Review by Michael W. Wolff, MD
Revised 3/12/2026

Long-term Investigation of Annulargrams and Intra-annular Fibrin to Treat Chronic Discogenic Low Back Pain and Radiculopathy: 1-, 2-, and 3- Year Outcome Comparisons of Patients with and without Prior Surgery

Pain Physician 2024; 27:537-553 • ISSN 1533-3159

Background: This article reviewed the effectiveness and safety of fibrin injections into the annulus of damaged painful discs over a three-year period. Chronic low back pain (cLBP) is commonly associated with the disc as the etiology (discogenic). Disc degeneration leads to reduced function of both the inner disc (nucleus) and outer disc (annulus) which is made up of 15-25 alternating layers of collagen. Disc degeneration often leads to annular disruption (tears). There are pain sensitive nerve fibers in the outer annulus where the degeneration occurs. This ultimately results in both a biochemical and a biomechanical component of discogenic cLBP. This study explores the use of fibrin injected into the annulus of the disc to treat annular defects/tears. Fibrin acts as a bioactive 'glue' with ability to mechanically seal the disc tears and also contains factors that contribute to repair of disc annulus (collagen) back to a healthier less painful disc.

Study Design: This study is a retrospective cohort study that (prospectively) reported outcomes in 827 patients that had chronic low back pain (cLBP) treated with annular injections of fibrin (Discseel®). All patients had cLBP for > 6 months and had failed multiple other treatments. Mean average age of patients was 56 years old. 30% of patients were female, 60% were male. 20%

of participants (160) had cLBP despite prior back surgery (fusion or discectomy) and 667 patients had no history of prior lumbar surgery.

Results: The study reported significant improvement one, two and three years after treatment. Improvements were often initially reported as early as 3-6 months. One year outcome measures (ODI) showed approximately 50% of patients (400) had significant improvement in both relief of pain and improved function. Of these improved patients, 74% were improved by 50%, and 40% were improved by ≥75%. Age and BMI did not have an impact on the outcome. Those patients who had LBP with a history of prior surgery also reported significant improvement. However, there was greater improvement seen in the non-surgical group. There were no serious adverse events reported in the study. Benefits were sustained to the end of the three-year study. At the end of the three-year study, 74% of the participants said they were satisfied with their outcome, 31% of participants said their expectations were met, 43% of participants reported that they were improved enough that they would consider repeat treatment in the future if needed.

Conclusion: this study demonstrates significant long-term benefits of intra-annular fibrin injection (Discseel®) to effectively improve discogenic chronic LBP. The benefit was sustained for at least three years (length of the study). Benefits were seen in patients who failed extensive prior treatments including: discectomy, fusion, intradiscal injections with platelet rich plasma (PRP) or bone marrow aspirate.

NON SURGICAL
DISCSEEL®
SPINE PROCEDURE