

題名:A study of tissue integration of porcine dermal collagen membrane

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摘要:In this study we evaluated 2 commercially available rotator cuff repair augmentation patches in an in vivo sheep model using mechanical testing and histologic techniques. Bilateral infraspinatus tears were created and repaired in 2 groups of 8 adult ewes. Each group (killed at 9 or 24 weeks) included 5 repaired with suture alone, 6 repaired and augmented with a cross-linked acellular porcine dermal (PD) patch (Zimmer Collagen Repair Patch), and 5 repaired and augmented with a porcine small intestine submucosa (SIS) patch (Restore Orthobiologic Soft Tissue Implant; DePuy Orthopaedics). At 3 weeks, sheep with suture repair and an SIS patch had significant elevation of plasma fibrinogen levels ( $P < .05$ ) whereas sheep with suture repair and a PD patch elicited no elevation in plasma fibrinogen levels. At 9 weeks, the mean failure load was 201 +/- 60 lb for suture repairs, 182 +/- 63 lb for PD repairs, and 137 +/- 16 lb for SIS repairs. Within any individual sheep, the shoulder undergoing PD repair always had a higher failure load than the contralateral suture or shoulder undergoing SIS repair. At 9 weeks, macrophages were seen on all PD surfaces whereas most of the SIS materials were resorbed. At 24 weeks, failure loads were identical between groups. Macrophages had disappeared from the PD groups, and integration of the PD patch into the surrounding tissue with vascular and fibroblastic invasion was seen. For the SIS group, diverse tissue types (including ectopic bone) were seen.