



NON OPERATIVE MANAGEMENT OF DUODENAL PERFORATION; OUR EXPERIENCE AND REVIEW OF LITERATURE

Clinical Research

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ABSTRACT

Bowel perforation can be managed by operative and non-operative method depending upon patient's vitals and signs of peritonitis. Outcome depends upon early diagnosis and treatment. Here we are reporting a case of bowel perforation most likely duodenal perforation. which diagnosed by clinical examination and radiological (erect chest radiography and CECT of abdomen) investigation. As patient was vitally stable and there were no signs of peritonitis. Therefore we prescribed expectant management. Many studies concluded that sealed duodenal perforation can be treated by non-operative management and it might reduce the need for surgery in such patient.

KEYWORDS

Sealed Duodenal Perforation, Peritonitis, Chest Radiography, CECT Of Abdomen,

Introduction

Bowel perforation is a lethal complication of peptic ulcer. This occurs in 2-5% of patient with ulcer disease with 5-10 % morbidity and mortality. Site of perforation are duodenal, antral and gastric body with incidence of 60%, 20%, and 20% respectively. There are two type of peptic ulcer perforation - free and sealed¹. Free perforation of the peptic ulcer occurs when gastric and duodenal contents spill freely into peritoneal cavity, whereas sealed perforation occurs when ulcer creates a full thickness hole in the stomach or duodenum, but spillage is prevented by physical adherence of omentum or adjacent organ like liver. It is also known that perforated ulcers frequently seal spontaneously and operation can be avoided in these patients². Conservative or non-operative management of perforated duodenal ulcer was first introduced in 1870³ and later recommended by others^{4,5}. In 2004, Songne et al⁶ in his study, reported that more than 50% patient with perforated peptic ulcer responded to conservative treatment without surgery⁷.

Case Presentation:-

35y old gentlemen presented in emergency department with complain of upper abdomen pain from 4 days. Pain was restricted to epigastric and right hypochondrium region. Pain was gradual onset, generalized, mainly dull with episodes of sharp sensation in character, radiating to back some time. Pain was associated with nausea and vomiting. Vomitus was bilious in nature. Fever was present. He had been passing stool and flatus. Patient was febrile with temp-100 F, pulse-84 beats/min, BP-114/70 mm of Hg and respiratory rate was 14/min. On examination, Abdomen was mildly distended and all quadrant of abdomen was moving equally on respiration. On palpation abdomen was soft, liver dullness was obliterated, tenderness was present at epigastrium and right hypochondrium. Bowel sound was present. There was no guarding, rigidity and rebound tenderness, features suggestive of peritonitis.

Laboratory test showed hemoglobin-13.7g/dl, S.urea-29, Na/K-139/4.5, mildly elevated white blood cell count (12000 cmm). Erect chest radiography showed gas under diaphragm feature suggestive of pneumoperitoneum may be due to perforation of bowel. Ultrasound of whole abdomen suggested perforation of bowel with ascitis. As patient's vital was stable and there was no sign of peritonitis, we planned for expectant management. Patient was kept nil per orally with intravenous fluid, NSAID and antibiotic. Nasogastric tube was inserted and Foley's catheterization was done. Patient was observed regularly with 4 hourly monitoring of vitals. Patient was improving day by day. Pain was improving and fever was settled down. Abdomen was normal in contour and bowel sound was normal. Ultrasound abdomen was repeated after 48 hours, which suggested mild fluid collection in right hypochondrium and between bowel loops. Patient was asymptomatic so nothing was done for intraperitoneal fluid collection. On 3rd day sips of liquid was allowed. CECT of abdomen

was done which suggested right sub-diaphragmatic mild collection and all bowel loops were healthy. Patient was gradually improved and resumed his diet normally. He was discharged on 8th day. Condition on discharge was satisfactory. He was advised for Helicobacter pylori eradication regimen for two weeks followed by 6 weeks therapy of antiulcer medicine with proton pump inhibitor. Patient was normal after 6 weeks and ultrasound abdomen suggested normal study.

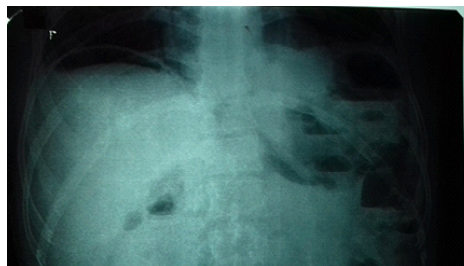


Fig 1- Erect chest radiograph on the day of admission showing gas under right dome of diaphragm.



Fig 2- Abdomen contour on the 3rd day

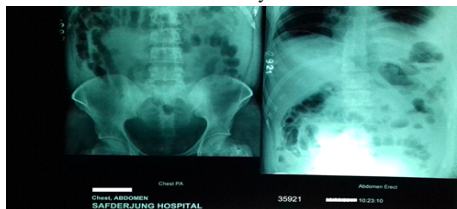


Fig 3- Chest radiography on 3rd day of admission showing gas filled bowel.

Discussion

Any part of GI tract may become perforated, releasing gastric or intestinal contents into peritoneal space resulting chemical peritonitis. If leakage is not closed then food particles reach the peritoneal cavity

and chemical peritonitis succeeded by development of bacterial peritonitis. Mostly perforation occurs on the anterior surface of duodenum. *H. pylori* play a central role of upper bowel perforation. It is implicated in 70-90% of all perforated duodenal ulcer. The second most common cause of perforated duodenal ulcer is chronic ingestion of Non-Steroidal Anti-inflammatory drugs. Tokunga et al reported *H. pylori* infection in 92% of cases of perforated duodenal ulcer⁸. Early diagnosis and treatment prevents mortality and morbidity of the patients. Duodenal perforation can be diagnosed by clinical examination and radiological (X-ray abdomen & chest- erect view, CECT of abdomen). Water soluble contrast medium gastroduodenogram has been used to identify the presence or absence of active leakage. In most cases of bowel perforation, surgery is only treatment. Sometimes perforated duodenal ulcer seal spontaneously by the formation of adhesion to the caudate lobe, greater omentum, gallbladder or falciform ligament and surgery may be avoided in this patient.² Non operative management is considered only when the perforation has already been sealed¹. It is very important to determine either patients have active leakage or self sealed perforation. Water soluble contrast medium gastroduodenogram can identify the presence or absence of active leakage of perforated ulcer. Study done by Berne and Donovan reported that gastroduodenogram documented sealed perforation in 35 patients of perforated duodenal ulcer. These 35 patients was treated non operatively in which mortality rate was 3 %, while operative patients had mortality rate was 6.2 %. In 35 patients one patients developed intraabdominal abscess. Berne and Donovan concluded that non operative management can be done if perforation is self sealing.¹³

Crofts TJ, Kenneth GM et al conducted a randomized trial and concluded that non operative treatment is safe and effective in selected patient. It included antibiotic, nasogastric tube aspiration, intravenous fluid, proton pump inhibitors. If patients not improved then surgery had been done. There was no increased in mortality due to failed conservative management. Overall mortality and morbidity in two group (surgical and non surgical) was not differ significantly.¹¹

Recently studies reported that conservative management are reliable alternative in selected case of perforated gastro-duodenal ulcers.¹² Intraabdominal abscess formation was most common complication of non operative management, which can be treated with antibiotics and/or percutaneous drainage without sequelae^{10,11,14}. If non operative management started then treating doctor should have certain norms like—

1. Strict monitoring and assessment of patients by specialist in 2-4 hourly.
2. If peritonitis features progresses or does not improve within 12 hours then surgery should be done.^{10,11,13,14}
3. Upper gastro intestinal endoscopy should be done after 6 weeks to rule out other pathology like carcinoma.¹⁴
4. Non operative management should not done in above 70 years of age.¹¹
5. Non operative management of sealed gastric ulcer is inappropriate because more frequent leakage, bleeding, recurrence and chances of malignancy.¹³

If there is no sign and symptom of generalized peritonitis, non-operative management may be used, which includes erect chest radiography, antibiotic therapy directed against gram-negative and anaerobic bacteria, nasogastric tube aspiration, intravenous fluid, proton pump inhibitors, close observation of vitals, discharge with antiulcer medications and undergo follow-up endoscopy^{10,11,12,13,14,15}.

Conclusion:-

Non operative management can be done in selected patients with closed monitoring of vitals, which reduces the morbidity induced by surgery, anesthesia and also reduction in formation of intra-abdominal adhesion.

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