

THE RETROPERITONEAL SPACE AND RETROPERITONEUM

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The non-mesenteric domain is posterior to the mesenteric domain. The space between both is termed the retroperitoneal space (Figure 65.19) (65.4). It is a conceptual space as it contains areolar connective tissue. Regions of the connective tissue were separately named Toldt's, Waldeyer's, Denonvilliers', Gerota's and Fredet's fascia, as if they are separate entities. These are merely different zones of the same connective tissue layer that is interposed between the mesenteric domain in front and the non-mesenteric domain behind. The space continues into the thorax and thereafter into the neck. This explains why, on occasion, a patient with an intestinal perforation during colonoscopy develops surgical emphysema and crepitus at the neck level. In these cases, perforation occurs into the retroperitoneal space (Figure 65.20). Gas tracks along the space into the thorax and thereafter into the neck, where it accesses subcutaneous tissue to generate surgical emphysema and crepitus. The volume of gas insufflated can be considerable given that the peritoneal cavity will not have been entered and the endoscopist may not recognise the perforation. The space may be obliterated following radiation treatment, in Crohn's disease or in longstanding diverticular inflammation. This presents considerable challenges for the surgeon who needs access to the plane whenever conducting visceral surgery .

Left mesocolon Fascia Peritoneal reflection Figure 65.19 The retroperitoneal space. (a) Digital image of the fascia (green) located in the retroperitoneal space. (Reproduced with permission from Coffey JC, Lavery I, Sehgal R (eds). *Intestinal surgery: basic and applied principles* . Boca Raton: CRC Press, 2017: 11-40 and 57-68.) (a) Figure 65.20 Perforation into the retroperitoneal space. Axial computed tomography section of the abdomen demonstrating gas (arrows) in the retroperitoneal space (a) and mediastinum (b) .

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