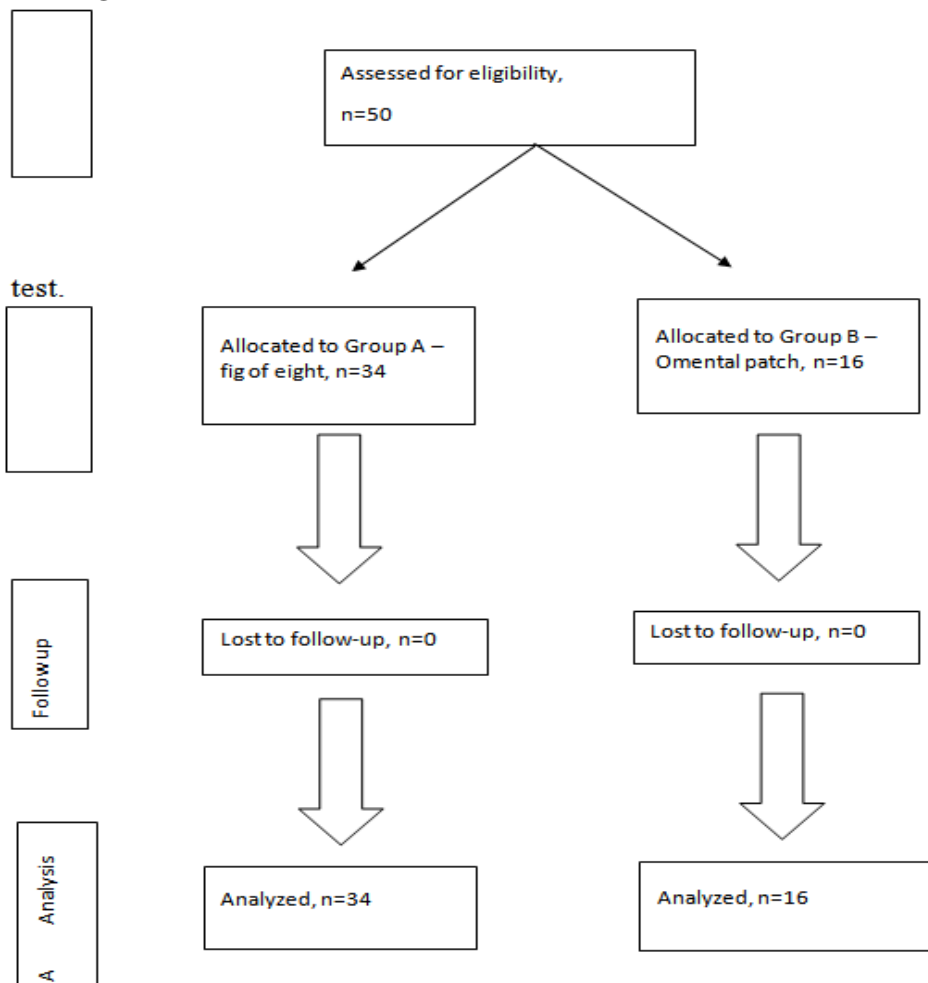
##### Exclusion criteria:

- Patients with perforation peritonitis in sites other than gastroduodenal perforation
- Patients who underwent non operative management
- Patients below 15 years of age
- Patients not consented for inclusion in the study

The data will be collected in prescribed PROFORMA where in it contains, particulars of the patient, clinical history, clinical examination and diagnosis, relevant investigations, and details of surgery.

The patients were followed for three weeks in post-operative period for postoperative leak, duration of surgery, postoperative morbidity and mortality. Ethical clearance has been obtained from ethical committee of Government Rajaji Hospital, Madurai, prior to conducting the study

#### CONSORT DIAGRAM



**Statistical analysis:**

In this study, the results of the two groups were compared and analyzed by using Chi-square

**IV. Results And Observation**

Procedure	No.of cases	Percentage
Figure of Eight	34	68.0
Omental patch	16	32.0
Total	50	100.0

In this study, age of the patients were more than 18 years. The youngest patient included in this study series was 18 years, and the eldest was 74 years old. Almost 60% of the patients were in >50 age group.

Age in years	No.of cases	Percentage
< 30	6	12.0
31 - 40	7	14.0
41 - 50	7	14.0
51 - 60	15	30.0
> 60	15	30.0
Total	50	100.0

So perforation more often seen in elderly age groups, especially more than 50 years can be due to long term use of nsoids or chronic alcohol consumption.

Sex	No.ofcases	Percentage
Male	34	68.0
Female	16	32.0
Total	50	100.0

68% of the cases were males and 32% were females. more of elderly age groups.

Age in years	Figure of Eight	Omental patch
< 30	3	3
31 - 40	5	2
41 - 50	4	3
51 - 60	13	2
> 60	9	6
Total	34	16

Sex	Figure of Eight	Omental patch
Male	25	9
Female	9	7
Total	34	16

A total of 4 cases underwent Figure of Eight repair of which 25 were males and 9 females.

Duration of surgery in minutes	Figure of Eight	Omental patch
< 1 hr (28)	20	8
> 1 hr (22)	14	8
Total	34	16
Mean	77.35	82.5
SD	49.07	50.86
p value	0.734 Not significant	

Duration of surgery does not have any significance as both the surgeries were having comparable limit, p value 0.734 not significant.

Post op Complications	Figure of Eight	Omental patch
Post op Leak	1	6
Mortality	0	3

**POSTOPERATIVE FOLLOW UP**

Leak	1/34 vs 6/16	0.003	Significant
Mortality	0/34 vs 3/16	0.029	Significant

Postoperative leak was found only in 1 case out of 34 cases, p value is 0.003, found to be significant. postoperative mortality was not found in any case of Figure of Eight repair, where 3 out of the 16 cases of omental repair had postoperative mortality. So in cases of patients presenting with perforation peritonitis in more than 6 hours Figure of Eight is superior to conventional omental patch in terms of mortality and postoperative leak

## V. Discussion

General outcome of a case of perforation peritonitis depends on many factors like age,time of presentation,size,site of perforation,availability of healthy omentum.

Obliteration of perforation using omental patches have shown more chances of postoperative leak and mortality rates, many studies have shown the efficacy of Figure of eight as a better alternative than omentum in cases where the patient's presentation is delayed and also there is no healthy omentum present. So the present study was undertaken to evaluate the efficacy of obliteration of perforation using Figure of eight as a better alternative than omentum in reducing incidence of postoperative leak.

In this study, 50 patients diagnosed as cases of perforation peritonitis, who underwent emergency surgery, were evaluated for time of presentation, duration of surgery, postoperative leak, mortality and postoperative hospital stay(group A – 34 Figure of eight patch, and group B – 16 omental patch ).

There were no significant differences between the two groups with regard to age, duration of surgery and postoperative hospital stay.

In group A, 34 patients who underwent Figure of eight repair, had their perforation closed after taking sufficient bites through and through the perforation using 2/0 vicryl

In group B, 16 patients underwent omental patch repair had their perforation closed by taking through and through bites first and placing omentum over it using 2/0 vicryl.

In all the patients, 2 32F ICD drain were kept one in the pelvis and the other near the perforation site. . The patients were followed for three weeks. Most of the patients went well without leak, and those who developed leak occurred in the first 5 days itself. In the present study we found that the Figure of eight technique significantly decreased the postoperative leak ( $P < 0.003$ ; significant), and mortality (p value  $< 0.029$ ).

## VI. Conclusion

In the present study, 50 patients have completed the study protocol. Of this 34 patients in group A (Figure of eight) and 16 patients in group B (omental patch). After analyzing the data and observations, The present prospective study demonstrated that the obliteration of gastroduodenal perforations using Figure of eight significantly reduces postoperative leak and mortality when compared with conventional omental patch.

However, the sample size in the current study is relatively smaller, so a larger study sample may be needed before any further conclusion can be made.

Although the study sample is small in this present study, it is still wise to recommend Figure of eight for patients presenting very late or when healthy omentum is not available.

## VII. Summary

“Comparison of surgical techniques of gastroduodenal perforation closure, prospective study of Figure of eight versus omental patch”

Conducted in department of general surgery at government rajaji hospital, Madurai from march 2017 to august 2017.

- ❖ Data collected in a prescribed proforma, analyzed and evaluated for duration of surgery, postoperative leak, postoperative hospital stay and mortality .
- ❖ Sample size was 50 patients in two groups, group A - 34 (Figure of eight) and group B – 16 (omental patch). All 50 patients completed study protocol.
- ❖ Of the 50 patients, 34 men with mean age 51 (S D -14) years and 16 women with mean age 50 (S D -13) years.
- ❖ Patients were followed up for 3 weeks.
- ❖ There was no significance in both groups regarding operative time and postoperative hospital stay.
- ❖ Regarding postoperative leak only 1 case out of the Figure of eight and 6 cases in omental group developed leak, p value 0.003.
- ❖ Regarding postoperative mortality, no cases in Figure of eight group, 3 cases in omental group had mortality, p value 0.029 .
- ❖ However, the sample size in the current study is relatively smaller, so a larger study sample may be needed before any further conclusion can be made

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