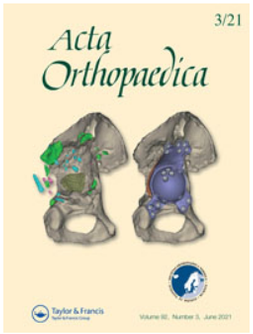

Acta Orthopaedica Scandinavica

ISSN: 0001-6470 (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/iort19

Percutaneous treatment of trigger finger: 34 fingers followed 0.5-2 years

Bülent Cihantimur, Selçuk Akin & Mesut Özcan

To cite this article: Bülent Cihantimur, Selçuk Akin & Mesut Özcan (1998) Percutaneous treatment of trigger finger: 34 fingers followed 0.5-2 years, Acta Orthopaedica Scandinavica, 69:2, 167-168, DOI: 10.3109/17453679809117620

To link to this article: https://doi.org/10.3109/17453679809117620

Percutaneous treatment of trigger finger

34 fingers followed 0.5–2 years

Bülent Cihantimur, Selçuk Akin and Mesut Özcan

We performed percutaneous A1 pulley release on 34 trigger fingers in 30 patients with an angiocath needle. Complete release was achieved in all fingers. There were no complications and no recurrences during mean 0.5 (1–2) years follow-up.

Department of Plastic and Reconstructive Surgery, Division of Hand Surgery, Medical Faculty of Uludag University, Bursa, Turkey. Tel +90 224-4428193. Fax -4428079
Submitted 97-05-11. Accepted 97-11-21

Stenosing tenosynovitis, or trigger finger, is a common clinical entity caused by a disproportion between a flexor tendon and its sheath and presents with pain, swelling and triggering of the affected digit during finger motion. If closed treatments fail, surgical release is generally recommended, commonly performed through a small palmar incision. Successful results have been reported in up to four fifths of the patients (Bonnici and Spincer 1988), but complications such as infection, digital nerve injury, recurrence, stiffness, weakness, scar tenderness and bowstringing of the flexor tendons have been described (Bonnici and Spincer 1988, Heithoff et al. 1988, Thorpe 1988).

The technique of percutaneous release of the A1 pulley was first described by Lorthioir in 1958. Recently, other authors have reported that percutaneous release can be easily, quickly and safely performed in the out-patient clinic (Eastwood et al. 1992, Bain et al. 1995, Pope and Wolfe 1995). We investigated the effectiveness and safety of percutaneous release of the A1 pulley.

Patients and methods

34 trigger fingers in 30 patients (mean age 58 (50–69) years, 16 women) were treated by the method of Eastwood et al. (1992). All patients had typical symptoms of painful triggering for at least 4 months and all had a palpable nodule in the palm. There were 4 thumbs, 6 index fingers, 12 long fingers, 9 ring fingers and 3 little fingers.

All patients were reviewed on days 3, 7, 15, 30 and at 6 weeks and 2 months postoperatively. With all patients, telephone interview was conducted at an average of 12 months (6–24) after the operation.

The procedure was performed under local anesthesia. Precise location of the A1 pulley is important. If the tendon nodule is palpable, the point of triggering can be located easily on clinical examination. In the thumb, the radial digital nerve passes diagonally across the flexor pollicis longus tendon from the ulnar to the radial side. The site of this crossing is a few millimeters proximal to the metacarpophalangeal flexion crease of the thumb.

The finger is held firmly and hyperextended at the metacarpophalangeal joint. Hyperextension is essential, as it causes the flexor tendon sheath to lie directly under the skin and allows the digital neurovascular bundles to displace to either side. A 22-gauge needle is inserted into the flexor tendon and the position of the needle in the tendon is confirmed by actively flexing the digit and observing the motion of the needle. The needle is then withdrawn slightly until it ceases to move with flexion of the finger tip. At this point the needle is lying in the A1 pulley. A 16-gauge angiocath needle is then inserted through the skin to the same depth and along the previous needle track. The A1 pulley is cut by moving the bevel of the needle longitudinally from proximal to distal . A grating sensation can be felt by the operator as the needle tip cuts through the transverse fibers of the A1 pulley. The loss of the grating sensation indicates completion of the release. The patient is asked to flex and extend the finger to verify the success of the procedure. Adequate release of the pulley was shown by disappearance of the triggering on active movement of the digit. Under local anesthesia, the patient can easily do this during the operation. If a patient demonstrated continued triggering, the needle was reinserted more distally and additional release was performed. A small dressing is used to cover the wound for 3 days and the patient then returns to normal activities.

Results

Complete release was achieved in all digits. All patients were satisfied and none required further treatment. There were no digital nerve or flexor tendon injuries in any fingers or thumbs. All fingers recovered a full range of movement, with no triggering. The pain was completely relieved in 32 digits and partially relieved in the remaining 2 digits at the 6-week follow-up. Only one patient complained of local swelling and induration in the long finger at the 2-month follow-up. There were no long-term complications.

Discussion

In our study, all 34 A1 pulleys were successfully released. We had no difficulties when releasing the A1 pulley in the little and index fingers. This is in contrast to other studies. Because of proximity of digital nerves, Pope and Wolfe (1995) do not perform percutaneous release in the index finger. Bain et al. (1995) reported the same problem for the little finger. In our opinion, there are 3 important points for preventing nerve injury.

1. The finger must be held firmly and hyperextended at the metacarpophalangeal joint.

2. Precise location of the A1 pulley and flexor tendon must be determined with a thin needle.

3. The angiocath needle must be moved exactly along the tendon's route.

If these rules are respected, the risk of nerve injury will be minimized. Flexor tendon injuries can be reduced by determining the flexor tendon's depth and position with a thin needle.

Only 4 trigger thumbs were released in this study. All releases were successful, but the close proximity of the digital nerves of the thumb makes percutaneous release of the A1 pulley potentially hazardous. If the needle is inserted a few millimeters distal to the metacarpophalangeal crease, nerve damage will be prevented.

Short-term stenosing tenosynovitis in any digit is probably best treated by steroid injections. However, when injection therapy is insufficient, percutaneous release of the A1 pulley with a needle is, we believe, the best treatment.

References

Bain G I, Turnbull J, Charles M N, Roth J H, Richards R S. Percutaneous A1 pulley release: A cadaveric study. J Hand Surg1995; 20A: 781-4.

Bonnici A V, Spincer J D. A survey of "trigger finger" in adults. J Hand Surg 1988;13B: 202-3.

Eastwood D M, Gupta K J, Johnson D P. Percutaneous release of the trigger finger; an office procedure. J Hand Surg 1992; 17A: 114-7.

Heithoff S J, Millender L H, Helman J. Bowstringing as a complication of trigger finger release. J Hand Surg 1988; 13A: 567-70.

Lorthioir J. Surgical treatment of trigger finger by a subcutaneous method. J Bone Joint Surg (Am) 1958; 40: 793-5.

Pope D F, Wolfe S W. Safety and efficacy of percutaneous trigger finger release. J Hand Surg 1995; 20A: 280-3.

Thorpe A P. Results of surgery for trigger finger. J Hand Surg 1988; 13B: 199-201.