Treating refractory coccydynia with ultrasound-guided platelet-rich plasma injection: a case report

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Introduction

Coccydynia is a localized pain syndrome, representing an estimated 1-3% of back pain disorders, which arises from the coccyx and its surrounding structures (e.g. posterior sacrococcygeal ligament, sacrococcygeal joint). The etiology of coccydynia is poorly understood; but is thought to most commonly be due to acute or repetitive trauma. Non-traumatic causes include degenerative joint disease, hyper/hypomobility of the sacrococcygeal joint, infection, or morphological variance.

While typically mild and self-limiting, conservative treatments are generally effective for persistent coccydynia (e.g. seating cushions, posture retraining, ice/heat). Interventional treatments performed under ultrasound or fluoroscopic guidance may be indicated for refractory cases (e.g. SCJ steroid injections, ganglion impar blocks). Surgical intervention with coccygectomy is a last resort option with highly variable results.

Platelet-rich plasma (PRP) is a steroid sparing agent comprised of concentrated, autologous blood which may be introduced to pain-generating structures to provide pain relief and stimulate growth.

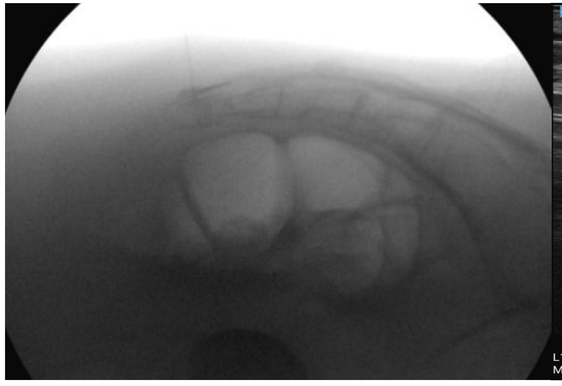
We present this case of refractory coccydynia successfully treated with ultrasound-guided PRP injection to contribute to the existing catalog of cases that have shown similar success.

Case Report

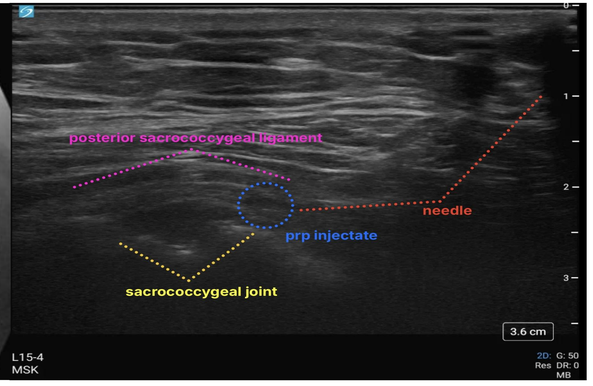
Patient: 49-year-old male
Setting: Outpatient PM&R clinic one year after right anterior total hip arthroplasty
Chief Complaint: persistent, severe coccygeal pain exacerbated by ambulation, hip flexion, prolonged sitting
Physical Exam: significant for tenderness specifically to lateral translation of the posterior sacrococcygeal ligament.

Management prior to PRP:
-Therapeutic/Adaptive: physical therapy, cognitive behavioral therapy, pelvic therapy, seating modification with a coccyx-sparing donut cushion
-Medical: celecoxib, cyclobenzaprine, duloxetine, topical lidocaine, topical diclofenac
-Interventional: ganglion impar block with simultaneous sacrococcygeal joint injection, coccygeal nerve blocks
Provided modest pain relief but significant pain with sitting continued which greatly impacted the patient's QOL.

PRP treatment (3 injections, 3 months apart):
-Location: superficial posterior sacrococcygeal ligament
-30cc PRP kit, administered via standard in-office ultrasound guidance
-Treatment #1: 75% improvement in pain for 3 months
-Treatment #2: 100% improvement in pain for 3 months
-Treatment #3: 100% pain relief and significant QOL improvement ongoing at five-month follow up



Ganglion impar block with sacrococcygeal joint injection via fluoroscopy



PRP administration to posterior sacrococcygeal ligament via ultrasound guidance

Discussion

1. The superficial posterior coccygeal ligament may be a pain generating structure that is distinct from the sacrococcygeal joint space.
2. Ultrasound-guided injections may offer additional benefit for the treatment of coccydynia due to visualization and specific targeting of the superficial posterior coccygeal ligament and other surrounding soft-tissue structures.
3. There may be some pathologies or pain-generators that respond to PRP but are not responsive to steroids.
4. PRP may provide additional benefit compared to corticosteroid. This could be explained by PRP stimulation of collagen production and promotion of joint strengthening as opposed to corticosteroid suppression of collagen production and promotion of joint degeneration.

References

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