THE PERITONEUM

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The peritoneal cavity is the largest cavity in the body , the 2 surface area of its lining membrane (2 /uni00A0 m in an adult) being nearly equal to that of the skin (65.3). The peritoneal membrane is composed of flattened polyhedral cells (meso thelium), one layer thick, resting on a thin layer of fibroelastic tissue. Beneath the peritoneum, supported by a small amount of areolar tissue, lies a network of lymphatic vessels and a rich plexus of capillary blood vessels from w hich all absorption and exudation must occur. In health, only a few millilitres of peri - toneal fluid are found in the peritoneal cavity . The fluid is pale yellow , somewhat viscid and contains lymphocytes and other leukocytes; it lubricates the viscera, allowing easy movement and peristalsis. The parietal portion is richly innervated and, when irritated, causes sev ere pain that is accurately localised to the a ff ected area. The visceral peritoneum, in contrast, is poorly innervated and irritation causes pain that is usually poorly localised to the midline. - Summary box 65.1 Functions of the peritoneum /uni25CF /uni25CF - /uni25CF /uni25CF /uni25CF

Non-mesenteric domain In health Visceral lubrication Fluid and particulate absorption In disease Pain perception (mainly parietal) In /f_l ammatory and immune responses Fibrinolytic activity

The peritoneum has the capacity to absorb large volumes of fluid; however, the peritoneum can also produce large volumes of fluid (ascites) and an inflammatory exudate when injured (seen in peritonitis). During expiration, intra-abdominal pressure is reduced and peritoneal fluid, aided by capillary attraction, travels in an upward direction towards the dia phragm. Particulate matter and bacteria are absorbed within a few minutes into the lymphatic network through a number of ‘pores’ in the diaphragmatic peritoneum. The circulation of peritoneal fluids may be responsible for the occurrence of abscesses anatomically remote from primary disease. The two sites most prone to collection are the pelvis and subdiaphrag matic areas, reflecting the e ff ects of gravity while standing and lying, respectively .

Peritoneal re /f_l ection (c) Descending colon Peritoneal re /f_l ection Figure 65.6 The re /f_l ection at the periphery of the mesenteric domain, i.e. the junction between the mesenteric and non-mesenteric domains. (Reproduced with permission from Coffey JC, Lavery I, Sehgal R (eds). principles. Boca Raton: CRC Press, 2017.)

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