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Research Article

### NEED OF EMERGENCY SURGERY FOR DUODENAL ULCER BLEEDING IN MODERN TIME OF OPERATIVE MEDICAL MANAGEMENT OF PEPTIC ULCER DISEASE

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**Abstract:**

**Aim:** To supervise and share experience in the treatment of duodenal ulcer bleeding, which is a rare surgical procedure during comprehensive treatment.

**Study design:** case series.

**Place and duration:** In the Department of Surgery Holy Family Hospital Rawalpindi for one year duration from March 2019 to March 2020.

**Method:** Retrospective study of 14 patients treated with duodenal ulcer bleeding. Data were obtained from the hospital register and patient files. All patients initially reported to the hospital's gastrointestinal ward.

Bleeding from duodenal ulcer was diagnosed in all patients by endoscopy. Surgical indications after resuscitation were the inability to stop bleeding medically or by endoscopic means, 6 units of blood demand during follow-up, unstable patients, very low hemoglobin and a rare blood group.

**Results:** The average age in this group was 46.11. (79%) of patients were subjected to emergency in shock. Long-term non-steroidal anti-inflammatory drugs (NSAIDs) were given to 6 (43%) patients. In endoscopy, 11 (79%) patients had a posterior bulber ulcer, and 3 (23%) had an anterior ulcer. During the surgery, it was observed that only 1 of these 3 patients had anterior ulcer and the other 2 had a posterior ulcer. Posterior suture ligation (SL) was performed along with bilateral trunkal vagotomy (TV) and pyloroplasty (PP). For anterior ulcer duodenostomy closure taking ulcer in suture line was done. Re-bleeding was observed in 2 (14%) patients and one of them had excision of the ulcer before resection and bilroth-II reconstruction in the other patient and embolism of the gastro-duodenal artery aneurysm in the other. Other postoperative complications were pneumonia (22%), wound infection (22%), arrhythmias (7%) and duodenal stump leakage (7%).

**Conclusion:** During this period of medical and endoscopic progression, surgical intervention plays a decisive role in detecting bleeding from duodenal ulcer with acceptable morbidity and mortality.

**KEY WORDS:** Duodenal ulcer, bleeding, rescue operation.

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**INTRODUCTION:**

The history of peptic ulcer treatment is one of the greatest stories in the history of general surgery<sup>1-2</sup>. Surgeons who are pioneers in peptic ulcer control procedures and techniques have achieved historic intervals in our discipline<sup>3-4</sup>. Surgical intervention in uncomplicated peptic ulcer disease has been significantly reduced due to the introduction of advanced endoscopic and hemostatic measurements, such as H2 receptor antagonists, protein pump and double-layer inhibitor, heating probe, laser photocoagulation, etc. However, many studies have shown a number of acute cases<sup>5-6</sup>. The surgical procedures associated with complicated peptic ulcer have not changed. Recent studies suggest that the increased use of non-steroidal anti-inflammatory drugs (NSAIDs), antiplatelet / anticoagulant therapy causes a significant increase in hospital admissions due to a complex peptic ulcer (bleeding or perforation)<sup>7-8</sup>. This study was conducted to control and share our experience in the treatment of duodenal ulcer bleeding during a comprehensive period of medical and endoscopic treatment to highlight the need for surgical intervention and the associated morbidity and mortality.

**METHOD:**

Retrospective study of 14 patients treated with duodenal ulcer bleeding. Data were obtained from the hospital register and patient files. All patients initially reported to the hospital's gastrointestinal ward.

Bleeding from duodenal ulcer was diagnosed in all patients by endoscopy. Surgical indications after

resuscitation were the inability to stop bleeding medically or by endoscopic means, 6 units of blood demand during follow-up, unstable patients, very low hemoglobin and a rare blood group. Patients in this group were operated due to uncontrolled bleeding. Bleeding duodenal ulcer was diagnosed in all patients. Relative indications for early intervention were: hemoglobin below 8 g / dl at the age of admission over 50 years of age, rare blood group, bleeding after a period of bleeding controlled by medical or endoscopic means in high-risk groups. All patients initially included in the gastrointestinal service were asked to have a surgical consultation in accordance with the hospital protocol.

**RESULTS:**

There were 11 men and 3 women (4: 1 ratio). The average age of the group was 46 years (20-65 years). Eleven (79%) patients admitted to the emergency department and 3 (22%) reported to the gastroenterology department with melena complaints, general weakness and severe anemia (<7 g / dl). All emergency patients had 7 (50%) hememesis and melena, 3 (22%) in shock and 4 (29%) in shock. Only 3 (22%) patients had upper abdominal pain (Table I). Six (43%) patients had prolonged non-steroidal anti-inflammatory drugs for joint pain, 4 (29%) had osteoarthritis and 2 (14%) rheumatoid arthritis. 4 (29%) patients received anticoagulants due to coronary heart disease, and 1 (7%) patients received long-term hakim medication for generalized weakness and infertility. Comorbidities were diabetes in 4 (29%) patients, ischemic heart disease in 3 (22%) patients and 1 (7%) chronic obstructive pulmonary disease.

**Table I. Presenting Features / Complaints**

Presentation	No. of patients	%
<b>Shock*</b>	<b>11</b>	<b>79</b>
<b>Hematemesis &amp; Melena</b>	<b>7</b>	<b>50</b>
<b>Hematemesis Alone</b>	<b>3</b>	<b>22</b>
<b>Hematemesis Alone</b>	<b>4</b>	<b>29</b>
<b>Upper Abdominal Pain</b>	<b>3</b>	<b>22</b>

\* Pulse > 100/min, B.P Systolic < 100mmHg, continuous bleed and Oxygen Saturation < 90

Postoperative mortality was defined as death on admission to hospital. 11 (79%) patients had posterior bulber ulcer, and 3 (22%) patients had anterior ulcer by endoscopy.

Eleven patients (79%) who had an emergency response after resuscitation and stabilization were examined. In two patients (14%), bleeding was controlled by epinephrine injection, but on the second and third day it was bleeding and operated. Three (22%) patients had a visible vein with a constant outflow, and six (43%) had large clots that were difficult to access for lateral ulcers. Patients

injected with epinephrine were operated, and patients with visible vessels and clots were operated on 2-6 hours after admission and resuscitation. Three (22%) patients who came to the gastroenterology department in OPD were initially treated in these departments. However, on the third day after admission, major bleeding occurred and were operated urgently (5 units of blood required for

resuscitation).

All patients were operated on with informed high-risk consent. Duodenopylorotomy was performed in 11 patients (79%) diagnosed with posterior ulcer, and duodenotomy was performed in 3 patients (22%) diagnosed with anterior ulcer endoscopy. However, this only had one anterior front ulcer, while the other two incisions were widened to embrace the pilot because the ulcers were posterior. However, in this only one had anterior ulcer whereas in the other two incisions were extended to include pylorus as the ulcers were posterior.

In a patient who previously had an ulcer, duodenotomy was closed by taking a suture ulcer and no additional procedure was performed. In patients with posterior ulcer suture ligation of vessel in cephalic, caudal and medial quadrant along with bilateral truncal vagotomy and pyloroplasty was done. In 3(22%) patients antrectomy with Billroth II reconstructive and truncal vagotomy was done as there was extensive scarring of pyloroduodenal region. In 1(7%) patient suture ligation of ulcer through duodenostomy was done. This was an elderly patient (> 60 years) who had recent history

myocardial infarction. No additional procedure was undertaken. All patients were given intravenous omeprazole after surgery. Two elderly patients were ventilated 24 hours after surgery.

Re-bleeding in 2 (14%) patients, pneumonia 3 (22%), wound infection 3 (22%), arrhythmia 1 (7%) and duodenal trunk leakage 1 (7%) were the main postoperative complications (Table II). Leakage of the duodenal trunk was observed in the patient with a large ulcer and treated conservatively. Two patients who rebelled were re-admitted on days 15 and 36 after surgery. The one who introduced himself 15 days after the surgery was an elderly woman with a very high risk of anesthesia and was treated conservatively. Her angiography showed an aneurysm of the gastro-duodenal artery, which was successfully embolized. The second patient was re-scanned and there was no bleeding site. He rebelled on the third day after the party and because of his condition could not be included. He was re-examined in an emergency and was managed by excision of antrectomy ulcer and reconstruction of Billroth-II. However, it was 7 days after surgery due to pulmonary complications.

**Table II. Pos-operative Complications**

The other seven patients were regularly monitored and coped well with long-term use of the proton pump inhibitor, *Hylicobacter* eradication and some correction in antiplatelet therapy due to coronary heart disease.

Complications	No. of patients	%
Re-bleeding	2	14
Pneumonia	3	22
Wound Infection	3	22
Arrhythmia	1	7
Duodenal Leak	1	7

## DISCUSSION

Bleeding due to complicated peptic ulcer disease is a major cause of major upper gastrointestinal bleeding. According to studies by Zullo and Hassan from Italy, NSAIDs and *H. Pylori* infection are important etiopathological factors associated with peptic ulcer bleeding. They also emphasized that the risk of bleeding is higher with NSAIDs than *H. pylori* ulcers<sup>9-10</sup>. In addition, 43% (n = 6) of patients in this study received long-term NSAIDs and / or antiplatelet therapy of 29% (n = 4).

The literature is full of research supporting the control of endoscopic hemoclip, heating probe and laser bleeding. However, there is no such experience for our patients<sup>11-12</sup>. In the Sheikh Zayed hospital, a heating probe serves as a temporary measure. In a consensus study conducted by the National Institute of Health in 1989, it was found that he preferred a

heating probe for use in multipolar cauterization and endoscopic treatment of duodenal ulcer bleeding. However, despite all possible measures, some patients will still need surgery to control bleeding<sup>13</sup>. There is currently no consensus on the best emergency surgical intervention procedure. Pyloroplasty (PP) and truncal vagotomy and suture ligation (SL) in authors are a good procedure with better long-term results. In 13 patients with posterior bulb ulceration, 9 patients were treated with SL, PP and TV and behaved well during follow-up, except for those who returned to bleeding. However, when the duodenal area has a wide scar, gastrectomy with Billroth-II reconstruction is a better and feasible option, but treating the duodenal stump is often difficult. Xing Wu made a similar observation that he published modified technique results including the use of omental patches around partial gastrectomy, duodenostomy and tubular

duodenostomy<sup>14</sup>.

The role of surgery has probably changed. Their goal is no longer to heal the ulcer flaw, but to urgently control bleeding before healing the ulcer with treatment. Brehant demonstrated and strongly supported conservative surgical treatment of recurrent duodenal bleeding with continuous proton pump inhibitors. His research also confirms the use of conservative treatment in ulcers with low bleeding rates. However, more research is needed before this concept can be addressed. The Cheung and Lau series from China supports endoscopic hemostasis even in large ulcers (> 2 cm) in older people with concomitant diseases. The preferred treatment for bleeding from anterior duodenal ulcer is endoscopic treatment and surgical intervention of the posterior ulcer after the first resuscitation and stabilization by the authors. Patients are operated first if there is continuous exudate from the source, a sticky clot in the ulcer, resuscitation failure, rare blood group, advanced age, bleeding during the same admission after the first medical / endoscopic bleeding control. In fact, these are generally accepted intervention criteria<sup>15</sup>.

A randomized controlled study by Bertran Millat and colleagues showed that ulcer resection and gastrectomy were the preferred bleeding procedure because postoperative mortality and morbidity are lower, and overall mortality and duodenal leakage are the same. In contrast, several retrospective studies have shown that excision of the ulcer is better than excision of the stomach with a vagotomy and drainage with excision of the ulcer. The best treatment option will be determined based on the surgeon's experience and careful selection of the patient. Always remember the main purpose of controlling bleeding. Persistent or recurrent bleeding after the first treatment is associated with a mortality in the range of 10% to 44%, depending on the response rate of the first treatment.

### CONCLUSION:

Surgical intervention plays a specific role, despite advanced medical and endoscopic treatment. Given the severity (bleeding) of complicated duodenal ulcer, this leads to early bleeding cessation with acceptable morbidity and mortality.

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