ABSTRACT

Purpose. To evaluate the condition of the tendons and neurovascular bundles after percutaneous release for trigger finger of the middle, ring, and little fingers.

Methods. 30 women and 13 men aged 20 to 55 (mean, 40) years underwent percutaneous release of the A1 pulley using a 18-gauge needle for 43 trigger fingers of the middle, ring, or little finger unresponsive to conservative treatment. 19 trigger fingers were grade II and 24 were grade III. Open exploration was performed to evaluate the condition of the tendons and neurovascular bundles after percutaneous release.

Results. Incomplete release of the A1 pulley was noted in 3 fingers, which occurred during the early study period. Superficial flexor tendon laceration was noted in 6 fingers but this did not interfere with tendon function. No injury to the A2 pulley, nerve, or artery of any finger was noted.

Conclusion. Percutaneous release of trigger fingers is quick, safe, and effective.

Key words: flexor tendon entrapment; trigger finger disorder

INTRODUCTION

Stenosing tenosynovitis or trigger finger is characterised by pain, swelling, movement limitation, and a triggering sensation of the finger. The primary pathology is thickening of the A1 pulley, with resultant entrapment of the flexor tendon.1 Conservative treatment (steroid injection, anti-inflammatory drug use, and splinting) has a success rate of 50% to 92%.2 When conservative treatment fails, surgical release of the A1 pulley is indicated and has a success rate of up to 100%.3 Complications of surgical release include infection, digital nerve injury, scar tenderness, and joint contractures.3 Percutaneous release of the A1 pulley results in a low complication rate and high patient satisfaction.4 Nonetheless, percutaneous release is not advised for the thumb and index fingers because of the proximity of the digital nerves to the needle insertion site.5 This study evaluated the condition of the tendons and neurovascular bundles.
after percutaneous release of the middle, ring, and little fingers.

**MATERIALS AND METHODS**

Between January 2013 and January 2014, 30 women and 13 men aged 20 to 55 (mean, 40) years underwent percutaneous release of the A1 pulley using a 18-gauge needle by a single surgeon for 43 trigger fingers of the middle, ring, and little fingers unresponsive to conservative treatment. 19 trigger fingers were grade II and 24 were grade III. Symptoms included tenderness over the A1 pulley, tendon nodule and pain with flexion and extension, and triggering. Patients with trigger thumb or index finger were excluded because of the proximity of the digital nerves, the A1 pulley, and the needle insertion site.5

The needle was introduced through the metacarpophalangeal crease and into the flexor tendon. The middle phalanx was slightly flexed and extended to observe needle movement, and the needle was slightly withdrawn until there was phalanx motion but no needle motion. The sharp edge of the needle was moved around without extending distally in the longitudinal axis of the A1 pulley to prevent damaging the A2 pulley. The sudden relief of resistance at the needle tip ensured adequate release. Open exploration was performed to evaluate the condition of the tendons and neurovascular bundles after percutaneous release.

**RESULTS**

Incomplete release of the A1 pulley was noted in 3 fingers, which occurred during the early study period. Superficial flexor tendon laceration was noted in 6 fingers but this did not interfere with tendon function. No injury to the A2 pulley, nerve, or artery of any finger was noted.

**DISCUSSION**

Most patients with mild to moderate trigger finger are treated conservatively with extension splints, anti-inflammatory drugs, or steroid injection.6 Open release of the A1 pulley is standard treatment for patients unresponsive to conservative treatment. Nonetheless, it results in pain at the surgical site for up to 2 weeks and potential complications such as wound infection, and digital artery or nerve injury.7 Percutaneous release of the A1 pulley is quick, safe, effective, and decreases rehabilitation time. It has a success rate of 90% to 95%.8–13 It can also be performed using an endoscopic carpal tunnel knife12 or a 20-G hypodermic needle.13

**DISCLOSURE**

No conflicts of interest were declared by the authors.

**REFERENCES**