Bio Cellular Regenerative Repair of Traumatic Full Thickness Tear of Abdominal Wall Rectus Musculature Using Tissue Stromal Vascular Fraction

Robert W Alexander*  
Department of Surgery, University of Washington (Seattle) School of Medicine & Dentistry, USA

This paper presents a clinical example of the use of biocellular matrix composed of adipose-derived tissue Stromal Vascular Fraction (AD-tSVF) regeneration of full thickness abdominal wall muscle traumatic full thickness tear.

Combination of sterile, disposable microcannula surgical harvest (Tulip Medical GEMS, San Diego, CA, USA) of subdermal adipose stroma PLUS High Density Platelet Concentrates (HD PRP ≥ 7.5 X baseline) (Emcyte, Fort Meyers, FL, USA) mixed, with sterile placement into intramuscular defect resulted in regeneration of the muscle tissue without residual scar formation.

**Case**

A 29-year-old professional football player injured by blunt trauma (helmet) sustained a very painful, incapacitating full-thickness rupture of the right Rectus Abdominis Muscle. Ultrasound imaging (Figure 1) confirmed Grade III full-thickness defect with pain, slight bruising and evidence of muscle dehiscence within the muscle sheath. A 25cc tSVF graft (centrifuged compressed) combined with 30% HD-PRP (7.5 cc) was inserted directly into defect. Pain relief within 48 hours, complete remodeling without scar at 5 weeks, return to full contact within 14 days after treatment.

**Figure 1:** (Left) Full-thickness Defect Rectus Abdominal Muscle (Intact muscle sheath, distracted muscle tear, edema); (Right) Post Biocellular Treatment 5 weeks (note no scar generated, normal muscular echo texture).