OMENTUM: THE ABDOMINAL POLICEMAN
AND YOUR FRIEND: HOW TO USE IT

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“There can be no doubt that it travels about in the abdomen with considerable rapidity and is attracted by some sort of information to neighbourhoods in which mischief is brewing”

Since the earliest recorded surgical use of omentum in 1896, it has become apparent that omentum has a number of properties making it potentially useful in the management of chronic non-healing wounds. These properties are:

- Angiogenesis
- Adhesion formation
- Lymphatic drainage
- Immune function / source of immune cells
- Fat storage

The omentum is a free-hanging sheet of mesentery within the abdominal cavity, composed of arteries, veins, lymphatics and fat pads suspended in a trabecular connective tissue framework. The slippery mesothelial membrane allows passive movement of the omentum throughout the abdomen. The so called ‘greater omentum’ is the most versatile and useful part of the omentum, and has many applications in surgery.

The greater omentum is attached to the greater curvature of the stomach, and courses caudally, where, at the level of the bladder, it is reflected upon itself and travels cranially (dorsal leaf), and is attached to the spleen and pancreas. This arrangement and its blood supply allows for the omentum to be extended, creating an omental pedicle. These modifications increase the total length of the omentum to the point where it can reach any point in the cat and nearly any point in the dog. This allows the omentum to be utilized in a large number of surgeries involving all or nearly all of the animal’s body.

The technique for creating a basic omental pedicle graft is:

1. via a laparotomy (midline or paracostal) exteriorise the omentum and identify the ventral and dorsal leaves
2. identify the gastroepiploic arteries supplying vessels to the omentum
3. free the dorsal leaf from its pancreatic and splenic attachments using sharp dissection and appropriate hemostasis (particularly close to the spleen)
4. unfold the dorsal leaf caudally. This will provide sufficient omental lengthening for any intra-abdominal applications, and many extra-abdominal applications

The most common use of the omentum is as an adjunct to intestinal surgery. The omentum is either wrapped around or sutured to the intestine at an anastomosis or enterotomy site. The omentum plugs the gaps between sutures in the intestine, and provides another source of blood vessels and inflammatory cells for healing. The omentum should not be considered, though, as a replacement for good suturing technique nor will it bring about viability in a nonviable segment of intestine.

Other uses of omentum in veterinary medicine are:

1. Reconstruction of the:
   - diaphragm
d - chest wall
   - abdominal wall defects
2. Revascularization, e.g. of canine trachea
3. Absorption. The rich lymphatic and blood vascular supply within the omentum can assist in the absorption of fluids in a number of body locations. For example, in the treatment of:
   - chylothorax
   - prostatic cysts
   - pancreatic pseudocysts
4. Wound healing. Chronic, non-healing skin wounds can be assisted by omentolization. Following lengthening, the omentum is tunneled under the skin to the wound site, and sutured into place. Examples include:
   - canine skin wounds
   - non-healing wounds in cats
   - axilla wounds in cats
5. Resolution of infection
6. Sealing disrupted tissue:
   - in gastrointestinal surgery
   - following placement of gastrostomy or cystostomy tubes

The omentum is an extremely useful organ. Effective use of omentum involves being able to effectively create an omental pedicle, and move it to the site where it is needed, which may involve subcutaneous tunneling. These techniques will be described in detail, and illustrated using cases examples.

References


