Bolus obstruction

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Bolus obstruction in the small bowel may be caused by gall stones, food, trichobezoar, phytobezoar, stercoliths and worms. Gallstones This type of obstruction tends to occur in the elderly secondary to erosion of a large gallstone directly through the gallbladder Burrill Bernard Crohn , 1884–1983, gastroenterologist, Mount Sinai Hospital, New Y ork, NY , USA, described regional ileitis in 1932. Leo George Rigler , 1896–1979, Professor of Radiology , University of California, Los Angeles, CA, USA. proximal to the ileocaecal valve. The patient may have recur - rent attacks as the obstruction may be incomplete or relapsing as a result of a ball-v alve e ff ect. The characteristic radiological sign of gallstone ileus is Rigler's triad, comprising: small bowel obstruction, pneumobilia and an atypical mineral shadow on radiographs of the abdomen. The presence of two of these radiological signs has been considered pathognomonic of gallstone ileus and is encountered in 40–50% of the cases (note that pneumobilia is a common finding following endoscopic retrograde cholangiopancreatography with sphincterotomy). At laparotomy , the stone should be milked proximally away from the site of impaction. It may be possible to crush the stone within the bowel lumen; if not, the intestine is opened at this point and the gallstone removed. If the gallstone is faceted, a careful check for other enteric stones should be made. The region of the gallbladder should not be explored (see Chapter 71). Food Bolus obstruction may occur after partial or total gastrectomy when unchewed articles can pass directly into the small bowel. Fruit and vegetables are particularly liable to cause obstruc - tion. The management is similar to that for gallstones, with intraluminal crushing usually being successful. Trichobezoars and phytobezoars These are firm masses of undigested hair ball and fruit/ vegetable fibre, respectively . The former is due to persistent hair chewing or sucking and may be associated with an under - lying psychiatric abnormality . Predisposition to phytobezoars results from a high fibre intake, inadequate chewing, previous gastric surgery , hypochlorhydria and loss of the gastric pump mechanism. When possible, the lesion may be kneaded into the caecum; otherwise, open removal is required. A preoper - ative diagnosis is di ffi cult even with high-resolution computed tomography (CT) scanning. Stercoliths - These are usually found in the small bowel in association with a jejunal diverticulum or ileal stricture. Presentation and management are identical to that of gallstones. Worms Ascaris lumbricoides may cause low small bowel obstruction, particularly in children, the institutionalised and those near the tropics. An attack may follow the initiation of anthelmin - thic therapy . Debility is frequently out of proportion to that produced by the obstruction. If worms are not seen in the stool or vomitus the diagnosis may be indicated by eosinophilia or the sight of worms within gas-filled small bowel loops on a - plain radiograph. At lapar otomy it may be possible to knead the tangled mass into the caecum; if not, it should be removed. Occasionally , worms may cause a perforation and peritonitis, especially if the enteric wall is weakened by such conditions as amoebiasis (see Chapter 6).

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Adhesions In western countries adhesions and bands are the most common cause of intestinal obstruction. The lifetime risk of requiring an admission to hospital for adhesional small bowel obstruction subsequent to abdominal surgery is approximately 4% and the risk of requiring a laparotomy around 2%. Adhesions start to form within hours of abdominal surgery . In the early postoperative period, the onset of such a mechanical obstruction may be di ffi cult to di ff erentiate from paralytic ileus. The causes of intraperitoneal adhesions are shown in Table 78.1 . Any source of peritoneal irritation results in local fibrin production, which produces adhesions between apposed surfaces. Early fibrinous adhesions may disappear when the cause is removed or they may become vascularised and be replaced by mature fibrous tissue. There are several factors that may limit adhesion forma tion. Summary box 78.3 Prevention of adhesions /uni25CF /uni25CF /uni25CF /uni25CF Numerous substances have been instilled in the peritoneal cavity to prevent adhesion formation, including hyaluroni dase, hydrocortisone, silicone, dextran, polyvinylpropylene (PVP), chondroitin, streptomycin, anticoagulants, antihista mines, non-steroidal anti-inflammatory drugs and stre nase. Currently , no single agent or combination of agents has been convincingly shown to be e ff ective. It is hoped that with more widespread use of laparoscopic surgery the incidence of intra-abdominal adhesions will reduce. Adhesions may be classified into various types by virtue of whether they are early (fibrinous) or late (fibrous) or by underlying aetiology . From a practical perspective there are Johann Conrad Peyer , 1653–1782, Professor of Logic, Rhetoric and Medicine, Scha ff hausen, Switzerland, described the lymph follicles in the intestine in 1677. Johann Friedrich Meckel (the younger), 1781–1833, Professor of Anatomy and Surgery , Halle, Germany , described the diverticulum in 1809. Eduard Heinrich Henoch , 1820–1910, Professor of Diseases of Children, Berlin, Germany , described this form of purpura in 1868. Johann Lucas Schönlein , 1793–1864, Professor of Medicine, Berlin, Germany , gave his account of this disease in 1837. - only two types: ‘easy’ flimsy ones and ‘di ffi cult’ dense ones (Figure 78.4). Postoperative adhesions giving rise to intestinal obstruction usually involve the lower small bowel and less commonly the large bowel. Bands Usually only one band is culpable. This may be: /uni25CF congenital, e.g. obliterated vitellointestinal duct; /uni25CF a string band following previous abdominal surgery or peritoneal inflammation; /uni25CF a portion of greater omentum, usually adherent to the parietes.

TABLE 78.1 The common causes of intra-abdominal adhesions. Acute in /f_l ammation Sites of anastomoses, reperitonealisation of raw areas, trauma, ischaemia Foreign material Talc, starch, gauze, silk Infection Peritonitis, tuberculosis Chronic in /f_l ammatory Crohn’s disease conditions Radiation enteritis Factors that may limit adhesion formation include: Good surgical technique Washing of the peritoneal cavity with saline to remove clots Minimising contact with gauze Covering anastomoses and raw peritoneal surfaces Figure 78.4 Band adhesion causing a closed-loop obstruction.

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