adult dog model, two 5-mm longitudinal tears were created in the avascular portion of the medial meniscus. Each tear was treated with one BioDuct® implant placed at the tear site (n=10), followed by suture repair. After 16 weeks, both knees were assessed for gross pathology, articular cartilage damage (India ink staining), and repair tissue appearance. Limbs were processed for 3T MRI and histologic examination (n=4) or biomechanical evaluation (n=6). MRI evaluation utilized a water-sensitive, moderate echo time fast spin echo protocol previously applied clinically, with a resolution of 175 μm by 187.5 μm by 1.2 mm. Meniscal healing was made based on the presence or absence of fluid inhibition into the repair site as well as any discernible fragmentation. Results: In vitro, the PLLA and 85/15 materials did not lose mass throughout the study. The 50/50 and 10/90 samples began into the repair site as well as any discernible fragmentation. was made based on the presence or absence of fluid inhibition into the repair site as well as any discernible fragmentation.

Results: In vitro, the PLLA and 85/15 materials did not lose mass throughout the study. The 50/50 and 10/90 samples began to lose mass after 3 and 1 week, respectively and were almost completely degraded by 7 weeks. The inherent viscosity of the materials decreased more rapidly with increasing PGA content. The 3-point bend and crush strength properties of the implants were found to decrease with time, with the exception of PLLA.

In vivo, all of the BioDuct® implant groups provided functionally healed avascular meniscal tissue in the dogs, independent of bioabsorbable polymer tested. Tear strengths of the repaired avascular tissue acquired 35-58% of contralateral, unoperated tissue (Fig. 1). Histological analysis showed evidence of tissue ingrowth and guided tissue engineering through the lumen of the conduit (Fig. 2). MRI analyses confirmed healing in 6 out of 8 anterior repairs and 7 out of 8 posterior repairs where the conduit was used (Fig. 3). Mild to moderate synovitis and chondral defects not necessarily associated with the use of the implant were observed with MRI; however, these defects were not apparent at gross necropsy via India ink staining.

Conclusions: This study demonstrated the success of BioDuct® repair in enabling healing of avascular tear in a dog meniscus, independent of the PLA/PGA materials tested.

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SPECIFIC FACTORS ARE ASSOCIATED WITH FAILURE OF MENISCUS SUTURE REPAIR
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Purpose: Meniscus repairs with sutures have become more common as the importance of preserving the meniscus has been established. Studies have shown a high rate of repeat surgery, but it is unclear what factors contribute to failure. The purpose of this study was to determine what factors lead to failure of suture meniscus repair. Failure was operationally defined as repeat surgery on the meniscus within 2 years of the repair.

Methods: Two hundred eighty-three (283) meniscus suture repairs were performed by a single surgeon. The average patient age was 31 years (range, 18 to 71). There were 177 males and 106 females. All repairs were completed with an inside-out suture technique. One hundred thirty-seven (137) had an ACL reconstruction and meniscus repair (93 concurrent reconstructions and 44 two-staged ACL reconstructions). One hundred eighty-one (181) medial menisci and 102 lateral menisci were repaired. Of the medial repairs, 80% were in the posterior third of the meniscus, 11% in the middle third, 1% in the anterior third, and 8% extended to all areas of the meniscus. Of the lateral meniscus repairs, 49% were in the posterior third, 26% in the middle third, 22% in the anterior third, and 3% extended to all areas.

Results: Twenty-eight (28) patients (10%) had required repeat surgery on the repaired meniscus within the first 2 years and were considered failures. The average time to repeat meniscus surgery was 12 months (range, 2.5 to 24 months). There were no differences based on age, gender or location. Thirteen percent (13%) of medial repairs and 4% of lateral repairs failed (p=0.012). Medial meniscus repairs failed significantly earlier (5.6 months) than lateral meniscus repairs (12.9 months) (p=0.001). For patients who had ACL reconstruction and meniscus repair, factors associated with failure included age (failed age=22; non-failure age=29; p=0.013), and concurrent ACL reconstruction (two-staged repair failures=2%; concurrent repair failures=11%; p=0.04).

Conclusions: Failure of suture repair of the meniscus within the first two years following index repair is more likely to occur in medial meniscus repairs and in young patients who had a repair and concurrent ACL reconstruction.

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USING A CULTURE MODEL OF HUMAN TENOCYTES TO INVESTIGATE THE EFFECTIVENESS OF TENDOACTIVE® FOR THE PROPHYLAXIS AND TREATMENT OF TENDINOPATHIES
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Purpose: Tendons have a limited capacity for self-repair due to low cell density and little mitotic activity. Pro-inflammatory cytokines such as interleukin-1β (IL-1β) have been identified as the main initiators of tendinopathies, stimulating inflammation, apoptosis and extracellular matrix (ECM) degradation. The aim of this study was to evaluate the potential of Tendoactive®, a nutraceutical formulation that contains mucopolysaccharides, hydrolyzed type I collagen and vitamin C, in an in vitro model of tendon inflammation.

Methods: In monolayer cultures, primary human tenocytes were either treated with Tendoactive®, non-stimulated or stimulated with