



CASE REPORT

## Trigger wrist in adult. A case report.

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**ABSTRACT... Background:** One of common disorders in hand is trigger finger, but trigger wrist is an uncommon condition. Eibel in 1961 reported the trigger wrist. This condition gets obvious with finger or wrist flexion and extension and painful clicking or triggering of finger around carpal tunnel and can be associated with neuropathy and space occupying lesion or any other underlying condition. **Objective:** Treatment is to achieve complete cure with surgical treatment in terms of functional and aesthetic improvement. **Case:** A 35 years old right handed housewife, presented to us in OPD with 1 year history of triggering at left wrist level. She had history of pain; with off and on clicking during flexion/extension of index finger of left hand. Pain had been increasing over the last 6 months. She underwent standard trigger finger surgery and release of left index finger A1 pulley four month ago but symptom was still present. Pre-operative ultrasonography showed irregular hypo echo mass at wrist that caused adhesion and inflammation at this area. After detail discussion, written informed consent was obtained and she underwent surgical treatment with zigzag incision under axillary block. Median nerve and all flexor tendons were identified. We found mass over FDP of left index finger that was stuck in carpal tunnel and caused snapping and clicking of left index finger. The other tendons were normal. After resection of occupying lesion of left index finger FDP and carpal tunnel release, there was free gliding of tendons at wrist level. Histopathological evaluation of the lesion turned out as fibroma of tendon sheath without evidence of inflammation and malignancy. After the discharge, physiotherapy was advised and patient was followed-up on weekly basis for 1st month then 2 weekly for 6 months. After the surgical treatment, there was free gliding of tendons at wrist level, under carpal tunnel, with complete functional and aesthetic improvement. **Conclusion:** Trigger wrist is an uncommon condition caused by space occupying lesion or any other associated pathology. Surgery is the mainstay of treatment that provides complete resolution of symptoms with functional and aesthetic improvement.

**Key words:** Carpal Tunnel, Fibroma of Tendon Sheath, Space Occupying Lesion, Surgery, Trigger Wrist.

### INTRODUCTION

Eibel in 1961 reported the trigger wrist for the first time.<sup>1</sup> Patients with this condition usually present with history of clicking or triggering at wrist level during the finger movements with associated neuropathy of median nerve. Most common causes are anomalous muscle belly or mass lesions in the carpal region. In literature, five cases of trigger wrist are reported, which were caused by fibroma around flexor tendon sheath and anomalous muscle belly FDS around carpal tunnel.<sup>2</sup>

Trigger wrist in teenagers and children is rare, with few cases are usually seen in adult.<sup>3</sup> Due to

its low incidence overall, most of hand surgeons lack direct exposure of dealing with this problem. Common features of trigger wrist need to be clinically differentiated from trigger finger. But most often it becomes quite difficult to differentiate due to discomfort or vague pain in fingers not at the wrist, which lead to misdiagnosis of trigger finger and unnecessary surgery in finger.<sup>4,5</sup> Therefore, a detailed clinical examination followed by radiological evaluation (ultrasonography and MRI) helps to distinguish causative lesion within or around the carpal tunnel. Suematsu et al<sup>6</sup> classified the etiology of this condition into three categories. Class A is due to nodule or tumor over the flexor tendon sheath.

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Class B is due to anomalous muscle belly. Class C is a combination of class A and B. overall Class A is more common.

Accurate and Timely diagnosis helps in organized management of this condition. Surgery is mainstay of treatment for trigger wrist followed by physical therapy. We presented a case report of trigger wrist caused by fibroma of tendon sheath of FDP tendon at volar wrist.

## OBJECTIVE

To achieve complete cure with surgical treatment in terms of functional and aesthetic improvement

## MATERIAL & METHODS

A 35 years old right handed housewife, presented to us in OPD at Hazrat Fatemeh Hospital Tehran, Iran with one year history of triggering at left wrist level during the flexion and extension of index finger. She had history of pain, snapping and clicking during flexion/extension of left index finger. Pain had been increasing over the last 6 months. She underwent standard trigger finger surgery and release of left index finger A1 pulley four month ago but symptom was still present. Physical examination revealed a fine scar over volar side of index finger crease and small swelling at wrist level. Pre-operative ultrasonography was done which showed irregular hypo echo mass at wrist that caused adhesion and inflammation at this area. After detail discussion, written informed consent was obtained and pre-operative photography was done to compare the post-operative results (Figure-1). She underwent surgical treatment with zigzag incision under axillary block. Median nerve and all flexor tendons were identified. We found mass over FDP of left index finger that was stuck in carpal tunnel and caused snapping and clicking of left index finger (Figure-2,3). The other tendons were normal. After resection of occupying lesion of left index finger FDP and carpal tunnel release, there was free gliding of tendons at wrist level. Wound was closed after the hemostasis. Histopathological evaluation of the lesion turned out as fibroma of tendon sheath

without evidence of inflammation and malignancy. After the discharge, physiotherapy was advised and patient was followed up on weekly basis for 1st month then 2 weekly for 6 months.



Figure-1. Pre-Operative picture.



Figure-2: Intra operative picture with mass visible.



Figure-3. Intraoperative picture with mass removed.



**Figure-4. Post-Operative picture.**



**Figure-5. Post-Operative picture without trigger at wrist.**

## RESULTS

Patient was followed up on weekly basis for 1st month then 2 weekly after the discharge from hospital up to six months. Outcome was assessed by consultant plastic surgeon with 10 year post fellowship experience. After the surgical treatment, there was free gliding of tendons at wrist level, with complete functional and aesthetic improvement. There was no residual deformity and recurrence of the problem (Figure-4,5).

## DISCUSSION

Trigger finger is referred to one of common disorder with a painful clicking during finger motion.<sup>7</sup> However, trigger wrist is a rare condition, with a low incidence rate.<sup>8</sup> It can be associated with carpal tunnel syndrome. When characteristic features around wrist are absent, it becomes difficult to differentiate from carpal tunnel or trigger finger. Assessing the crepitus at volar wrist, might be helpful to find intracarpal mass. If crepitus is felt by compression, then further evaluation by MRI or ultrasound is advised to diagnose the causative lesion within carpal tunnel. With typical signs and symptoms of triggering and snapping at wrist

level, the diagnosis of trigger wrist becomes more evident with or without carpal tunnel syndrome<sup>2</sup>

Although Suematsu et al. described the etiology in three classes; other pathologies have been recently noted for trigger wrist.<sup>9</sup> Wakasugi et al. reported a case of trigger wrist caused by localized amyloidosis and associated carpal tunnel syndrome.<sup>10</sup> In a study by Matsui et al, it was caused by the avascular necrosis of the capitate.<sup>11</sup> Ogino et al<sup>12</sup> reported a series of cases caused by rheumatoid nodule, lipofibroma and giant cell tumor of tendon sheath. Park et al. in his study reported a mild to moderate median neuropathy in the clinical presentations and outcome of operation in 15 trigger wrists with multiple etiologies.<sup>13</sup>

Muhammad M. Al. Qatlan et al in 2017 classified the etiology into 5 types. Type A is median nerve, flexor tendon or other carpal tunnel tumor or inflammatory mass. Type B is anomalous muscle crossing the carpal tunnel. Type C is tumor within an anomalous muscle. Type D, partial flexor or extensor tendon injury at wrist level. Type E is Mechanical causes.<sup>14</sup>

The precise and timely diagnosis of trigger wrist is important to avoid improper and time-wasting treatment for patients. The clinical differentiation is difficult in these cases especially when patient lacks typical signs and symptoms. Ultrasonography can provide a dynamic picture for the tendon triggering. NCS are only indicated in neurologically symptomatic patients. Treatment of choice is surgery, once diagnosis is made. It is an appropriate treatment to resolve the symptoms and improve the function of hand. Carpal tunnel release is generally performed for cases with associated carpal tunnel syndrome. Ineffective conservative treatments or inappropriate surgical procedures may lead to more advanced disease conditions, which need more extensive explorations or reconstructive surgeries.

## CONCLUSION

Trigger wrist is an uncommon condition caused by space occupying lesion or any other associated pathology. Surgery is the mainstay of treatment





that provides complete resolution of symptoms with functional and aesthetic improvement.

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## AUTHORSHIP AND CONTRIBUTION DECLARATION

No.	Author(s) Full Name	Contribution to the paper	Author(s) Signature
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4	Hossein Akbari	Drafting, Literature search, data collection, revision of manuscript, final review.	
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