

# Perforated Peptic Ulcer After Coronary Bypass Grafting, Two Case Reports\*

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## Summary:

We are documenting cases with perforated peptic ulcer after coronary bypass grafting. Diagnosis is difficult in the immediate post-operative period. The clinical signs being misleading and interpretation of complementary investigations difficult. Therefore, the possibility of abdominal complications must be kept in mind, especially in patients with one or more predisposing factors. The following factors have an increase risk of abdominal complications: previous history of gastrointestinal pathology (ulcer, gall stone, alcoholism) the nature of the underlying cardiac disease, cardiopulmonary bypass and, above all, peri and post-operative incidents; hypovolemia, low output syndrome, respiratory and infectious complications. The inappropriate use of vasoconstricting agents may also play a role. Majority of abdominal complications seem to be related to the ischaemia and anoxia in the splanchnic territory.

This justifies certain prophylactic measures: strict selection of the patients, diagnosis and treatment of associated abdominal pathology before operation, prevention of low output states, respiratory and infectious complications and careful examination of the abdomen after operation to ensure the early diagnosis and treatment of complications, should they develop.

## Introduction:

We are documenting two cases of duodenal perforation after coronary bypass grafting. There is stress of any operation but coronary bypass grafting which is done with cardiopulmonary bypass assist has its own stress with occasionally super added prolonged ventilation, heavy inotropic support, intra aortic balloon counterpulsation due to perioperative complications.

diac surgery one should keep in mind the problems of stress effecting the other organs. The past history of duodenal ulcer and examination of the abdomen postoperatively in critically ill patients should be given due respect.

## CASE REPORT

### Case No. 1.

A young non commissioned officer of 45 years, was admitted with effort angina for the past one year. He was investigated and was found to be

While managing the complications of car-

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having 100% occlusion of Right Coronary Artery and 80% occlusion of Left Anterior Descending Artery proximally. He was operated on on 1/3/92 when coronary bypass grafting was done with a vein graft to Right Coronary Artery and Left Internal Mammary Artery to Left Anterior Descending Artery. His post-operative course was not smooth with peri operative infarction in the anterolateral ventricular region resulting in low cardiac output and having impaired oxygenation. But he gradually improved and was out of Intensive care unit on 4th day. On 10th post-operative day he was being considered for discharge from the hospital.

At lunch time when he had severe pain in the epigastric region lasting for a short while easing with rest and reassurance. Next afternoon he had increasing severe pain spreading in the whole abdomen with guarding and rigidity. His plain X-ray of the abdomen revealed gas under the diaphragm with suspicion of the perforated duodenal ulcer. The exploratory laparotomy was done on the same day when a duodenal ulcer was found anteriorly in the first part of duodenum which was closed with the omental patch. He had no other complications post operatively. He remained on injections Tagamet after the operation. He is asymptomatic post operatively for anginal and abdominal pain.

#### Case No. 2.

A retired officer of 62 years was admitted with history of effort angina for the past 4 years. His disability was CCS class II. His ETT revealed positive changes in 4.36 minutes. He was a known case of peptic ulcer for the past 10 years and smoker for 20 years. His coronary angiography revealed triple vessel disease. He was operated on on 18/5/1992 when Coronary Artery Bypass Grafting with four vein grafts were done with endarterectomy to the Right Coronary Artery. After 2 hours of the completion of operation patient had sudden ventricular fibrillation which was reverted back by defibrillation. He was having low cardiac output with ST elevation and impending perioperative infarction in the anterolateral chest leads.

In view of above it was decided to put intra aortic balloon pump. He had very positive effect of

balloon pump with heavy inotropic support and ventilatory support. In next 48 hours his ECG improved considerably. He was on Tagamet injections post operatively. He was weaned from the ventilator and intra aortic balloon pump on 3rd post operative day. But he was having abdominal distention with absent bowel sounds, ileus was suspected and was treated conservatively. On 5th post-operative day he developed oliguria with low cardiac output, tenderness and guarding of the abdomen. Diagnostic aspiration of the abdomen was done which revealed dirty fluid. It was diagnosed as a case of duodenal ulcer perforation and laparotomy done on the same day revealed perforated duodenal ulcer in the first part of the duodenum which was closed with a patch of omentum. But his further course was bad with septic shock, acute renal failure, respiratory failure (multiple organ failure) and expired on 7th post-operative day.

#### Discussion:

Speranza V et al<sup>3</sup> have shown exclusively that multiple organ trauma, sepsis, liver failure, renal transplantation, burns, CNS injury produce stress with increased gastric acid production, which produces permeability of mucosa to hydrogen ions and alteration in volume and distribution of gastric blood flow and impaired energy status of mucosal cells which lead to stress ulcer syndrome. Froster A et al<sup>4</sup> have shown that Cimetidine decreases the incidence of major gastric and duodenal bleeding in patients presenting with severe life threatening situations. Muhe E<sup>5</sup> has shown that the prophylactic use of Cimetidine reduced the incidence of stress induced haemorrhage to a fraction of 1%. An achievement that they believe is quite remarkable result. Prior to the therapeutic and prophylactic use of Cimetidine stress induced haemorrhage carried a mortality of 50%; with Cimetidine, that rate has been reduced to zero. Critically ill patients may die but they need no longer bleed or perforation to death. So every patient with predisposing factors to produce stress ulceration and perforation should be given Cimetidine prophylactically.

Wallwork et al<sup>1</sup> have shown over a 5-year period, 9 patients (0.85%) who developed a major acute abdominal complication after cardiopulmon-

ary bypass surgery. Difficulties in the initial recognition and diagnosis of these complications in sedated ill patients are very high. A high index of suspicion is important in the early diagnosis of these complications. Their experience suggests that each case should be dealt with its own merits in accordance with common surgical practice and that operative management should not be rejected because the patient has recently undergone a major cardiac operation.

Diagnosis is difficult in the immediate post-operative period, some complications only being recognized at autopsy. The clinical signs being misleading and interpretation of complementary investigations difficult. Therefore, the possibility of abdominal complications must be kept in mind, especially in patients with one or more predisposing factors. Excluding accidents due to anticoagulant therapy the following factors were associated with an increase risk of abdominal complications: previous history of gastrointestinal pathology (ulcer, gall stone, alcoholism) the nature of the underlying cardiac disease (coronary artery and aortic valve disease), cardiopulmonary bypass and, above all, peri and post-operative incidents; hypovolemia, low output syndrome (half the patients in their series) respiratory and infectious complications. The inappropriate use of vasoconstricting agents may also play a role.

Chigot J P et al<sup>2</sup> in their series have concluded that the majority of abdominal complications seem to be related to the ischaemia and anoxia in the splanchnic territory, which explains the important role of preceding factors. The prognosis of abdominal complications after cardiac surgery were poor, mortality reaching 50% to 100% in some cases, in their series 12 of the patients died out of 26 (46.15%).

In our presentation exactly the above mentioned factors played a role and out of two cases we lost one case.

This justifies certain prophylactic measures: strict selection of the patients, diagnosis and treatment of associated abdominal pathology before operation, prevention of low output states, respiratory and infectious complications . . . and careful examination of the abdomen after operation to ensure the early diagnosis and treatment of complications; should they develop.

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