



## TWELVE YEARS EXPERIENCE IN MANAGEMENT OF PERFORATED PEPTIC ULCER IN UNIVERSITY HOSPITAL OF MARRAKECH ABOUT 1024 CASES

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### ABSTRACT

**Background:** the incidence of PPU has remained constant, simple closure being the mainstay treatment.

**Objective:** we present in this work the experience of our service in management of perforated peptic ulcer, specifying the epidemiological, clinical, therapeutic and evolutionary aspect

**Materials and methods:** this was a retrospective study of patients who underwent emergency surgery for PUP between January 2004 to December 2015, the patients bio-data, clinical, operative findings and treatment outcome were extracted and analyzed, all the cases of generalized peritonitis not traceable to peptic ulcer perforation were excluded from the study.

**Results:** A total of 1024 patients were included in this retrospective study, 1003 males and 21 females, their ages ranged from 12 to 80 years, with a mean of 37.5 years, common risk factors were smoking (81.44%), history of peptic ulcer disease (9.57%) and use of NSAIDs (6.54%), a significantly increased risk of perforation was evident during the daytime fasting month of ramadan, simple closure of the perforation was the most common procedure performed, median length of stay was 6 days, mortality and morbidity rates were 0.69%, 6.55% respectively.

**Conclusions:** PUP is a serious condition, requiring emergency surgical management, simple closure of the perforation was the most common procedure performed in our series.

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### INTRODUCTION

Peptic ulcer is a common disease in Morocco. Perforation is one of the common complications of peptic ulcer which presents the principal etiology of supra-mesocolic peritonitis, even poor prognosis due to late admission of our patients in specialized hospitals where the initiation of our work, we propose by this work, to make a contribution to the study of this disease, whose objectives are: to determine the epidemiological, describe the clinical and para-clinical signs related to perforated peptic ulcer. Describe the surgical techniques used in our service and determine the prognosis of our patients.

#### Patients and methods

Our study is a descriptive and analytical retrospective study, spread over a period of 12 years, from January 2004 to December 2015, 1024 cases of perforated peptic ulcers collected in the department of surgery of UHC Mohammed VI in Marrakech, All data were retrieved from the medical records department of the hospital. Data extracted from these records included bio-data, time of onset of symptom of perforations, clinical presentations which included clinical history, age of and sex of patient, past history of peptic ulcer disease, alcohol

intake, cigarette smoking, use of NSAIDs and other drugs such as steroids. Also extracted was the physical finding supporting generalized peritonitis, presence of shock, fever, conscious state, resuscitative measures, operative findings and treatment. Outcome of treatment, including length of hospital stay and post-operative complications (morbidity) and mortality were also noted.

#### Inclusion criteria

- All patients of both sexes, with a perforation of gastric or duodenal ulcer confirmed, were included in the study.
- Exclusion criteria:
- the patients with digestive perforations not located on the stomach or the duodenum
- traumatic perforations and tumor perforation

### RESULTS

During The period of our study, 1024 patients were admitted in our service in a table of peritonitis by perforated ulcer peptic, which represents 5.9% of the operated abdominal emergencies, it was 98% (1003) of males and 2 % (21) of females, the ages of patients ranged from 12 to 80 years; the

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peak incidence was in the 3th decade (30-39 yrs).

The majority of patients consulted within less than 48 hours after the onset of functional signs. The average time of consultation was 32,30 hours.

There was a positive past history of chronic peptic ulcer disease in only 98 patients (9.57%) , only 67 patients (6.54%) had a positive history of ingestion of non steroidal anti-inflammatory drugs (NSAIDS), 834 patients (81.44%) and 70 patients (6.83%) gave history of cigarette smoking and alcohol abuse respectively and 307 patients (29.98%) had admitted during the fasting month of Ramadan this number was significantly higher.

The commonest presenting symptoms were sever epigastric abdominal pain in 740 patients (72.26%), vomiting in 780 patients (76.17%), intestinal obstruction in 93 patients (9.08 %), gastrointestinal bleeding in 19 patients (1.85%), generalized abdominal rigidity is noted in 810 patients (79,10%).

Abdominal radiography without prepartion taking diaphragmatic practiced in all cases, revealed pneumoperitoneum in 967 patients (94.43%) , computerized tomography scan of the abdomen practiced in 56 (5.46%) cases having doubts diagnosis: atypical clinical presentation and lack of pneumoperitoneum on abdominal radiography ,which allows the diagnosis in these cases to bitch parietal abnormalities, the presence of pneumoperitoneum and intraperitoneal fluid effusion, the biological study fond leukocytosis in 770 cases (75,19%).

**Table 1** demographics and clinical parameters of patients with perforated peptic ulcer

|                                  | n    | %      |
|----------------------------------|------|--------|
| Age median (30-39)               | 319  | 31.15% |
| Gender:                          |      |        |
| Male                             | 1003 | 98%    |
| Female                           | 21   | 2%     |
| Pain duration:                   |      |        |
| ≤24h                             | 546  | 53.32% |
| >24h                             | 478  | 46.68% |
| Smoking history                  | 834  | 81.44% |
| Past history of peptic ulcer     | 98   | 9.57%  |
| History of ingestion NSAIDs      | 67   | 6.54%  |
| Cases in fasting month (Ramadan) | 307  | 29.98% |
| Epigastric pain                  | 740  | 72.26% |
| Generalized abdominal rigidity   | 810  | 79.10% |
| Pneumoperitoneum                 | 967  | 94.43% |

697 patients (68.06%) had laparotomy through an upper midline incision, laparoscopic repair was done in 327 cases (31.94%) seen the unavailability of laparoscopy in emergency block, after adequate resuscitation with intravenous fluids, antibiotics, nasogastric tube suction and vital signs monitoring. Surgical exploration objectified peritoneal fluid average abundance in 544 cases (53.12%), purulent in 887 cases (86.62%) with fibrinoid adhesion in 834 patients (81.44%), majority of the ulcers were duodenal in 959 patients (93.65%), In 382 patients (37.3%) the size of perforation was ≤5 mm diameter and in 642 patients (62.7%) it was >5 mm diameter. The conduct of our service has been changed since 2011 after a study in service and simple closure has become routine treatment of peritonitis by perforation of peptic ulcer and 51,07% (523) of our patients were operated by simple closure, later supplemented by a radical treatment of HP. truncal

vagotomy with pyloroplasty was performed in 501 patients (48.93%). A biopsy of ulcer edge was performed in all patients with gastric ulcer and malignancy was confirmed in 6 patients (0.58%).

**Table 2** ouperative and outcomes data

|                                 | n             | %                 |
|---------------------------------|---------------|-------------------|
| Size of ulcer:                  |               |                   |
| ≤5 mm                           | 382           | 37.3%             |
| 5-10 mm                         | 459           | 44.82%            |
| 10-20 mm                        | 151           | 14.74%            |
| >20 mm                          | 32            | 3.14%             |
| Site of ulcer:                  |               |                   |
| Stomach                         | 65            | 6.34%             |
| Duodenal: anterior              | 805           | 78.61%            |
| Posterior                       | 154           | 15.05%            |
| Peritoneal fluid:               |               |                   |
| Purulent                        | 887           | 86.62%            |
| Average abundance               | 544           | 53.12%            |
| Operation type                  |               |                   |
| Simple closure                  | 523           | 51,07%            |
| Truncal vagotomie +pyloroplasty | 501           | 48.93%            |
| Length of stay (days)           | Median 6 days | (range 4-21 days) |

In our series we deplore seven deaths representing 0.68%, whose 5 were operated by truncal vagotomie with pyloroplasty and 2 by simple closed, causes of death included septicaemia in 5 patients, severe pneumonia in 1 patients, pulmonary embolism in 1 patient. Median length of stay was 6 days (range 4-21), The resumption of transit has averaged the 3rd day, nasogastric tube suction was removed on average on 2<sup>nd</sup> day, abdominal drainage was removed between the 3rd and 5th day.

**Table 3** post-operative complications and their frequency rates

| Post-operative complications              | No of patients | frequency rates |
|---|----------------|-----------------|
| simple sequece                            | 957            | 93.45%          |
| Postoperative peritonitis                 | 32             | 3.1%            |
| Fistula directed                          | 19             | 1.95%           |
| Pulmonary infection                       | 14             | 1.36%           |
| Surgical site infection                   | 20             | 1.95%           |
| Bowel obstruction due to fibrous adhesion | 8              | 0.78%           |
| Recurrence of PPU                         | 15             | 1.46%           |
| Postoperative incisional hernia           | 19             | 1.85%           |
| Bulbar inflammatory stenosis              | 10             | 0.1%            |

## DISCUSSION

The perforations of peptic ulcers are not unusual at the University Hospital Mohamed VI of Marrakech, they have carried 5.9% of abdominal emergencies, this rate is statistically comparable to that described in the literature which brings a frequency between 3 to 17% [1,2,3,4].

According to national and African series [4,5,6] , we found that the perforation occurs frequently in young patients , while in Western international series [2,7,8,9] they occur in older patients, It was suggested that the wider use of antacids in western countries and increasing life expectancy in developed countries, explain the lower incidence of perforated ulcer in young patients and its prevalence in the elderly.

The perforations of peptic ulcer mainly concern men in our series (98%), this higher incidence in the mal gender has been observed by other studies [2,4,5,7,8,9], this can be explained by the prevalence of smoking in the male population in our context and psychological factors.

Only 9.57% of patients in our series had a positive past history chronic PUP, this is different to the others series, this is due in

part to the frequency of self-medication and the many drug prescriptions without endoscopic diagnosis before any digestive disorder. Moreover, these diagnostic difficulties of ulcer disease are also linked to the lack of appropriate logistics (endoscopes, X-ray machine) in most developing countries. Several factors appear to be implicated in the onset of ulcer perforation, in our series the smoking rate is 81,44%, this result verified the results of the literature. The confrontation of our consumption rates of NSAID, with other national and African studies including that [5, 6,10,11] has identified one NSAID consumption rates close to that of our study, International western studies show higher rates, including those of [8,12,13], this can be explained by the increase in life expectancy in developed countries or Elderly patients are treated with NSAIDs in chronic inflammatory diseases.

In our study, as well as for other series, Ramadan daylight fasting is associated with a higher incidence of ulcer perforation than is seen in other non fasting months of the years, this can be explained by the gastric hyperacidity caused by fasting.

In our study, the abdominal pain was found in all patients, headquartered epigastric was found in 740 patients (72.26%), a percentage which enhances the data of most national and foreign studies, contracture was found in 79,10% of cases in accordance with the results obtained by [2,5,4,10,11,14]

Our study has reported a similar rates of pneumoperitoneum on chest X-ray compared to those [4,5,15,16,17]. Duodenum location were common in our series 93.65% of cases , this is similar to as described in large series [18,19,20] our incidence of gastric malignant was low compared to other reports .

51,07% of our patients were operated by simple closure; this rate is comparable to those reported by several authors including [4,6,8,20,21,22]. After the surgery all patients operated by simple closure, received medical treatment for the eradication of *Helicobacter pylori*, with support for the compliment gastrology service.

In our series, our median length of stay of 6 days is comparable to literature [23,24], our rates of mortality (0.69%) and morbidity (6.55%) was similar to national and African series but was lower than that reported in Western studies , the reason for lower mortality and morbidity in our study could be explained to younger age, less co-morbidity and less patients with pre operative shock.

## CONCLUSION

Perforated peptic ulcer disease continues to be encountered frequently in our environment especially occurring predominantly in young males, most of whom are not known to suffer from PUD previously , The simple closure associate to a medical treatment for eradicate *H.pylori* , is our technique of choice , encouragement on stopping smoking of cigarettes and self-medication with a healthy diet can help prevent this condition , The improvement of the technical platform will get better results.

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