Adhesions

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Pathology - Adhesions are best classified with reference to their appear - ance. They are subdivided into peritoneal, areolar and dense adhesions. Peritoneal (sclerotic) adhesions - These are mesothelial adhesions between two mesothelial surfaces (Figure 65.15a). They reflect mesothelial prolif - eration, resemble peritoneum and are generally soft and non-vascular. They are similar in appearance (though not in consistency) to the peritoneal cocoon that occurs in mesenteric sclerosis. T hese can be band-like. They may occur following laparoscopic surgery , where they form a band linking a viscus to the inner surface of a port site. Band adhesions can lead to Figure focal abdominal pain, internal herniation (through the window - created with surrounding related structures) or intestinal torsion around the band. Areolar adhesions These flimsy connective tissue adhesions are identical to the connective tissue that fills the retroperitoneal space between the mesentery and posterior abdominal wall (Figure 65.15b). Given this appearance they have been called ‘angel hairs’. They are generated in a process similar to that involved when - the mesentery adheres to the posterior abdominal wall.

Figure 65.14 Mesenteric sclerosis. (a) Coronal section of abdomen on computed axial tomography demonstrating a sclerotic mass. (b) Postexcision mass in (a) . The intestine is contained in a sclerotic capsule. (c) Appearance of the mass in (b) after division into halves. The intestine is draped across the surface of a mesenteric tissue mass. (d) Mesenteric panniculitis (misty mesentery). (d)

The capacity to adhere is shared by all organs of the mesenteric domain. This explains the anatomical relations between the liver, colon, spleen and mesentery on one side and the abdominal wall on the other. The capacity is retained to varying degrees among individuals and explains adhesion formation in the adult setting. Adhesion occurs following abdominal surgery when the intestine and mesentery adhere to the inside surface of the anterior abdominal wall. The resultant anatomical arrangement is similar to that observed during development, except the anterior abdominal wall is involved. Postoperative adhesion formation occurs to varying degrees. At one end of the spectrum, it may be entirely absent. At the other end, mesenteric, intestinal and other components of the mesenteric domain may adhere over broad areas to the mally commences in the anterior abdominal wall. This nor midline and extends laterally towards the flanks, displacing the overlying peritoneum. The conformation of the peritoneal cavity changes markedly . In the most extremes cases, the peri toneal cavity may be obliterated or limited to small pockets at the flanks. This generates considerable technical challenges during reoperative surgery . Dense adhesions These di ff er markedly in appearance from peritoneal or areolar adhesions. They can bridge the abdominal wall and intestine, or intestine and mesentery , and lead to fusion of the bridged structures. Surgical division can be challenging. Sometimes it is not possible to separate conjoined organs without disrupting the integrity of one of them. Such dense adhesions arise mostly following severe intraperitoneal contamination (e.g. after perforation) at sites of gross

fibrin deposition and are highly variable in terms of vascularity . Complications of adhesions The most common adhesion-related problem is small bowel obstruction (SBO). Adhesions are the most frequent cause of SBO in resource-rich countries and are responsible for 60–70% of SBOs (see Chapter 74). Adhesions are also implicated as a major cause of secondary infertility (see Chapter 87 relationship of adhesions to chronic abdominal and pelvic pain is contentious. Unguided division of adhesions has not been shown to reduce chronic abdominal pain although conscious pain mapping (laparoscopy under local anaesthesia) to direct lysis may improve success rates. A substantial industry has developed around the preven - tion of adhesions. To date, no agent or mechanism has been identified that reliably reduces adhesion formation.

Figure 65.15 Adhesions. (a) Peritoneal (sclerotic) adhesions. (b) Areolar adhesions. (Reproduced with permission from Coffey JC, Lavery I, Sehgal R (eds). Mesenteric principles of gastrointestinal surgery: basic and applied principles . Boca Raton: CRC Press, 2017: 333–42.)

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