CASE DESCRIPTION

Settings: Outpatient rehabilitation clinic.

A 31 year old Caucasian male presented with history of persistent right hand pain after falling onto his right hand with his wrist and metacarpophalangeal joint in flexion. Patient reported six month history of right hand pain. Pain was located on the lateral side of the dorsum of the hand and described as dull and aching, 5 out of 10 (VAS). No neuropathic symptoms were noted. The pain was reproduced during activities such as push-up exercises or opening jars. NSAIDs and a hand brace only partially improved pain. Physical examination revealed tenderness to palpation in the second web space with positive Bunnel test. X-Ray of the hand was normal. Ultrasound examination revealed hypoechoic areas over distal posterior interosseous muscle, and increased thickness of the deep transverse metacarpal ligament. MRI was initially reported normal, but further examination revealed adhesions between the lumbrical and interosseous muscle. Conservative management did not improve pain. Utilizing ultrasound for guidance, a steroid injection was given at the level of the adhesions in the dorsal interosseous muscle. This injection relieved approximately 60% of the pain. At a 2-month follow up a repeat injection provided further relief. Approximately 1 year after last injection patient reported complete resolution of the symptoms with negative Bunnell test.

METHODS

Dexamethasone sodium phosphate, commercially available as USP 4mg/ml vials, was used. Standard storage techniques and safety protocols were followed per the manufacturer’s recommendations. Care was taken to avoid injection into blood vessels by gentle aspiration of the needle. The patient received a total of 4mg approximately with subjective improvement in hand pain.

ULTRASOUND OF THE HAND

Normal Hand

Painful Hand

MRI OF AFFECTED HAND

DISCUSSION

Symptomatic adhesion can occur after injury or microtrauma to the hand. Adhesions can be located between the lumbrical (L) and the interosseous muscle (IO), the MP joint capsule, or the dTML. The term “saddle deformity” is used to describe IO-L adhesions impinging on the dTML during intrinsic contraction causing pain.

The interossei (DI: dorsal; PI: palmar) are dorsal to and the lumbricals (L) are volar to the dTML. Adhesions can occur between (1) the interossei and the dTML; (2) the lumbricals and the dTML; (3) the lumbral and the interossei distal to the dTML; or (4) all structures in the webspace at the level of the metacarpal head. IF: index finger; LF: long finger; RF: ring finger; SF: small finger.

DIFFERENTIAL DIAGNOSIS

Differential Diagnosis: Dupuytren’s contracture, trigger finger, ligamentous sprain/tear, carpal tunnel syndrome, arthritis, fractures.

TREATMENT

Rest
Activity modification
NSAIDS
Rigid splitting for 6 weeks and for any aggressive activities Range of motion and strengthening for 4 weeks
Surgical release

CONCLUSION

Intrinsic hand muscle adhesion is not uncommon after hand injury and needs high index of suspicion for diagnosis. Ultrasonic guided injection of steroids can be used as a treatment of posttraumatic interosseous-lumbral adhesions prior to consideration of surgery.

REFERENCES