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Ten Trigger Fingers in an Adult Man : A Case Report

Trigger finger is a common disease particularly in the middle aged women. A very rare case in which an adult man had 10 trigger fingers was experienced. He was treated with local steroid injections in both thumbs, but trigger finger disease has been aggravated in every digit of both hands. We performed an early operative treatment. Three months after the operation, the patient could perform his work without discomfort in his hands and showed normal range of motion in all fingers.

Key Words : *Trigger Finger Disorder; Ten Fingers; Causality; Surgery Operative Therapy*

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INTRODUCTION

Trigger finger is caused by a disproportion between the tendon and its sheath, specifically in the A1 pulley. It causes hand pain and disability. The most common form of the trigger finger is the primary type, which is far more common in the middle aged women than men (1, 2). Secondary type of trigger finger is often encountered in patients with chronic illnesses such as diabetes, rheumatoid arthritis, gout, renal disease and hypothyroidism (3, 4). However, the exact etiology remains controversial.

We experienced an unusual case, in which trigger finger was developed in all ten fingers of an adult man. This report identifies the suspected causes of the dysfunction, and presents a brief review of relevant findings and the results of operative treatment.

CASE REPORT

A 39-yr-old man visited the clinic due to trigger finger disease in every digit of both hands which had been aggravated during the past 3 months. A year ago, the patient was treated three times with local steroid injections in both trigger thumbs. Since childhood, the patient has suffered from tingling sensation, coldness and bluish discoloration of his fingers during winter and cold weather. Therefore, the patient had to constantly wear gloves.

The patient's symptom was aggrevated after changing his occupation to a laborer 3 months ago. He had worked for 6 hr a day and 6 days a week by using vibrating tools with forceful hand grip such as grinders.

His mother and maternal aunt also had a history of operative treatments due to multiple trigger fingers. Examination showed obvious nodules on the A1 pulleys in both thumbs, middle fingers and ring fingers for which the patient always felt uncomfortable. There were no nodules in the index and little fingers even though an intermittent triggering occurred particularly in the morning and after working. He could not perform a forceful grip when flexing the fingers due to pain and tendon entrapment at the A1 pulley (Fig. 1A). In addition, he could not extend his fingers freely (Fig. 1B). The Allen test was normal. Initial plain radiographs showed dense bone island in the middle phalanx shaft of the right little finger and in the metacarpal head of the left thumb. Laboratory test for thyroid functioning was normal. The patient refused to do the provocative test for Raynaud's disease.

To relieve the symptoms, A1 pulley was released in all ten fingers: longitudinal incision for the fourth finger of the right hand and transverse incisions for the other 9 fingers. Intraoperatively, a partial tear of the flexor pollicis longus tendon and hypertrophied A1 pulleys in both thumbs were observed. There were no nodules in the flexor tendons and no tears in the other flexor tendons. All fingers except both thumbs did not have any nodules in the flexor tendons or tears of the flexor tendons. The partial tear of both flexor pollicis longus ten-

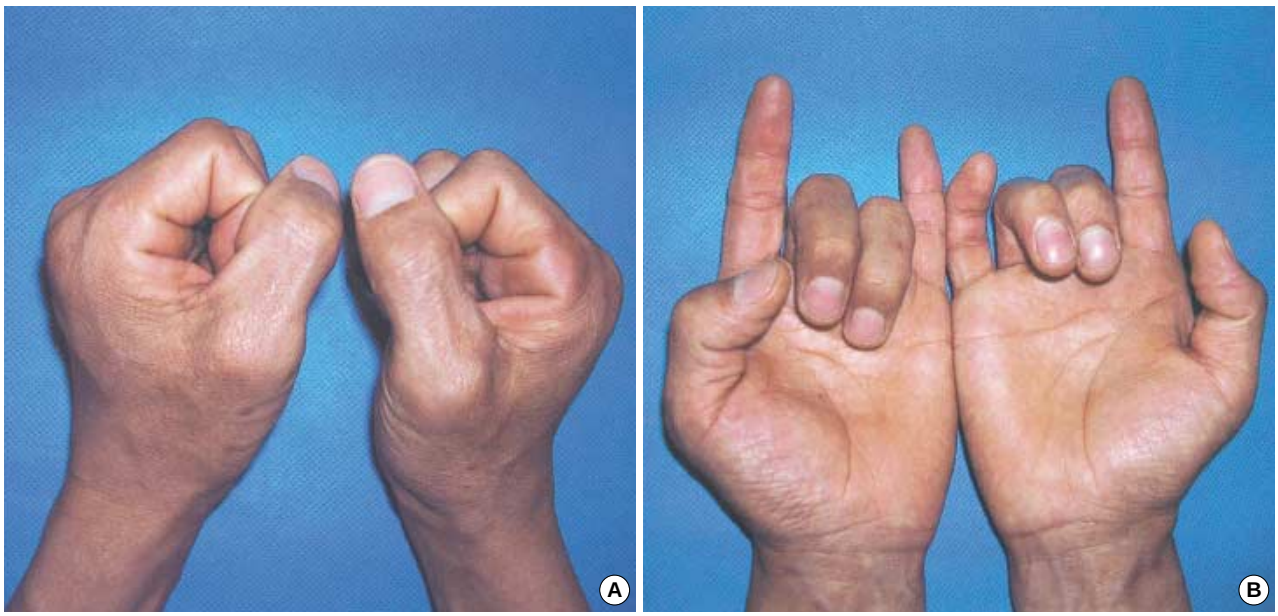

Fig. 1. Closeup photograph of both hands. (A) He can not perform forceful gripping in both hands. (B) He can not extend fingers, especially thumb, 3rd and 4th fingers in both hands due to pain and entrapment of flexor tendons at the A1 pulley.

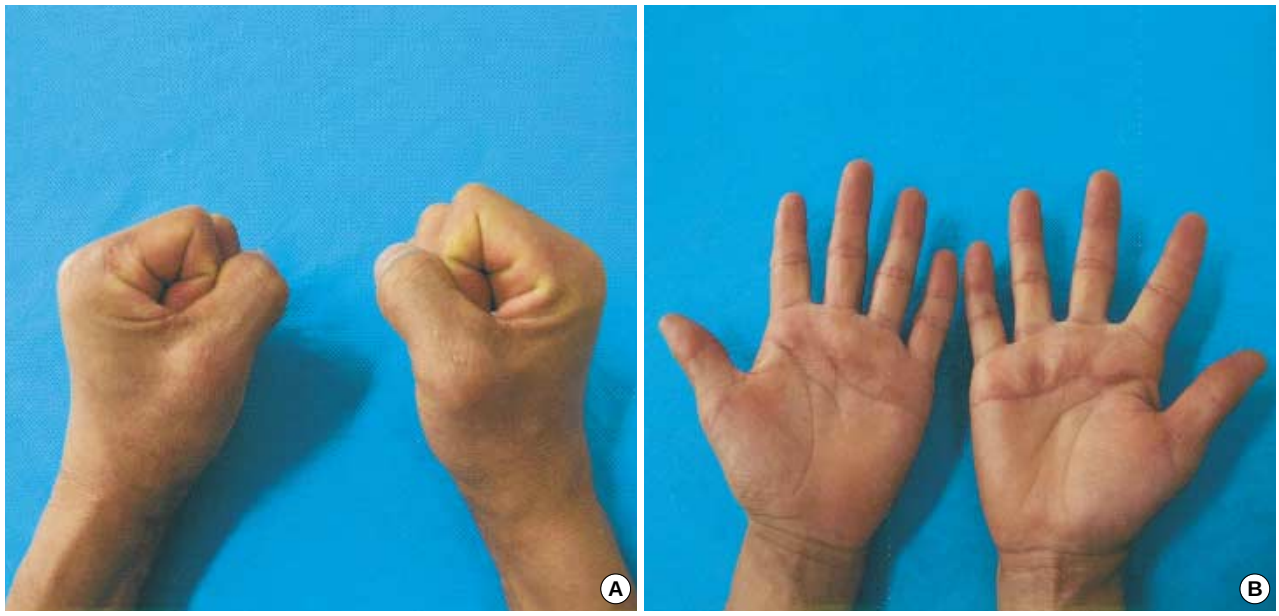

Fig. 2. Closeup photographs of both hands 3 months after surgery. (A) He can perform forceful gripping in both hands. (B) He can extend all fingers with a good clincal result.

dons in both thumbs might be due to previous steroid injections. After operation, the patient had a recovery period for a month without working. Three months after the operation, the patient could return to his previous job without discomfort and showed normal range of motion in all fingers. The previous symptoms such as impairment of a forceful grip and locking in flexion disappeared completely (Fig. 2).

DISCUSSION

To evaluate any correlations between patient's occupation and trigger finger, several studies pointed activities that require exertion of pressure in the palm while the patient performs a forceful grip or repetitive digital flexion. This situation may occur during the use of heavy shears or prolonged hand-held tool work (5, 6). However, as evidenced by the noticeably low incidence in males with the age distribution peaks in their

fifties, a forceful grip or repetitive digital flexion is unlikely to be the sole etiologic factor.

Trezies et al. (2) investigated the occupation histories of 178 patients with idiopathic trigger finger and they demonstrated no significant difference between the occupational distribution of patients with trigger digits and that of the general population. They concluded that the vast majority of trigger fingers developed for other reasons rather than occupation. Weilby (1) concluded that other anatomic and intrinsic factors undoubtedly contributed to a predisposition for the development of tendon entrapment of the hand. In our case, the patient worked more than 6 hr while forcefully gripping a vibrating tool such as grinder. Furthermore, his hand discomfort was more severe in his present job. Therefore, it is evident that occupational factors may aggravate the symptoms. However, this is not a direct etiologic factor considering the relatively short period during which the patient held this occupation.

In considering the existence of a genetic relationship, Fahley and Bollinger (6) alluded to a genetic basis and presented evidence for this case. Dellon and Harsen (7) surveyed the relationship based on genetic factors in their 'multiple (ten) congenital trigger finger cases', but the family history was negative. Bonnici and Spencer (8) reported in their survey of 'trigger finger' in adults that five patients out of 36 had a positive family history. In this report, multiple digits were involved, while the index and little fingers were rarely involved. Shim et al. (9) reported a case, which exhibited an autosomal dominant inheritance pattern for trigger thumb.

In our case, there may be a genetic basis of the deformity when considering operative treatment of mother and maternal aunt for multiple trigger fingers. An objective diagnosis for Raynaud's disease could not be performed despite our consideration that the patient had Rayanud's disease. Although there is no exact pathogenesis between Raynaud's disease and connective tissue disease, Raynaud's disease can occur in combination with many connective tissue diseases (10). In the case of this patient, we consider Raynaud's disease to be an anatomic and intrinsic factor, as presented by Weilby (1).

When an adult man works in an occupation requiring the use of vibrating tools with a forceful grip, has a family history of trigger finger and also has Raynaud's disease without secondary causative diseases, the probability of trigger finger in all ten fingers is very high and an earlier operative treatment will be more effective after a development of trigger finger.

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