

# Reconstruction Techniques with Vet BioSIST™

From the 1<sup>st</sup> Continuing Education Course for Small Animal Surgeons at the Small Animal Surgery Clinic, University of Zürich, Switzerland

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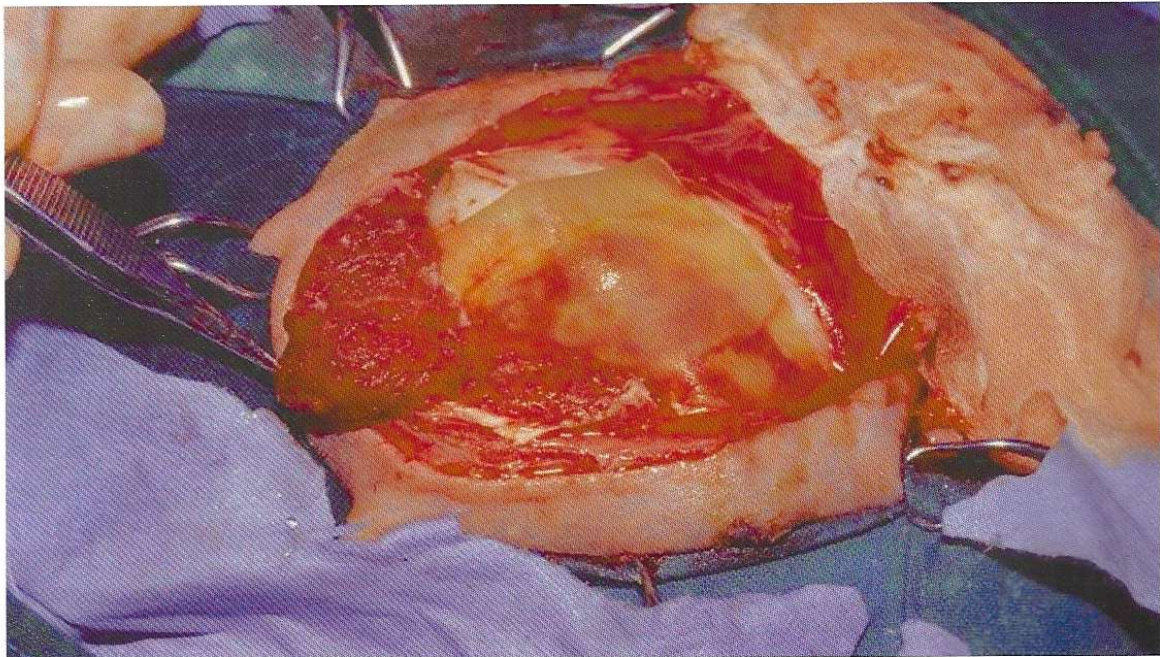
Soft tissue reconstructions may be difficult procedures when large defects are present. Preferably, an autograft should be used. For skin defects, a number of pedicle flaps and skin graft techniques are described. Abdominal wall lacerations including the diaphragm may be covered by transverse abdominal muscle or sartorius muscle flaps or omentum. The omentum may also be conducted into the thoracic cavity. Several specific auto-

genous flaps have been described in the oral cavity, in the perineal area and for musculoskeletal problems.

A well known reconstruction method for abdominal wall defects is the use of polypropylene mesh. This is a non-absorbable mesh, which is sutured to the border of the laceration. It is well tolerated by the host. However, the polypropylene mesh will never have the same properties as the tissue it replaces. Complications such as a wound infection, bowel fistula, repair failure and mesh extrusion are reported.

Continuing investigation suggested xenogenic (porcine) small intestinal submucosa (Vet BioSIST™) for repair of any defects in the human and the animal. Vet BioSIST™ consists of a natural collagen matrix with its natural integral growth factors. It is prepared into 70x100mm freeze dried sheets, which can be stored at ambient room temperature. As Vet BioSIST™ is free of viruses, bacteria and all viable cells, it makes a truly versatile surgical "aid" as it can also be trimmed, folded, rolled and rehydrated before suturing into the particular tissue bed requiring tissue regeneration.

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A large skull defect in a dog is covered by Vet BioSIST™. The trauma resulted from a bite wound. Small fragments of bone were removed, the defect bridged by Vet BioSIST™, musculature, subcutis and skin were reapposed. The dog recovered uneventfully.

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Vet BioSIS<sup>TM</sup> acts as a scaffold and stimulant for tissue regeneration and differentiation (remodelling). Vet BioSIS<sup>TM</sup> is angiogenic, rendering the graft surprisingly resistant to infection. In 8-12 weeks, it is almost entirely resorbed and replaced by similar tissue to the host. Vet BioSIS<sup>TM</sup> can be used to hasten and improve the outcome of a lot of surgical intervention, including abdominal or thoracic wall defects, clefts and palates, corneal protection, bladder repair and others.

From the 13<sup>th</sup> to the 18<sup>th</sup> of July 2001, the 1<sup>st</sup> Continuing Education Course for Small Animal Surgeons was held at the Small Animal Clinic, University of Zurich. There were a number of reconstruction techniques demonstrated utilising Vet BioSIS<sup>TM</sup> throughout the course. The first exercise was the reconstruction of a large abdominal wall defect. In chronic lacerations, the wound edges would be cut, until bleeding is observed. Then the Vet BioSIS<sup>TM</sup> was moistened, folded and trimmed to the appropriate size. It was fixed with simple interrupted sutures using

polydioxanon suture material, size 4.0. In the abdominal cavity, Vet BioSIS<sup>TM</sup> may easily be used to close large diaphragmatic hernias or missing bladder tissue. In our experience with client pets, Vet BioSIS<sup>TM</sup> was well accepted by the host and incorporated in the tissue. Lost function returned rapidly, and all of the cats treated recovered uneventfully.

In another exercise, skull defects were repaired. For this purpose, a blunt trauma to the braincase with loss of parietal or frontal bone was simulated. The resulting defect was bridged with moistened and folded Vet BioSIS<sup>TM</sup>. The sheets were fixed with polydioxanon sutures through small holes in the remaining bone or in the periosteum. Subcutis and skin were closed. It is expected, that Vet BioSIS<sup>TM</sup> will be replaced by connective tissue and not by bone. In large defects, it is therefore advisable to bridge the defect with one or two small bone plates, and to span and fix the Vet BioSIS<sup>TM</sup> onto them ●



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*is keen to hear of your experiences of our products and also to receive Vet BioSIS<sup>TM</sup> case histories, with photographs for publication in future Veterinary Observers.*

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