Abdominal wall reconstruction: an emerging and rewarding specialty

Abdominal wall reconstruction is an emerging surgical speciality. When considering hernia and fascial defects at various regions of the anterior abdominal wall, no one operation fits all.

For many patients, the cosmetic deformity is the main driver to seek surgical help, so cosmesis of the skin as well as the repair of the abdominal wall musculature is important. The author's preferred method of repair for most primary ventral hernias, especially in the presence of a weak linea alba, is a laparoscopic repair, with or without closure of the defect.

For larger ventral hernias, and nearly all incisional hernias, the author's surgical approach is the retromuscular sublay repair. Hernia dimensions are purposefully not given here; each operative approach is decided following a discussion with the patient. As Stylianides and Slade comment in this supplement (p. 151), there are few randomized data comparing one technique with another, but a recent analysis has again promoted the sublay approach (Holihan et al, 2016). Adding in the technique of peritoneal flap repair to the sublay technique (Malik et al, 2014), it is the author's view that few abdominal wall hernias cannot be repaired this way, with acceptable cosmetic and functional outcomes.

I disagree with Stylianides and Slade that the sublay repair is limited to hernias smaller than 10 cm and restricted to the midline. The lateral sublay approach – opening up the space between external and internal oblique – has been well described (Stumpf et al, 2009). This lateral space can be entered from the retrorectus plane – to get some lateral coverage around a stoma – or joining the lateral and medial space by dividing the slip of internal oblique that runs up to join the anterior fascia when incisional hernias approach or, indeed, cross the midline. As the external oblique muscle/fascia does not adhere to the costal margin, this approach allows good mesh overlap over the costal margin for subcostal incisions. Dissection behind the pubic bones (in the region well known to laparoscopic groin hernia surgeons) gives good overlap for low transverse incisions. Previous bladder resection does make closure of the posterior layer challenging at times.

The only difficult part of a sublay repair is the rare traumatic hernia when the abdominal wall muscles have been avulsed off the iliac crest. At this point, the mesh needs to be anchored to the iliac crest itself. In the author's practice, component separation techniques, either anterior or posterior, are only necessary when closing large laparostomy wounds, or when repairing the abdominal wall after tissue loss such as excision for tumour.

What mesh?

When using a sublay approach, the mesh is placed in a newly dissected plane. So even in a dirty operation, once sepsis control is obtained, the sublay dissection is perhaps at worst a clean-contaminated operation. The author favours large pore medium weight polypropylene, which seems to withstand placement in such a surgical setting with relatively few mesh-related infective complications. Even when infection ensues, exposure to the surface with modern VAC therapy allows mesh salvage in nearly all cases.

Nevertheless, the comments of Abid and El-Hayek (p. 157) are noted – the wholesale swing in the USA to using non-synthetic mesh outside the clean surgical environment was driven by theory and real concerns about synthetic mesh and infection, especially when used in the onlay, inlay and intra-peritoneal positions. Disappointingly, current 'biological' meshes have not demonstrated superiority in short-term mesh-related complications, and recurrence rates at often short (1–2-year) follow up have been poor (Primus and Harris, 2013). Remember, sometimes no mesh is better in the dirty setting – gain control of the sepsis and come back another day to repair the abdominal wall. Nevertheless, when recurrence is an important end point, even small hernias seem to benefit from mesh reinforcement (Christoffersen et al, 2013).

Yet to suggest that mesh cannot get better is to limit human progress. It was thus exciting to read the article by Hodde and Hiles (p. 162), giving a glimpse into what may be available to future surgeons. The concept of bio-engineering, providing a scaffold and giving the body the signals and even the tools to lay down a strong remodelled tissue, is intriguing, but likely possible with time. Sadly in the current climate of austerity, this may be another example of medical science advancing at a more rapid pace than the money available to pay for its use.

The message is clear – abdominal wall reconstruction is a rewarding speciality. Knowledge of abdominal wall anatomy is important, and with it, various surgical techniques. The ability to handle the skin as well as the abdominal cavity's contents is part of this speciality. Augmenting the abdominal wall with mesh of some description is nearly always necessary to minimize recurrence of the defect, and surgeons should be aware of the benefits and risks of a number of meshes currently on offer. Science is working hard to try and make such meshes more 'biocompatible', to the benefit of our patients. **BJHM**

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