

Obstruction by adhesions and bands

In Western countries where abdominal operations are common, adhesions and bands are the commonest cause of intestinal obstruction. Furthermore, in the early postoperative period, the onset of such a mechanical obstruction may be difficult to differentiate from paralytic ileus.

The causes of intraperitoneal adhesions are shown in Table below.

Any source of peritoneal irritation results in local fibrin production which produces adhesions between opposed surfaces. Early fibrinous adhesions may disappear when the cause is removed or they may become vascularised and replaced by mature fibrous tissue.

Prevention

The following factors may limit adhesion formation:

- Good surgical technique;
- Washing of the peritoneal cavity with saline to remove clots, etc.;
- Minimize contact with gauze;
- Cover anastomosis and raw peritoneal surfaces.

Numerous substances have been instilled in the peritoneal cavity to prevent adhesion formation, including hyaluronidase, hydrocortisone, silicone, dextran, polyvinylpropylene (PVP), chondroitin and streptomycin, anticoagulants, antihistamines, nonsteroidal anti-inflammatory drugs and streptokinase. Currently no single agent has been shown to be safe and effective, and their use is not recommended.

Adhesions may be classified into various types by virtue of whether they are early (fibrinous) or late (fibrous) or by the underlying aetiology. From a practical perspective, there are only two types — 'easy' flimsy ones and 'difficult' dense ones.

Postoperative adhesions giving rise to intestinal obstruction usually involve the lower small bowel. Operations for appendicitis and gynaecological procedures are the most common precursors and are an indication for early intervention.

Usually only one band is culpable. This may be:

- Congenital, for example obliterated vitellointestinal duct;
- A string band following previous bacterial peritonitis;
- A portion of greater omentum usually adherent to the parietes.

Treatment

Initial management is based on intravenous rehydration and nasogastric decompression. Occasionally it is curative. Whilst an initial conservative regime is considered appropriate, regular assessment is mandatory to ensure that strangulation does not occur. Conservative treatment should not be prolonged beyond 72 hours.

When, as is usual, laparotomy is required, although multiple adhesions may be found, only one may be causative. This should be divided and the remaining adhesions left in situ unless severe angulation is present. Division of these adhesions will only cause further adhesion formation.

When obstruction is caused by an area of multiple adhesions, they should be freed by sharp dissection. To prevent recurrence the bare area should be covered with omental grafts.

Following release of band obstruction, the constriction sites that have suffered direct compression should be carefully assessed and if they show residual colour changes, invaginated.

Table 66.1 The common causes of intra-abdominal adhesions

Ischaemic areas	Sites of anastomoses, reperitonealisation of raw areas, trauma, vascular occlusion
Foreign material	Talc, starch, gauze, silk
Infection	Peritonitis, tuberculosis
Inflammatory conditions	Crohn's disease
Radiation enteritis	

Summary box 66.4

Prevention of adhesions

Factors that may limit adhesion formation include:

- Good surgical technique
- Washing of the peritoneal cavity with saline to remove clots, etc.
- Minimising contact with gauze
- Covering anastomosis and raw peritoneal surfaces