A STUDY OF DUODENAL PERFORATION IN DIABETICS

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ABSTRACT.
The aim of this study is to identify incidence of duodenal perforation in diabetic patients. The study was conducted in Department of General Surgery, Baqai Medical University hospital, Karachi, Pakistan, from April 2006 to March 2012. The study included 18 patients with duodenal perforation who underwent emergency Laparotomy, duodenorrhaphy and omentoplasty. The diagnosis was based on History and physical examination, chest radiograph, and ultrasound of abdomen.
Out of 18 patients all were non obese, thin with average built. All were non diabetics, 13 had H/o dyspepsia, and fifteen were smokers with bad dietary habit. 16 had classical presentation where as two had unusual presentation. All have gas under diaphragm on chest radiograph and intraperitoneal fluid on U/s abdomen. Duodenal perforation is usually uncommon in diabetics
Keywords. Duodenal perforation, diabetes mellitus.

INTRODUCTION:
Due to the widespread use of gastric antisecretory agents the incidence of perforated peptic ulcer has changed; NSAIDs and H-Pylori appear to be responsible for most of these perforations². The classical presentation of the perforated peptic ulcer is observed less commonly than in the past. Perforation developed in 5% of ulcer patients usually from ulcer on the anterior wall of the duodenum. Zollinger Ellison disease should be considered in patients who present with ulcer perforation. The death rate from gastric ulcer was approximately 20% as against 6% from duodenal ulcer¹,7.
Major risk factors are shock, age, sepsis and those who have been treated with large doses of steroids. The incidence of perforation of duodenal ulcer in young and middle aged patients appear to be falling. Genetic factors may be involved to a limited degree¹,2,12.

MATERIAL & METHODS.
Between April 2006 to March 2011, 18 consecutive patients were operated for duodenal perforation in the Baqai Medical University General Surgery Department, Karachi. All patients underwent primary repair and omentoplasty for duodenal ulcer perforation after resuscitation. In all patients only one type of operation was performed in which the age ranged from 37-66 years. Patients had a previous history of peptic ulcer and took medication at least for 3 months. Use of tobacco and NSAIDs for prolong period and chronic steroid therapy was noted. Serious medical problems such as Insulin dependent diabetes, chronic obstructive and restrictive pulmonary disease, chronic renal insufficiency, and chronic liver disease were examined.
Thorough clinical assessment was employed in all patients. All patients underwent X-ray chest PA view, plain X-ray abdomen upright and lying. Ultrasound of abdomen and pelvis. CBC, U/E, Serum amylase, Creatinine, ECG, urine examination, LFTs, AP & APTT, HbsAg and HCV was performed in all patients. At the time of admission, hypotension and duration of perforation was given special emphasis. Socioeconomical status and dietary habits were paid especial attention.
All patients resuscitated before operation, NG
intubation, urethral catheterization, antibiotics, gastric anti-secretory agents, NPO and blood arrangement was employed in all Patients. Exploratory laparotomy through right permedian incision and duodenorrhaphy and omentopexy and performed in all patients. In all cases an ulcer was found on anterior wall of first part of duodenum. Post operatively liquid started on bowel movement and semisolid started the next day.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyspepsia</td>
<td>13</td>
</tr>
<tr>
<td>Peptic ulcer disease</td>
<td>NIL</td>
</tr>
<tr>
<td>NSAIDs</td>
<td>9</td>
</tr>
<tr>
<td>Chronic steroid therapy</td>
<td>NIL</td>
</tr>
<tr>
<td>Server concomitant disease of heart, Lung and Kidney</td>
<td>NIL</td>
</tr>
<tr>
<td>Diabetics</td>
<td>NIL</td>
</tr>
<tr>
<td>Thin overage built</td>
<td>18</td>
</tr>
<tr>
<td>Obese</td>
<td>NIL</td>
</tr>
<tr>
<td>Smokers</td>
<td>16</td>
</tr>
<tr>
<td>Bad dietary habit</td>
<td>18</td>
</tr>
<tr>
<td>Socio economically- Low middle</td>
<td>18</td>
</tr>
<tr>
<td>Classical presentation</td>
<td>16</td>
</tr>
<tr>
<td>Unusual presentation</td>
<td>2</td>
</tr>
<tr>
<td>Shock</td>
<td>NIL</td>
</tr>
<tr>
<td>Long standing perforation</td>
<td>NIL</td>
</tr>
<tr>
<td>Leukocytosis</td>
<td>18</td>
</tr>
<tr>
<td>X-Ray Chest PA- Gas under diaphragm</td>
<td>18</td>
</tr>
<tr>
<td>USG Abdomen – Intra peritoneal fluid</td>
<td>18</td>
</tr>
<tr>
<td>S. Amylase raised</td>
<td>4</td>
</tr>
<tr>
<td>Urea / Electrolytes, Creatanine – Derage</td>
<td>3</td>
</tr>
</tbody>
</table>
RESULTS:
A total of 18 patients were admitted through Emergency department and all underwent laparatomy (duodenorrhopy and omentoplasty)
Thirteen patients had dyspepsia, peptic ulcer as a known cases, were, found to be absent in all patients.
Nine Patients had a history of NSAIDs use. All had an average built and 15 were smokers. All 18 patients had a bad dilatory habit and all belonged to low / middle socio economical group. Sixteen patients had classical presentation, where as 2 had unusual presentation.
All patients showed gas under diaphragm on X – ray chest, Ultrasound of abdomen revealed intraperitoneal fluid in all patients. In 4 patients the serum amylase was minimally raised, three patients had minimal deranged urea and creatinine. All patients had a raised WBC. None of these patients were diabetic.

DISCUSSION:
Duodenal perforation constitutes a surgical emergency with an associated mortality rate of 5-10%. Although the serious complications of Peptic ulcer had diminished, the surgical closure of perforation remains the mainstay of treatment of the condition. Perforations developed in 5% of ulcer patients, usually on the anterior wall of the duodenum. NSAIDs and H-Pylori are the important etiological factors. H-Pylori infection was associated in more than 90% of patients. Cigarette smoking predisposes the peptic ulceration and increased the relapse rate after treatment. Diabetes Mellitus (insulin dependent) causes Gastropareses, autonomic neuropathy a chronic condition characterized by early satiety, nausea, and post peridial vomiting and slow gastric emptying. Thin built has significant association with peptic ulceration. Zollinger Ellison diseases (fulminate peptic ulceration) should be considered in patients who present with ulcer perforation. Genetic factor, as in many diseases, may be involved to a limited degree. Acid (physiological marker) hyper secretion was associated with blood group “O”. Specific leukocyte antigens (HLS B5, B12, and BW35) are increased in patients with duodenal ulcer. Most perforation occurs in the 1st part of duodenum, whereas anteriorly placed ulcers tend to penetrate while the posterior duodenal ulcers tend to bleed. Duodenal gastric metaplasia is the normal response of the duodenal mucosa to excess acidity. This gastric metaplasia in the duodenum is commonly infected with H-Pylori and results in duodenal ulceration.
Some important physiological abnormalities had been observed in patients with duodenal ulcer diseases. This causes an increased number of parietal and chief cells, increased sensitivity of parietal cells to gastrin stimulation, an increased gastrin response to meal, a decreased inhabitation of gastrin release, increased rate of gastric emptying, increased BAO (3 mEq/hr) and inreased MAO (40 mEq/hr). MEN type 1 and deficiency of alpha antitrypsin were noted to be the high risk factors. As far as the management is concerned, the initial priorities are resuscitation, analgesia and antibiotics. The treatment is principally surgical.
Laparoscopic perforation closure may be performed which significantly reduces operative morbidity. Non operative management may be performed in those cases where upper gastro intestinal series with water soluble contrast does not demonstrate leakage.

CONCLUSION:
The duodenal perforations in diabetics were found to be very uncommon. NSAIDs were an important etiological factor. Very high incidence was noted in thin Cigarette Smokers and in patients with irregular dietary habits. Cigarette smoking causes development of new ulcers, complication in existing ulcers and the recurrence of previously healed ulcers. Duodenal perforation was common in middle and lower socioeconomical group and non diabetic patients. Post operative treatment of H-Pylori reduced the risk of ulcer recurrence.

COMMENTS:
This is the first study carried out in Deptt: of surgery
REFERENCES:


