TREATMENT OF LUMBAR DEGENERATIVE DISC DISEASE WITH ADIPOSE DERIVED STROMAL VASCULAR FRACTION, POINT OF CARE

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Introduction: Lumbar Degenerative Disc Disease (LDDD) is a common and potentially incapacitating condition. LDDD, in the advanced stage, is usually non-responsive to conservative therapy and frequently requires aggressive and complex spine surgery. Hence, we present a case in which intra-discal SVF was used to treat a patient with advanced LDDD.

Methods: A 45 y/o female patient with intractable low back and lower extremity radicular symptoms due to advance LDDD at L-5, was evaluated with lumbar MRI and lumbar discography. Disc morphology was consistent with a herniated disc and central absence of nuclear material. 50cc of liposapirate was obtained and processed into SVF using standard procedures via lecithin based emulsification and centrifugation, yielding 93% viability. The SVF (approximately 10 x 10 x 6 MSC) was combined with 4:1 with platelet rich plasma/1.5gm of micronized collagen. This was injected through a 22g needle in the L5 disc nucleus and annulus.

Results: The patient was followed at 1, 3, 6 months and evaluated for potential complications, medication use, pain relief, presence adjacent level degeneration and anatomical changes in the treated lumbar disc. No significant adverse reactions were noted in the immediate post operative period. The pain relief was 30% at month 3 and 90% at month 6. Repeat lumbar MRI at month 6 was positive for increase T2 signal in the L5 nucleus consistent with production of ECM and proliferation of chondrocytes. Furthermore, there was preservation of disc height at the treated level and the adjacent discs level.

Conclusions: By utilizing a combination of point of care, growth factors (PRP), collagen scaffolding (micronized) and Adipose derived SVF, we were able to regenerate the intervertebral nucleus and provide curative pain relief. To our knowledge, this is the first case in the US, where non-expanded cell therapy was used to treat advance LDDD successfully. Further biologic scaffolding research is needed in order to optimize cell therapy.