

### Case Description

Setting: Tertiary Care Academic Hospital  
Patient: 26-year-old male

- 26-year-old male presented with a 3-week history of acute low back pain experienced while working out. Patient reported severe left lower back pain without radiation exacerbated by flexion and without associated weakness/numbness.
- Patient's physical exam was unremarkable. MRI revealed left L5-S1 paracentral disc herniation and annular tear with effected L S1 nerve root.
- Patient was treated conservatively with therapy. At 1-month follow-up after four sessions patient received left L5-S1 TFESI and L2-L3 interspinous ligaments trigger-point injections in setting of non-improved pain. At follow-up 7 months later - after three additional therapy sessions - pain was mildly improved and 3 months later patient received bilateral L5-S1 TFESI in setting of non-resolved pain. At subsequent 4-month follow-up pain was still present and patient received bilateral L5-S1 TFE and interspinous ligament L2-L3 PRP injections. At final 3-month follow-up patient reported resolution of pain with painless functional range-of-motion and return to baseline activity/exercises within 1 week of PRP injections.

### MRI



MRI revealed left L5-S1 paracentral disc herniation and annular tear with effected L S1 nerve root.

### Conclusion

- PRP is an effective treatment for pain in degenerative musculoskeletal conditions such as knee OA and IVD degeneration
- Further studies are necessary to evaluate its potential in addressing pain and function in acute discogenic injuries and other acute non-degenerative musculoskeletal conditions.

### References

Mohammed S., Yu J. Platelet-rich plasma injections: an emerging therapy for chronic discogenic low back pain. *Journal of Spine Surgery*. 2018;4(1):115-122. doi: 10.21037/jss.2018.03.04.

Akeda, K et al. Platelet-rich Plasma in management of chronic low back pain: Critical Review, 2019. *J Pain Res*. 2019; 12: 753-767. Published online 2019 Feb 25. doi: 10.2147/JPR.S153085

Levi, D et al. Intradiscal Platelet-Rich Plasma Injection for Chronic Discogenic Low Back Pain: Preliminary Results from a Prospective Trial . *Pain Med*. 2016 Jun;17(6):1010-22. doi: 10.1093/pm/pnv053. Epub 2015 Dec 26.

Akeda, K et al. Intradiscal Injection of Autologous Platelet-Rich Plasma Releasate to Treat Discogenic Low Back Pain: A Preliminary Clinical Trial. *Asian Spine J*. 2017 Jun; 11(3): 380-389. Published online 2017 Jun 15. doi: 10.4184/asj.2017.11.3.380

Meheux, C et al. Efficacy of Intra-articular Platelet-Rich Plasma Injections in Knee Osteoarthritis: A Systematic Review. *Arthroscopy*. 2016 Mar;32(3):495-505. doi: 10.1016/j.arthro.2015.08.005. Epub 2015 Oct 1.

### Discussion

- Low back pain is a leading cause of disability and medical expenditure worldwide and intervertebral disc (IVD) injury is a common etiology.
- Platelet-rich plasma (PRP) therapy has known potential for soft-tissue regeneration/repair and treatment of certain degenerative musculoskeletal conditions, specifically knee OA.
- Recently there has been promising research regarding PRP in treatment of IVD degeneration but research regarding pain and function in acute injuries unfortunately remains limited.
- Further clinical trials are warranted to evaluate effectiveness of PRP in addressing pain and function in acute disc injuries and the variables – specifically age, extent of injury, concurrent use of contrast, and presence of degenerative conditions – that may influence it.