

DIAGNOSIS AND TREATMENT OF PERFORATION OF GASTRIC-DUODENAL ULCER AT 103 MILITARY HOSPITAL IN THE PERIOD OF 2013 - 2018

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SUMMARY

Objectives: To determine clinical characteristics and treatment results of perforation of gastric -duodenal ulcer at 103 Military Hospital in the period of 2013 - 2018. Subjects and methods: Recovery and clinical descriptions of 254 patients who underwent operation for perforation of gastric-duodenal ulcer were collected. Results: Average age: 52.7 ± 16.8 , Male/female: 4.5/1. Symptoms at hospitalization: 100% of patients had a pain at hypogastric area, 88.2% experienced acute onset of pain. 88.6% had "belly hard like wood" and 77.9% had abdominal wall reaction. 47.6% of all patients had a history of stomach and duodenal ulcers. Free air under the diaphragm was observed in 94.9% of cases on X-rays. Patients who were close perforation holes got 93.7%. 5.1% underwent Newmann drain insertion and 1.2% received emergency laparotomy. Average length of hospital stay after surgery: 5.1 ± 2.4 days. Conclusion: Perforation of gastric-duodenal ulcer is a surgical emergency, and stitching the hole of ulcer method (ulcer repair) is usually performed to treat it.

** Keywords: Gastric-duodenal ulcer; Perforation; Diagnosis; Treatment.*

INTRODUCTION

Perforation of gastro-duodenal ulcer is a common abdominal surgical emergency, accounting for 3 - 5% of all abdominal surgical emergencies and is the second common cause of peritonitis after appendicitis [2, 4, 5]. This disease is often found in men aged 30 - 40 and in cold climate especially with changeable weather. 90% of perforation of the superior part of duodenum occurs. Perforation of gastro-duodenal ulcer is easy to diagnose due to typically occurs clinical and paraclinical symptoms. With the development of medicines for gastro-duodenal ulcer such

as PPIs, H2-histamine receptor inhibitors and the development of laparoscopy, the treatment for perforation of gastric-duodenal ulcer has significantly improved. To evaluate the result of treating perforation of gastric-duodenal ulcer in the period of 2013 - 2018, we conducted this study at 103 Military Hospital.

SUBJECTS AND METHODS

Between 2013 January to 2018 May at 103 Military Hospital, 254 patients were diagnosed with perforation of gastric-duodenal ulcer based on clinical symptoms, X-ray, abdominal CT and laparoscopy. The data were analyzed with Excel.

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RESULTS AND DISCUSSION

1. Patients' characteristics.

Average age: 52.7 ± 16.8 years. The mean age was 40 - 60 (range 12 - 102), explaining 48% of patients, patients aged > 60 occupied 28.7%. In Ngo Minh Nghia's study, mean age was 48.3 ± 13.5 and 44.14 ± 15.4 in Ho Huu Thien's [3, 4].

There were 208 male patients (81.9%) and 46 female patients (18.1%). The male/female ratio was 4.5:1. The disease is more common in males than in females due to unhealthy lifestyle such as alcohol consumption and smoking habit, etc...

2. Clinical, paraclinical features/symptoms.

* *Time from onset of an abdominal pain to hospital admission (n = 254):*

≤ 6 hours: 156 patients (61.4%); 6 - 12 hours: 41 patients (16.1%); 12 - 24 hours:

32 patients (12.6%); > 24 hours: 25 patients (9.8%).

In 61.4% of cases, time from the onset of abdominal pain to hospital admission was less than 6 hours. In 9.8% of cases, it took more than 24 hours. This could be explained by the fact that severe pain requires an early hospital admission. This rate in Ho Huu Thien's research was 77.5% less than 6 hours [4].

* *Time from hospital admission to operation (n = 254):*

≤ 6 hours: 178 patients (70.0%); 6 - 12 hours: 62 patients (24.4%); > 12 hours: 14 patients (5.6%).

In 70% of cases, time from hospital admission to operation was less than 6 hours. In 5.6% of cases, it took more than 24 hours. All patients who were operated 24 hours after admission had atypical symptoms.

Table 1: Clinical symptoms at admission (n = 254).

| Clinical symptoms at admission | | Numbers of patients | % |
|--|--------------------------------|---------------------|------|
| Abdominal pain | Epigastric pain | 30 | 11.8 |
| | Sudden, severe epigastric pain | 224 | 88.2 |
| | Widespread abdominal pain | 208 | 81.9 |
| Abdominal rigidity | | 225 | 88.6 |
| Abdominal muscle reaction | | 198 | 77.9 |
| Blumberg sign (+) | | 208 | 81.9 |
| Loss of liver shadow | | 112 | 44.1 |
| Pulse > 100 beats/min | | 40 | 15.7 |
| Patients with history of gastro-duodenal ulcer | | 121 | 47.6 |

100% of patients had epigastric abdominal pain, which was valuable for diagnosis. They are common clinical symptoms of perforation of gastric-duodenal ulcer. According to Tran Binh Giang, the rate of gastric-duodenal ulcer perforation with sudden and severe pain was 88.8%, with abdominal muscle reaction was 92% and our record showed the same results as Druart M.I, Cougard P's findings [1, 7].

Table 2: Paraclinical symptoms.

| Paraclinical symptoms | | Numbers of patients | % |
|--|-----------------|---------------------|------|
| Abdominal X-ray (n = 254) | | 241 | 94.9 |
| Abdominal X-ray with air-inflated stomach (n = 18) | | 16 | 88.9 |
| Abdominal cavity ultrasound (n = 254) | Abdominal fluid | 198 | 77.9 |
| | Abdominal gas | 83 | 32.6 |
| Abdominal computer tomography (n = 14) | Abdominal fluid | 14 | 100 |
| | Abdominal gas | 14 | 100 |

Paraclinical symptoms: free air under the diaphragm in the abdominal X-ray is an important sign. This study showed that 94.4% of patients had this sign on the first time taken the X-ray. This rate was the same as Tran Binh Giang's with 92%, and higher than other authors' findings such as Lemaitre J (47.2%), Aali (86.6%) [1, 6, 8]. A number of patients who didn't have this sign were appointed to take X-ray after addition of gastric air, or abdominal CT (CT is usually for old and weak patients). 16/18 patients had free air under the diaphragm in X-ray after addition of gastric air, 14/14 patients had air in abdominal cavity in CT.

3. Treatment and result.

Table 3: Pathology appreciation during surgery (n = 254).

| Pathology appreciated during surgery | | Numbers of patients | % |
|--------------------------------------|--------------------------------|---------------------|------|
| Ulcer | New | 113 | 45.5 |
| | Chronic | 141 | 55.5 |
| Liquid in abdominal cavity | Hepato-renal pouch of Morrison | 254 | 100 |
| | Pouch of Douglas | 250 | 98.4 |
| | Spleen cavity | 134 | 52.8 |
| Ulcer size | < 1 cm | 202 | 79.5 |
| | 1 - 2 cm | 42 | 16.5 |
| | > 2 cm | 10 | 4.0 |
| Location of perforation | Superior part of duodenum | 240 | 94.4 |
| | Antrum | 8 | 3.1 |
| | Lesser curvature | 4 | 1.5 |
| | Others | 2 | 0.8 |

45.5% of patients had a new ulcer, 55.5% of patients had chronic ulcer. According to Tran Binh Giang, this rate was 75% while chronic stomach ulcer's rate was 25% [1].

Table 4: Methods of treatment (n = 254).

| Methods of treatment | Laparoscopic surgery | Open surgery | Total |
|-------------------------|----------------------|--------------|-------------|
| Ulcer suturing | 200 | 38 | 238 (93.7%) |
| Newmann drain insertion | 7 | 6 | 13 (5.1%) |
| Emergency gastrectomy | 1 | 2 | 3 (1.2%) |
| Total | 208 (81.9%) | 46 (18.1%) | 254 |

The average surgery time: 71.1 ± 26.8 minutes (30 - 240).

Table 5: Relationship between ulcer and treatment (n = 254).

| Treatment \ Ulcer | Feature | | Size | | | Total |
|-----------------------|---------|---------|--------|----------|--------|-------------|
| | New | Chronic | < 1 cm | 1 - 2 cm | > 2 cm | |
| Suturing | 112 | 126 | 200 | 34 | 4 | 238 (93.7%) |
| Newmann drainage | 0 | 13 | 2 | 6 | 5 | 13 (5.1%) |
| Emergency gastrectomy | 1 | 2 | 0 | 2 | 1 | 3 (1.2%) |
| Total | 113 | 141 | 202 | 42 | 10 | 254 |

Table 6: Relationship between age and treatment (n = 254).

| Treatment \ Age | < 40 years | 40 - 60 years | > 60 years | Total |
|-----------------------|------------|---------------|------------|-------------|
| Suturing | 58 | 117 | 63 | 238 (93.7%) |
| Newmann drainage | 1 | 3 | 9 | 13 (5.1%) |
| Emergency gastrectomy | 0 | 2 | 1 | 3 (1.2%) |
| Total | 59 | 122 | 73 | 254 |

Patients with ulcer size < 1 cm made up 79.5%; > 2 cm was present in 4%. Patients with ulcer size < 1 cm were often treated with suturing, and Newmann drain insertion were performed for patients with ulcer size > 1 cm. Condition of abdominal cavity: 100% of cases had fluid in the hepato-renal pouch of Morrison, 98.4% in the pouch of Douglas, 52.8% in the splenic cavity. Locations of ulcer are commonly found at the superior part of duodenum (94.4%), at antrum 68.8%

according to Do Son Ha and 90.8% in Nguyen Cuong Thinh's [2, 5].

Methods of perforation treatment: 93.7% were treated with suturing and a large number of them were sutured in laparoscopy. Open surgery was usually performed for old and weak patients. Newmann drain insertion and emergency gastrectomy were only performed on a few patients (5.1% and 1.2%, respectively). The average time of operation was short, approximately

71.1 ± 26.8 mins (range 30 - 240 mins). Suturing the perforation is the most common method. This study showed that patients with ulcer size < 1 cm or a new ulcer were treated with suturing.

* *Early result after operation (n = 254):*

Patients were fatted after operation in about 3.6 ± 1.5 days, removed the nasogastric tube after about 4.6 ± 1.5 days, and fed orally after about 5.6 ± 1.8 days, removed abdominal cavity drains after about 5.3 ± 2.1 days, discharged from hospital after about 5.1 ± 2.4 days.

CONCLUSION

Perforation of gastric-duodenal ulcer is a common surgical emergency, and is easy to diagnose due to typical symptoms. This study showed that 100% of patients had abdominal pain (88.2% with a sudden and severe pain), 88.6% of patients had abdominal rigidity, 77.9% with abdominal muscle reaction and 47.6% with a history of gastric-duodenal ulcer. Free air under the diaphragm on an abdominal X-ray was present in 94.9% of cases. Suturing was the most common method, besides Newmann drain insertion and emergency gastrectomy. Length of stay in hospital is short, about 5.1 ± 2.4 days.

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