Trigger Wrist: A Case Series of Three Distinct Etiologies and Surgical Outcomes

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INTRODUCTION:

Trigger wrist is a rare condition marked by painful clicking or snapping at the wrist during hand motion, often misdiagnosed as trigger finger or carpal tunnel syndrome. Unlike trigger finger, which involves stenosing tenosynovitis at the A1 pulley, trigger wrist results from pathology within or proximal to the carpal tunnel, including masses, tenosynovitis, or anomalous muscles. Literature on trigger wrist remains sparse, with few case series published since its first description in 1960. This case series presents three patients with trigger wrist, each with distinct etiologies confirmed via imaging and intraoperative findings, and highlights their diagnostic workup, management strategies, and clinical outcomes.

METHODS:

Three patients presenting with mechanical wrist symptoms consistent with trigger wrist between 2023 and 2025 were retrospectively reviewed. Data collected included patient demographics, symptom duration, physical exam findings, imaging (radiographs, dynamic ultrasound, and MRI), electrodiagnostic studies, intraoperative findings, histopathology, treatment interventions, and follow-up outcomes. Surgical management was pursued for cases with mechanical dysfunction and/or median nerve involvement. Patients were followed postoperatively to assess resolution of triggering and neurologic symptoms.

RESULTS:

Case 1: A 33-year-old female presented with bilateral hand numbness and mechanical triggering on the left. MRI demonstrated a heterogeneous enhancing mass within the carpal tunnel compressing the median nerve. Surgical excision via a volar extended carpal tunnel approach revealed a 5×3 cm fibrous mass with extensive tenosynovitis. Histopathology ruled out tenosynovial giant cell tumor (TGCT). Postoperative recovery was marked by immediate resolution of triggering and improvement in median nerve symptoms.(Figures 1-4)

Case 2: A 38-year-old male rock climber reported triggering and pain in the left middle and ring fingers. Ultrasound showed dynamic flexor tenosynovitis without a discrete mass. Initial management included corticosteroid injection and occupational therapy, resulting in partial improvement. Due to persistent symptoms and limited function, surgical tenosynovectomy and carpal tunnel release were planned. Surgical excision offered complete resolution of symptoms.(Figure 5-6)

Case 3: A 47-year-old female presented with progressive median nerve symptoms and wrist triggering. Intraoperative findings revealed multiple spherical, yellow-brown nodules consistent with localized TGCT. Carpal tunnel release and tenosynovectomy were performed. Histopathology confirmed TGCT. Postoperatively, the patient experienced complete symptom resolution, with no recurrence at 6-month follow-up.(Figure 7)

DISCUSSION AND CONCLUSION: Trigger wrist should be considered in patients presenting with wrist-level snapping or locking, especially when associated with median nerve symptoms. Dynamic physical examination and imaging are essential for diagnosis. It is critical to differentiate “trigger wrist” from the more common “trigger finger” diagnosis. In this series, all patients had excellent outcomes with resolution of mechanical and neurologic symptoms. Increased awareness can prevent misdiagnosis and delayed care. This series reinforces the need for heightened clinical suspicion for trigger wrist, particularly in cases refractory to typical treatment for carpal tunnel syndrome or trigger finger. Understanding the diverse etiologies can guide tailored interventions and optimize outcomes. Awareness of this condition among hand surgeons is essential to avoid misdiagnosis and unnecessary procedures.

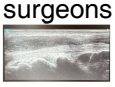

Figure 6: Left wrist ultrasound demonstrating tenosynovium along wrist flexors

Figure 7: Spherical yellow-brown masses noted in the canal causing trigger wrist symptoms

Figure 1: Physical examination findings consistent with trigger wrist. A) Patient is asking examiner to palpate the volar wrist. B) Examiner is palpating flexor tendons during hand, distal forearm soft tissue mass is visible and palpable at wrist during flexion/motion

Figure 2: Bilateral AP, oblique, lateral hand radiographs, demonstrating no abnormal bony or soft tissue abnormalities

Figure 3: A) Axial T1 -weighted image of left hand magnetic resonance imaging showing soft tissue mass within the carpal tunnel. B) Axial T1 -weighted post-contrast image of left wrist. C) Sagittal post-contrast axial T1 -weighted pulse sequence of soft tissue mass. D) Sagittal T2 -weighted image of left hand soft tissue mass. D) Coronal T1 -weighted image of left soft tissue mass

Figure 4: A) Heterogeneous orange/pink mass with surrounding extensive tenosynovitis; B) Disruption deformity of the median nerve

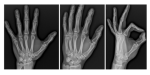

Figure 5: Left AP, oblique, lateral hand radiographs demonstrating no abnormal bony or soft tissue abnormalities