Mangement of duodenal perforation

Essay
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List of Abbreviations

Abbreviation	
CT	Computed Tomography
GIT	Gastero-Intestinal Tract
SDI	Sever Duodenal Injuries
TPN	Total Parenteral Nutrition
RDA	Recommended Daily Allowance
ERCP	Endoscopic Retrograde colangio pancreaticography
NSAIDS	Non Steroidal Anti Inflammatory Drugs
H-Pylori	Helicobacter-pylori

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Introduction

Duodenal perforation is one of the uncommon but serious surgical emergencies. Literature is controversial on the exact management of various cases of duodenal perforation which leads to high mortality rate, reach to 60 _70% **(Nussbaum et al 1985)**.

In the last decade, management has shifted toward a more selective approach, even some authors' advocate mandatory surgical exploration but didn't elaborate distinct surgical guidelines **(Scarlett et al 1994).**

The anatomical site of the duodenum as a retroperitoneal organ and its relation to many vital structures consider the main obstacles for the management of duodenal perforation with the increase of its complicated death rate **(Hermansson et al 2003)**.

Treatment of patient with duodenal perforation following endoscopic retrograde cholangiopancreatography is a dilemma for the treating physicians. A mortality rate of almost 50% has been reported for those who fail conservative therapy. This

has led some authors to recommend early operation in all duodenal perforations' based on the high mortality rate of failure of conservative management. **(Stapfer et al 2008).**

A patient with perforation but without evidence of pneumoperitoneum can safely assume that perforation has sealed off on its own, with a nonoperative approach for such patients. However, operative treatment in patients with perforated ulcer and evidence of pneumoperitoneum is indicated. **(Moller et al 2011).**

Aim of the work:

To discuss different methods of management of duodenal perforation.

Embryology of the duodenum:

The duodenum develops from the terminal part of the foregut and the cephalic part of the midgut. The junction of the two parts is directly distal to the origin of the liver bud ***(Sadler 2006).***

As the stomach rotates, the duodenum takes on the form of a C-shaped loop and rotates to the right ***(Sadler 2006).***

This rotation, together with rapid growth of the head of the pancreas, swings the duodenum from its initial midline position to the left side of the abdominal cavity ***(Sadler 2006).***

The duodenum and the head of the pancreas press against the dorsal body wall, and the right surface of the dorsal mesoduodenum fuses with the adjacent peritoneum. Both layers subsequently disappear, and the duodenum and the head of pancreas become fixed in a retroperitoneal position. The dorsal mesoduodenum disappears entirely except in the region of the pylorus of the stomach, where a small portion of the duodenum retains its mesentery and remains intraperitoneal. ***(Sadler 2006).***

During the 2nd month, the lumen of the duodenum becomes obliterated by the cells in its walls. However, the lumen recanalized shortly thereafter ***(Sadler 2006).***

Since the foregut is supplied by the celiac artery and the midgut is supplied by the superior mesenteric artery, the duodenum is supplied by branches of both arteries **(Sadler 2006).**

Anatomy of the duodenum:

The adult duodenum is 20-25 cm long and is the shortest, widest and most predictably placed part of the small intestine. It is only partially covered by peritoneum although the extent of the peritoneal covering varies along its length: the proximal 2.5 cm is intraperitoneal; the remainder is retroperitoneal. The duodenum forms an elongated C that lies between the level of the first and third lumbar vertebrae in the supine position. The lower limb of the C extends further to the left of the midline than the upper limb. The head and uncinate process of the pancreas lie within the concavity of the C. The duodenum lies entirely above the level of the umbilicus and is described as having four parts ***(Standring 2004).***

First (superior) part:

The first part of the duodenum is 5 cm long and starts as a continuation of the duodenal end of the pylorus. It is the most mobile portion of the duodenum. Close to the pylorus, peritoneum covers the anterior,