



# PERCUTANEOUS A1 PULLEY RELEASE, A CLINICAL STUDY.



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## INTRODUCTION

Trigger finger is managed with splintage, NSAIDs, injections or open release.<sup>1,2</sup> Percutaneous release has become an alternative and cadaveric studies have established the safety and efficacy.<sup>2-10</sup> Bain et al advised that it was potentially hazardous in the thumb due to the close proximity of the digital nerves.<sup>10</sup> Pope et al reported the same concerns with the index finger.<sup>2</sup>

## MATERIALS AND METHODS

Twenty-five patients (30 fingers) with an average duration of symptoms of 13.9 had involvement of the 9 middle, 15 ring and 6 little fingers. Patients with triggering of their thumb were not offered a percutaneous release, due to the close proximity of the digital nerves.<sup>10</sup>

## TECHNIQUE

1. Local anaesthetic was infiltrated into the subcutaneous tissues at the skin markings for the proximal edge of the A1 pulley (Fig 1).



FIG 1

2. With the fingers extended a 14 gauge catheter needle was introduced through the skin at this same site. It was inserted just into the FDS tendon and active flexion of the finger caused the needle to move. The needle was then withdrawn slightly and the bevelled edge of the needle was levered to cut the thickened fibrous A1 pulley (Fig 2).
3. The needle was removed and a satisfactory release was confirmed by the patient being unable to reproduce the triggering.
4. The patients were instructed to mobilise the finger and to passively hyperextend the PIP joint to prevent contracture.
5. All cases were reviewed at one week following release and 2 months later.



FIG 2

## RESULTS

1. The procedure was well tolerated.
2. At one week 14 patients reported no pain, 10 had minimal pain and 5 had moderate pain. In one case the tenderness persisted for two months before it resolved
3. Twenty-three digits had a full ROM at the PIP joint at one week. At final review all patients obtained their pre-release motion or had improved. Two patients had a flexion contracture prior to release which persisted.
4. One patient reported pain with associated clicking which was managed with an open release after two months.
5. There were no other complications from the procedure. There were no digital nerve injuries or infections. There was no clinical evidence of tendon injury nor bowstringing of the tendon.

## RECOMMENDATIONS

1. **Percutaneous release** for reproducible mechanical triggering of a finger with a tendon nodule (Fig 3).
2. **Steroid injection** for patients with tenosynovitis or triggering which is not reproducible at the time of consultation.
3. **Open release** for complicated cases such as florid tenosynovitis, locked digit, involvement of the thumb, or failed an open or percutaneous release.

Other percutaneous studies have reported a similar high level of successful release,( 74-94%) with no reported infection, digital nerve injury or bowstringing following percutaneous release.<sup>7,9</sup> Open surgical release has a comparable reported success (60-97%).<sup>3,6</sup>

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## RECOMMENDED MANAGEMENT

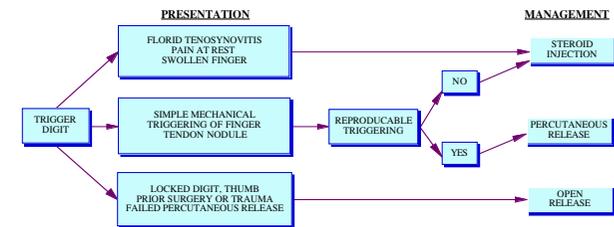


FIG 3

## CONCLUSION

Percutaneous A1 pulley release is a simple, safe and effective method to manage simple trigger finger that can be performed in the clinic. The patients recover quickly without significant risk of complications or loss of motion. We recommend a steroid injection for patients with tenosynovitis and those who do not have reproducible triggering at the time of presentation. The open technique is reserved for complicated cases such as florid tenosynovitis, locked digit, failed percutaneous release or those involving the thumb.

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