

CASE REPORT

FLANK DRAINAGE FOR PERITONITIS SECONDARY TO HOLLOW VISCUS PERFORATION

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ABSTRACT: A middle aged woman presented to the emergency room with pain abdomen. On examination there was guarding, rigidity, rebound tenderness. Chest X-ray showed gas under the diaphragm. She was diagnosed with hollow viscus perforation. Patient was not fit to undergo surgery because of comorbid cardiac conditions. Patient was in respiratory distress. It was decided to insert bilateral flank drains to drain the fluid and reduce the splinting action of the diaphragm. Patient improved after the procedure. Postoperatively peritoneal lavage was continued with saline mixed with antibiotic solution. Patient recovered well.

KEYWORDS: Peritonitis, Severe comorbidity, Diaphragm splinting, Flank drains.

INTRODUCTION: Hollow viscus perforation with secondary peritonitis is an abdominal emergency. It usually entails an initial period of resuscitation followed by laparotomy and closure of the perforation and definitive procedure if the patient's hemodynamic condition permits. However in this case report patient had severe cardiac comorbidity. Hence it was decided to insert bilateral flank drains to drain the fluid and reduce the splinting action of the diaphragm. Postoperatively peritoneal lavage was continued with saline mixed with antibiotic solution. Patient recovered well. In patients who are not fit for surgery, flank drainage is an option especially if the patient is in respiratory distress due to restriction of the diaphragmatic movement. Once the initial respiratory crisis is managed, patient can be posted for definitive surgery if there is no improvement of the general condition.

CASE PRESENTATION: A 58 year old female presents with pain abdomen and vomiting since 1 day. The pain was sudden in onset initially over upper abdomen eventually spreading all over abdomen. Vomiting since 1 day containing food particles non bilious in nature, non-blood tinged. Patient also complains of breathlessness. No fever or any other symptoms. In the past she had on and off chest pain associated with breathlessness while performing accustomed work for the last 7 years. No significant family or personal history.

Examination:

- PR – 130/min.
- BP – 110/70 mm Hg.
- JVP – Raised.
- RR-30/min.
- P/A – Abdomen distended, Guarding present, Rigidity present, Rebound tenderness present.
- CVS – Gallop rhythm present.
- RS – Tachypnea.
- CNS – Anxious.

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Impression – Peritonitis presumably due to Hollow Viscus Perforation:

Investigations: Chest X-Ray: Gas under the diaphragm and straightening of the left border of the heart were evident.



Figure 1: Chest X-ray

USG Abdomen – Free fluid noted in the peritoneum

ECG – Features of supraventricular tachycardia, septal infarct, T wave inversion and S-T segment depression in leads 2, 3, aVF, V₅, V₆ suggestive of inferolateral ischemic changes.

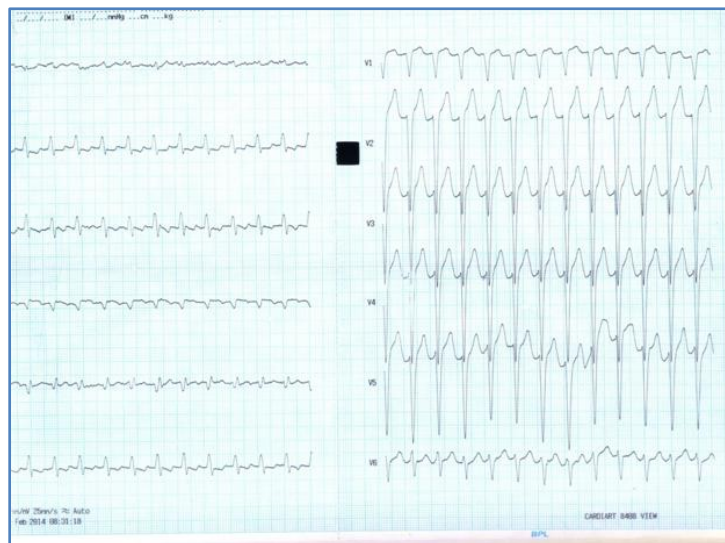


Figure 2: ECG

Echocardiography – Right atrium and Right ventricle Dilated. Left atrium dilated. Left ventricle normal. Moderate to severe Tricuspid regurgitation. Mild Mitral regurgitation. Left Ventricular Ejection Fraction- 40-45 %. No Clot/ Pericardial effusion. No regional wall motion abnormality.

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CARDIAC REPORT: Patient can be taken for the proposed surgery with high cardiac risk including death explained to patient attenders after physician and anesthetist opinion.

Blood Investigations:

- Hb – 12.6 g%
- RBS – 150 mg %
- Blood Urea – 58 mg %
- Serum Creatinine – 2.0 mg %
- Electrolytes – Sodium- 149, Potassium – 3.8, Chloride – 119.7
- WBC- 17, 000/ cc
- LFT – Normal
- Troponin T – 0.01 ng/ml (0.01 – 0.1 ng/ml)
- CK-MB – 14 U/L (upto 24 U/L)

It was decided that in view of the poor cardiac status a major abdominal surgery might not be tolerated by the patient and informed consent was taken for the insertion of intraperitoneal bilateral flank drains.

Under Local Anesthesia with strict aseptic precautions bilateral intraperitoneal flank drains placed. Approximately 250 ml of bile stained intraperitoneal secretions drained. Patient withstood the procedure well.



Figure 3: Flank Drainage tube

Post-operative Course: Through the flank drains lavage with warm saline and antibiotic metronidazole was done for 3 days twice daily. Patient improved symptomatically. Vital signs also improved over a course of 3-5 days. Abdomen was soft with no generalized guarding or rigidity. Oral intake with fluids were permitted on the 5th postoperative day after the appearance of bowel sounds and patient passed flatus. Subsequently semisolid foods were allowed.

Drains were removed on the 7th postoperative day when the collection was less than 30 ml over a period of 24 hours. Patient was on Inj. Piperacillin Tazobactam 4.5 g/day in divided doses and Inj. Metronidazole 100 ml tid for 7 days. Nebulization and Chest Physiotherapy were started on the 2nd post- operative day. After the drains were removed, from the drain site on the right side,

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omentum protruded out, which was replaced into the abdominal cavity under local anesthesia. Patient stayed in hospital for a period of 2 weeks.

DISCUSSION: The causes of peritonitis can be divided into primary and secondary. The secondary peritonitis is almost exclusively due to hollow viscus perforation. Perforated peptic ulcer typically presents with sudden onset of severe abdominal pain but may be less dramatic, particularly in hospitalized, elderly, and immune compromised patients. The resulting peritonitis is often generalized but can be localized when the perforation is walled off by adjacent viscera and structures. Examination reveals fever, tachycardia, and abdominal wall rigidity, and laboratory evaluation typically demonstrates leukocytosis. Abdominal x-ray reveals free sub diaphragmatic gas in 80% to 85% of cases.

Aggressive fluid resuscitation and broad-spectrum antibiotics followed by prompt operative repair is indicated in the vast majority of patients with perforated PUD. Nonoperative treatment of perforated duodenal ulcer can be considered in poor operative candidates in whom the perforation has been present for more than 24 hours, the pain is well localized, and there is no evidence of ongoing extravasation on upper GI water-soluble contrast studies.¹ Surgery is almost always indicated although occasionally non-surgical treatment can be used in stable patients without peritonitis and in whom radiologic studies document a sealed perforation.² Half of perforated Duodenal Ulcers are sealed at operation.³

The concept of continuous postoperative peritoneal lavage is not a new one, but it is receiving more attention as a means of reducing post-operative sepsis. At the time of initial operation, peritoneal drains are left in situ and lavage is begun in the immediate postoperative period. Lavage is performed with large exchange volumes (>2 litres) during each three- hour cycle to ensure dispersion of fluid throughout the peritoneum and to prevent fluid loculations. Antibiotic mixture with broad coverage as well as low dose heparin are included in the lavage fluid. Lavage is continued for 48-72 hours or until the effluent is clear.⁴

Management of sepsis is a challenge in treating patients with perforation peritonitis. 'Surviving sepsis' guidelines have made a significant improvement in the outcomes of these patients. There is a group of patients with peritonitis who do fail to optimize with the standard guidelines. Percutaneous placement of abdominal drains may act as a temporizing measure by reducing intra-abdominal pressure and therefore improving respiratory parameters. Pre-operative flank drain insertion can lead to significant improvements in the physiological status of patients with perforation peritonitis and significantly contributes to their resuscitation.⁵

In conservative management, the patient is observed closely through serial physical and laboratory examinations while being treated with nasogastric suction, intravenous acid secretion suppression, and intravenous broad-spectrum antibiotics. If at any time during conservative management the patient deteriorates, an operation is indicated.⁶ In this case, since the patient improved with conservative management and because of existing co-morbidity, laparotomy was not done.

CONCLUSION: Pre-operative flank drain insertion can lead to significant improvements in the respiratory dynamics of patients with perforation peritonitis and significantly contributes to their resuscitation. Once the patient's respiratory mechanics are improved, patient can be posted for

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definitive surgery. The flank drains can also be used for continuous lavage which decreases the peritoneal contamination if laparotomy is not contemplated.

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