Wound healing is an ever evolving field of medicine that is taking some remarkable technological leaps as we further understand the process at a cellular level.

Porcine submucosa which is available from Shoof as Biosist (see page 47 of Vet Catalogue) and is used as a biological scaffold to support the development of normal tissue rather than fibrous scar tissue. The sheets are available in single and multi-laminate packs, and can be stacked, folded or rolled for additional strength, or sutured side by side in a large defect. 1cm discs are also available for use in small wounds or as corneal grafts. Craig Irving of Eyevet Services uses Biosist extensively in corneal repairs, stitching it in place with 8-0 Vicryl.

Biosist is made up of 0.1 to 0.2mm thick acellular, non-immunogenic and biodegradable translucent sheets. Although thin, the sheets are quite strong due to a high concentration of Type 1 collagen. Other structural proteins, growth factor, cytokines and a 3-D ultrastructure, including vascular and lymphatic channels, provide a ready template for tissue repair. Over time the Bioscaffold is replaced by site-specific tissue that is able to accommodate the local mechanical and environmental stresses.

Biosist is ideal for wounds in need of granulation tissue or for chronic wounds where healing has stalled. The sheets are cut to size and then softened in saline. Moistened sheets are tucked under the trimmed wound edges and sutured in place with absorbable sutures. Good contact with the wound bed is important so that host cells can move into the scaffolding. If there is a large amount of exudate you may consider fenestrating the sheet to avoid fluid accumulation underneath. The wound is then covered with a moisture retentive dressing and movement is minimised to allow the fragile new vessels to grow into the scaffold. The bandage shouldn’t be changed for 3-4 days at which point the Biosist is often yellow-brown and almost looks purulent, but this is normal. The whole patient needs to be assessed before declaring an infection.

Biosist can be used to suture into defects in muscles, tendons and ligaments as well as specialist tissues such as bladder and blood vessels. It can be used over or in lieu of a standard internal obturator flap to repair a perineal hernia. When there is on-going stress on the repair site multi-laminate sheets are used, and in large defects such as a degloving on a horse’s leg or when a large amount of tissue is removed with a tumour the sheets can be stitched side by side. One edge needs to be in contact with the wound edge to allow cell migration.

The best thing about Biosist is that the repair tissue will align with the forces exerted on it and will regain vascularity and cellularity similar to that of normal tissue.

inFocus
HIGH-TECH HEALING
with Debra Gates BVSc.

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