Common principles in abdominal hernia

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An abdominal wall hernia has two essential components: a defect in the wall and the content, i.e. tissue that has been forced outwards through the defect. The weakness may be through fascia and muscle, or through fascia alone, such as an epigastric hernia. It may have a bony component, such as a femoral hernia. The weakness in the wall is usually the narrow est part of the hernia, which expands into the subcutaneous fat outside the muscle. The defect varies in size and may be very small or indeed very large. The nature of the defect is important to under standing the risk of hernia complications. A small defect with rigid walls traps the content and prevents it from freely moving in and out of the defect, increasing the risk of complications. The content of the hernia may be tissue from the extra peritoneal space alone, such as fat within an epigastric hernia or urinary bladder in a direct inguinal hernia. However, if a hernia enlar ges then peritoneum may also be pulled into the hernia secondarily along with intraperitoneal structures such as bowel or omentum; a good example is a ‘ sliding type inguinal hernia. More commonly , when peritoneum is lying immediately deep to the abdominal wall weakness, pressure forces the peritoneum through the defect and into the subcu taneous tissues. This ‘ sac ’ of peritoneum allows bowel and omentum to pass through the defect. In most cases, the intra peritoneal organs can move freely in and out of the hernia, a ‘ reducible ’ hernia; however, if adhesions form or the defect is small, bowel can become trapped and unable to return to the main peritoneal cavity , an ‘ irreducible ’ hernia, with higher risk of further complications. The narrowest part of the sac, at the abdominal wall defect, is called the ‘ neck ’ of the sac. Edvard Ehlers , 1863–1937, dermatologist, Frederiks Hospital, Copenhagen, Denmark. Henri-Alexandre Danlos , 1844–1912, dermatologist, Hôpital Saint Louis, Paris, France. August Gottlieb Richter , 1742–1812, surgeon, Göttingen, Germany . space. The narrow neck acts as a constriction ring imped - ing venous return and incr easing pressure within the hernia. Resulting tension leads to pain and tenderness. If the hernia obstructed ’, partially contains bowel then it may become ‘ or totally . If the pressure rises su ffi ciently , arterial blood is not able to enter the hernia and the contents become ischaemic and may infarct. The hernia is then said to have ‘ strangu - lated ’. The wall of the bowel perforates, releasing infected, toxic bowel content into the tissues and ultimately back into the h peritoneal cavity . The risk of strangulation is highest in hernias that have a small neck of rigid tissue, leading first to irreduc - - ibility and on to strangulation. The term ‘ incarcerated ’, literally ‘in prison’, means that a hernia is not only irreducible but also potentially developing strangulation. - Summary box 64.2 Types of hernia by complexity /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF - - ’ of - In a special circumstance (Richter’s hernia) only part of the - bowel wall enters the hernia (Figure 64.5). It may be small and di ffi cult or even impossible to detect clinically . Bowel obstruc - tion may or may not be present but the bowel wall may still become necrotic and perforate with life-threatening conse - quences. Femoral hernia may present in this wa y , often with diagnostic delay and high

risk to the patient.

Occult – not detectable clinically Reducible – a swelling that appears and disappears Irreducible – a swelling that cannot be replaced in the abdomen, at risk of complications Incarcerated – irreducible, trapped, risk of strangulation Strangulated – acutely painful swelling with tissue ischaemia: requires emergency surgery Infarcted – when contents of the hernia have become gangrenous: high mortality Figure 64.5 A gangrenous Richter’s hernia from a case of strangulated femoral hernia.

between the musculofascial layers of the abdominal wall mus cle and does not contain a peritoneal sac. This is commonly seen with small Spigelian hernias (see Spigelian hernia An internal hernia describes bowel entrapment within the peritoneal cavity . This can occur in naturally existing spaces such as the foramen of Winslow or the paraduodenal and paracaecal fossae, around adhesive bands or through iatro genic defects in the mesentery .

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