

Fig. 2. Diagram of operative findings showing punctate areas of serosal infarction in the line of the adbovac drain which holds the bowel in the kinked position.

a low vacuum suction drain. The punctate lesions on the small bowel were probably similar to those reported in a case of traumatisation by a high vacuum (Redivac) drain⁴ but our patient also suffered small bowel obstruction. Since Redivac drains are usually charged by connection to a portable suction apparatus the vacuum generated is variable but is usually in excess of 100 mmHg. In contrast, the Abdovac system is designed to give a reproducible suction pressure of 25 mmHg. Nevertheless, this low suction pressure was sufficient to cause firm adherence to the surrounding in our patient.

Since the intestinal mucosa was intact no bowel resection or repair was strictly necessary. Thus when such a drain appears tethered within the peritoneal cavity we would recommend a trial of gentle traction following reinflation of the vacuum bulb or, if this fails, gentle traction in combination with insufflation of air using a fresh sterile bulb or a syringe, before recourse to surgical reexploration. We have since successfully used air insufflation in one patient to remove an adherent pelvic Abdovac drain following a Hartmann's resection of the rectum.

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SMALL INTESTINAL OBSTRUCTION CAUSED BY A LOW VACUUM SUCTION DRAIN, A CASE REPORT

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Abstract:

A low pressure suction drain (Abdovac) used following a right hemicolectomy resulted in small bowel obstruction by sucking the seromuscular layer into its side holes, kinking the bowel and preventing removal of the drain. Insufflation of air through the drain in combination with gentle traction is suggested for the adherent low vacuum suction drains.

Key words: Intestinal obstruction, suction drain.

Introduction:

Closed vacuum suction drains have been used widely in surgical practice years with relatively few reported complications. Traumatization of the small intestine⁵ and firm adherence to adjacent tissues leading to breakage of the drain on withdrawal³ have been attributed to high suction pressures generated with the "Redivac" system (Biomet Ltd, Bridgend). Low vacuum suction drains such as the "Abdovac" system (Astra Meditec Ltd, Stroud, U.K.) were designed to avoid such complications. Nevertheless, we describe a case of traumatization and obstruction of the small bowel caused by an "Abdovac" drain.

Case Report:

A 45 year old woman underwent laparotomy and right hemicolectomy with end to end anastomosis for a locally advanced caecal carcinoma. An 18 F Abdovac drain (Fig. 1) was left with its tip in the region of the anastomosis through which 50 ml of serosanguinous fluid drained in the first 72 hours. On the fourth postoperative day an attempt was made to remove the drain but failed because of apparent tethering within the abdomen. Over

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the next 24 hours she developed colicky central abdominal pain with increasing signs of peritoneal irritation over the central abdomen. Plain abdominal X-ray showed the tip of the drain lying in the centre of the abdomen and confirmed the presence of small bowel obstruction. At a further laparotomy on the fifth postoperative day, the ileum and its mesentery were found to have been sucked into the side holes of the drain, blocking the drain and kinking the affected loop of bowel (Fig. 2). The drain was pulled away to reveal a series of punctate areas of infarction 2-4 mm in diameter on the surface of the bowel. On cutting into one of these the mucosa was found to be undamaged. The affected areas were oversewn prior to abdominal closure. Subsequent recovery was uneventful.

Discussion:

A variety of complications have been reported with intraperitoneal high vacuum suction drains, including traumatization of the intestine⁵, breakage³, knotting^{1,2} and herniation of small intestine through a looped drain⁴. To our knowledge, the present report is the first of a complication due to

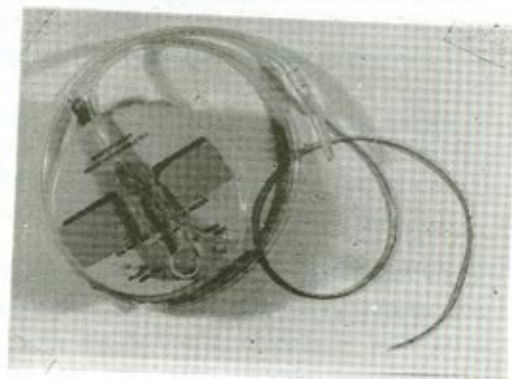


Fig. 1. Abdovac, Low Vacuum Suction Drain System.