

TRIGGER FINGER, A REPORT ON A SERIES OF CASES

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INTRODUCTION

IT APPEARS to me that the trigger finger is not a rare condition at all. Since 1970 I had collected a series of twenty-nine cases. It seems worthwhile to make a report on the clinical data and response to treatment of the condition.

ANATOMY AND PATHOLOGY

To understand the pathology of the trigger finger it would help to review the anatomy of the tendons of the digital flexors in the palm. In the wrist the tendons of the flexors digitorum superficialis and flexors digitorum profundus, together with the median nerve, form a rather tight bundle and pass through the carpal tunnel, which is formed by the strong fibrous band called the flexor retinaculum and the carpal bones. Coming out of the carpal tunnel into the palm, the tendons of the digital flexors spread out separately to lie in the five osseo-aponeurotic canals formed behind by the metacarpal and proximal phalangeal bones and by fibrous bands, the digital fibrous sheaths, which arch across the tendons anteriorly and are attached to the margins of the metacarpal and phalangeal bones and to the palmar ligaments of the metacarpophalangeal and the interphalangeal joints. Each of the five osseo-aponeurotic canals is lined by a synovial sheath which is reflected on to the contained tendons. It should be realised that the distal part of the palm actually contains a proximal part of the digits, that is, almost half of the proximal phalangeal bone is included in the palm. It is in this part of the palm, the distal part, that we find the pathology of the trigger finger.

In Bailey and Love's "Short Practice of Surgery" the trigger finger is described as a stenosing tenovaginitis of unknown aetiology. The sheath of a flexor tendon of the digit in the distal palm thickens, apparently spontaneously, so as to entrap the tendon. Pain and limitation of movement result. In spite of the constriction of the osseo-aponeurotic canal due to the thickening of the tendon sheath, the digital flexor muscles are sufficiently strong to continue forcing the tendon through the diminished gap in the canal. The flexor tendon as a consequence gradually develops a constriction under the tendon sheath and a bulge distal to it. Finally the flexor muscles may force the bulge through the sheath but the digital extensor muscles may be insufficiently powerful to extend the finger thereafter. The finger now snaps as it passes through the constriction and then gets locked in a position of flexion from which attempts passively to extend the finger are painful. The authors state that the trigger finger can be cured by dividing the appropriate sheath surgically.

In the "Current Surgical Diagnosis and Treatment" by Dunphy and Way, the pathology of the trigger finger, described as a stenosing tenosynovitis, is also said to lie in the pulley or tunnel of the digital flexor tendon in the distal palm, resulting in a disproportion between the clearance inside the tunnel and the diameter of the tendon. The smooth gliding movement of the tendon through the tunnel is impeded. The stenosis of the proximal digital flexor tunnel causes local tenderness and pain and frequent locking of the digit in flexion with a painful jog as it goes into extension, as the bulge in the flexor tendon passes through the tight pulley.

CLINICAL HISTORY

The typical complaint is that the afflicted finger gets locked or jammed in a position of flexion and cannot be straightened spontaneously. It has to be pulled out of the locked position by the other hand with force. The rescuing action is painful and is accompanied by a clicking sound. There is also pain in flexion and extension of the finger, especially in the morning after waking, a feature which is common in rheumatic conditions such as osteoarthritis of the knee. A considerable degree of disability results because of the painful movements of the finger and its jamming. The pain sometimes radiates up to the upper arm and shoulder region. In order to keep the hand in a comfortable position the fingers are always kept in a flexed position. The condition may have lasted for a few days or for as long as a couple of months.

CLINICAL FINDINGS

Examination of the afflicted finger reveals that it is being kept in a flexed position but shows no visible signs of inflammation such as redness, swelling, and immobility. Both passive and active movements of the finger are painful and resisted. The patient will volunteer to demonstrate the locking of the finger and then a click can be heard when it is passively straightened. The most constant sign that can be elicited is that when pressure is applied in the distal palm on the proximal phalangeal bone of the afflicted digit near but just beyond the metacarpophalangeal joint very severe tenderness will be experienced by the patient, so much so that he will immediately withdraw his hand from the pressure. The tenderness is well localised and confined to the small area overlying the proximal phalangeal bone of the digit. There is no tenderness when the pressure is applied to the metacarpophalangeal joint of the digit nor to the related metacarpal bone which lies in the middle part of the palm, nor to the distal segment of the proximal phalangeal bone of the digit that lies in the first part of the finger just as it arises from and beyond the distal palm. This very well localised and exquisite tenderness can be considered to be pathognomonic for the diagnosis of the trigger finger. The location of the clinical sign correlates well with the pathological findings described by the authors of the two books just quoted.

SEX DISTRIBUTION

The present series of twenty-nine patients suffering from the trigger finger includes only those cases that had been treated and were available for followup. There were two male patients among them, showing that the female sex predominates by

93 per cent. I think there is a similar female predominance in other soft-tissue and joint rheumatic conditions.

AGE DISTRIBUTION

In the age distribution there is predominance of cases who were above the age of 50, at 79.3 per cent. Only six patients were aged below 50, i.e., one was aged 35, one 36, two 40, one 41, and one 46. Among the 23 patients who were 50 years of age or over, sixteen were in the 50 to 59 age group, six in the 60 to 69 age group and one was aged 80.

DISTRIBUTION OF THE AFFLICTED FINGER

It appears that the fingers of the left hand are as much affected as the fingers of the right hand. In the majority of cases (72 per cent) only one digit, either of the left or right hand, was afflicted. Seven patients presented with triggering of two digits, which were found in the same hand or in the other hand. One patient was afflicted in four digits, in both hands. The middle finger and the thumb are the most affected fingers. Thus the middle finger was involved in twenty times (twelve times in the right hand and eight in the left) while the thumb was involved eighteen times (eight times in the right hand and ten in the left). The least affected was the ring finger which was involved in five times (three times in the right hand and two in the left). No patient had ever presented so far whose index finger or the small finger was involved. The index and small fingers seem, curiously enough, to be immune to the disease.

THE PRESENCE OF OTHER RHEUMATIC CONDITIONS

There is a high incidence of rheumatic conditions among the patients who suffer from the trigger finger. Fifteen of them, about 52 per cent, also complained of other rheumatic conditions. Five patients had the tennis elbow or epicondylitis, four had the frozen shoulder, four had the lumbago, three had osteo-arthritis of the knee, three had pain in the shoulder, two had the sciatica, two had pain in the hip, two had the plantar fasciitis or pain in the heel under the os calcis and one had the achilles tendinitis. Many of them seemed to, be suffering from multiple rheumatic ailments including the trigger finger.

OTHER SIGNIFICANT CLINICAL DATA

In contrast to the high incidence of rheumatic conditions among the patients afflicted with the trigger finger, there was a low incidence of other clinical findings of significance among them. There were five patients who were mildly hypertensive, in the range from 150/100 to 170/100, and two who

were significantly hypertensive, in the range from 170/100 to 220/120. One patient was diabetic. None of them had albuminuria.

TREATMENT

All the patients were given an injection of a mixture of one ml. of 2% xylocaine with adrenaline and one ml. of suspension of prednisolone acetate containing 25 mg. of the corticosteroid per ml. In hypertensive cases the 2% xylocaine solution without adrenaline was given. The mixture was well mixed in the syringe and injected through a fine needle deeply into the tender spot found in the distal palm on the proximal segment of the proximal phalangeal bone of the afflicted finger just beyond the metacarpo-phalangeal joint. The point of the needle should be made to hit the bone and then withdrawn a little bit (say one or two millimeters) to get it out of the periosteum. The injection was then made slowly. No attempt was made to hit the tendon or its sheath. The patient will experience some pain when the mixture is being introduced into the tissue but the pain soon disappears as soon as the local anaesthetic takes effect. The patient was instructed to come back for follow-up after two weeks. If more than one digit is involved the more severely afflicted one is treated first.

RESULTS OF TREATMENT

The results of the treatment described in the previous section can best be analyzed by referring to the treated digit as a unit instead of the patient himself because a patient may have one or two or even three digits afflicted, all at the same time or at different times and the response to treatment of a particular digit may differ from that of another digit. Altogether thirty-nine digits were treated.

The follow-up period ranged from at least four months to eight years. Thirty-four digits received only one injection and five received repeated injections. Twenty-eight digits were completely cured after one injection without any recurrence. Six digits suffered a recurrence of the triggering but refused to have a repeat injection. Of the five digits that underwent repeat injection because of recurrence after the first injection, two got a complete cure without recurrence after receiving a second injection, one got a complete cure after receiving the third injection, but the remaining two had persistent recurrence of the triggering after having received an injection for the fifth time. The last two digits that did not respond to the treatment repeatedly were the right middle finger and left middle finger. Therefore a total of thirty-one digits obtained a satisfactory result from the treatment, i.e. 79.4 per cent. Apart from the initial pain experienced at the time of injection, none of the patients reported any side-effect or untoward reaction from the treatment, either locally at the injection site or systemically.

SUMMARY

The trigger finger is not a rare condition and afflicts predominately the female in the menopause. Although a minor soft-tissue rheumatic condition it gives rise to considerable degree of pain and disability. It has the pathognomonic sign of severe and well-localised tenderness in the distal palm just beyond the metacarpo-phalangeal joint of the afflicted digit. An injection of a mixture of 2% xylocaine and suspension of prednisolone acetate introduced deeply into the tender spot was found to be an effective treatment.