THE ABDOMINAL WALL Basic anatomy and function rela

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The abdominal wall is a complex structure composed primar ily of muscle, bone and fascia. Its major function is to protect the enclosed organs but it must also enable mobility and be able to flex, extend, rotate and vary its capacity . Flexibility requires elasticity and str etch, which compromise abdominal wall strength. The roof of the abdomen is formed by the diaphragm separating the thoracic cavity above, with negative pressure, from the abdomen below , with positive pressur e. Weakness of the diaphragm can lead to much of the bowel being drawn into the chest down this pressure gradient. The bony pelvis forms the floor of the cavity but a muscular central portion, the perineum, may also weaken and allow rectum, bladder and gynaecological organs to bulge downwards, a condition called prolapse. The overall design of the abdominal muscles is best seen on transverse section through the mid-abdomen (Figure 64.1 Posteriorly the muscles are strong, further supported by the ver tebral column, ribs and pelvis. Two regions called the posterior triangles represent areas of weakness, which can lead to rar lumbar hernias. Laterally there are three thin muscle layers, the fibres of which criss-cross for strength and flexibility . Anteriorly the two powerful rectus abdominis muscles extend vertically from ribs to pelvis. Herniation through these strong muscles does not occur naturally but their central join, the linea alba, is an area of weakness that may r esult in epi gastric or umbilical herniation. Divarication of the recti is the condition where the linea alba stretches laterally as the two rectus muscles separate. It occurs predominantly in the upper abdomen in middle-aged, overweight men (Figur e 64.2 also as a result of pregnancy in women, where it is primarily - below the umbilicus. Divarication is not a hernia and does not require treatment, although some surgeons do o ff er repair for). purely cosmetic reasons. -

Non-surgical and surgical management of hernia, • including mesh Complications of hernia surgery • Other abdominal wall

conditions • Rectus abdomini s L inea alba Transversalis fascia External oblique Extraperitoneal fascia Internal oblique Parietal peritoneum Transversus abdominis Psoas Latissimus major dorsi Erector Quadratus spinae Abdominal lumborum aorta Figure 64.1 A cross-section of the mid-abdomen showing the mus

cular anatomy.

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