CASE REPORT

Jejunal Patch Repair of a Duodenal Perforation

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Summary

A patient with duodenal ulcer who developed iatrogenic perforation post endoscopy is presented. We present this case that was treated successfully by jejunal serosal patch.

Key Words: Duodenal perforation, Jejunal serosal patch

Introduction

In the last decade, the management of duodenal perforation has shifted toward a more selective approach[1]. The approaches to duodenal injuries range from nonsurgical to sophisticated surgical procedures. Duodenal perforations are technically difficult to repair and are associated with high morbidity and mortality[2,3].

We believe jejunal serosal patch is rarely done in Malaysia for duodenal perforation and has not been reported in Malaysia. Hence we report this case.

Case Report

A 79-year-old lady presented to the hospital with epigastric pain of three days duration, associated with three episodes of hemetemesis. She gave a history of chronic non-steroidal anti-inflammatory drug ingestion for knee pain. Clinical examination revealed a pale patient with a tender upper abdomen, but no peritonitis. Her haemoglobin was 9gm/dl. Erect chest radiograph revealed no air under the diaphragm to suggest a perforated viscus. A diagnosis of upper gastrointestinal bleed secondary to peptic ulcer was made and the patient was subjected to an upper endoscopy, which revealed a large Forest 3 ulcer at the first part of the duodenum.

Shortly post endoscopy, the patient developed abdominal distention and pain with upper abdominal tenderness and guarding. A second erect chest film revealed air under both the hemi-diaphragms. Fig 1.

A diagnosis of iatrogenic duodenal perforation was made and the patient was subjected to laparotomy. A large perforation, measuring 2.5 cm was seen in the first part of the duodenum. The ulcer edge was friable and necrotic with the surrounding mucosa thickened and edematous. Primary closure was attempted but was unsuccessful. Since the patient was unstable and too ill for a major procedure, a loop of jejunum was brought up to the perforation and sutured to the defect, using interrupted absorbable sutures (jejunal serosal patch).

The postoperative recovery of the patient was stormy. She developed pneumonia and required a tracheostomy was done for prolonged ventilation. She was started on nasogastric tube feeding after 5 days, which she tolerated well. She was weaned off the ventilator after 2 weeks and is recovering very slowly.

Discussion

Gut perforation as a result of endoscopy and related procedures is a well-recognized complication.

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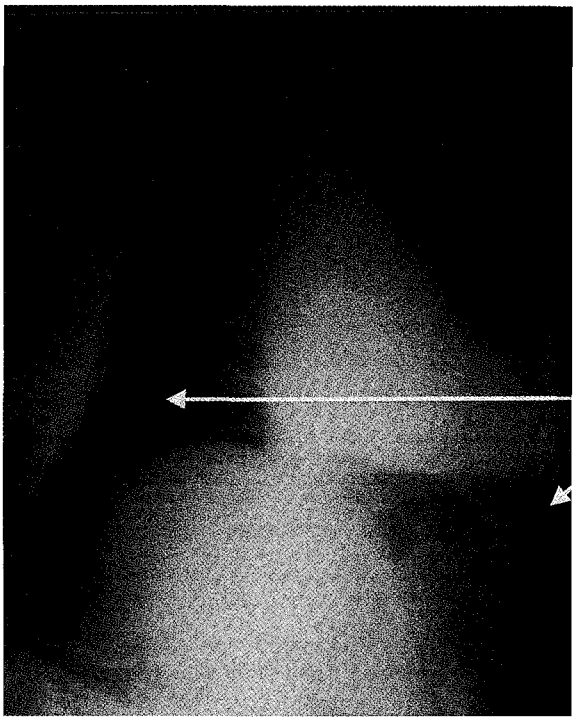

Fig 1: Erect chest X-ray showing air under the diaphragms (arrows)

Although it is uncommon, occurring in less than 1% of patients, it is associated with high morbidity and mortality[1, 2]. Management of duodenal perforations remains a controversial issue. Traditionally, surgery was the treatment of choice. However, a more selective approach has become the preferred method with proposed guidelines for selection of patients for conservative management[1].

Classification by Stapfer M et al[1], defines this patient to have a Type 1 duodenal injury, where immediate surgery is advised. These perforations are large (giant perforations are defined as perforations larger than 2.5 cm in size) and cause persistent leaks in the retroperitoneal or intraperitoneal.

An array of surgical techniques, varying from simple primary repair (duodenorraphy) to pancreaticoduodenectomy has been described in the management of duodenal perforations[1,2,3]. Giant defects, as in this case, cannot be closed by simple primary closure. Modalities of treatment carried out in these instances are free omental plug, jejunal serosal patch, tube duodenostomy, pyloric exclusion with drainage, expanded polytetrafluoroethylene patch, Roux-en-Y duodenojejunostomy, and partial gastrectomy with the possible addition of gastrojejunostomy and pancreaticoduodenectomy[1,2,3]. These modalities generally faired better with comparable results than primary closure in giant perforation.

We decided on jejunal serosal patch for this patient because of the large perforation and she was too ill for a major procedure. The main consideration was 'damage control' over any definitive reconstruction. The procedure was done within a short period of time with a successful outcome.

Surgery should not be delayed in large duodenal perforations in ill patients, where pain and abdominal signs are prominent. The type of surgical repair should be individualized taking into consideration the extent of the duodenal injury, other associated injuries and the co-morbid conditions of the patients. Jejunal serosal patch for a large duodenal perforation in a critically ill patient is an option to be considered.

References

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