A Child with Trigger Wrist Caused by Finger Flexion and Extension: A Case Report

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Received: 4 March 2008 / Accepted: 13 March 2008 / Published online: 26 April 2008
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Case Report

A 9 year-old boy presented with a mass in the left wrist and motion-induced discomfort. The patient had a trigger phenomenon on the palmar side of his wrist caused by extension and flexion of the middle finger. The patient had no significant medical history. A 5-cm mass was visualized extending from the palm over the wrist. The patient did not have finger numbness, motor impairment, thenar muscle atrophy, or a Tinel-like sign of the wrist. X-ray imaging showed no abnormalities. A magnetic resonance image (MRI) showed a mass around a single flexor tendon, a low-intensity mass on T1-weighted images (Fig. 1), and a high-intensity mass on T2-weighted images (Fig. 2). Accordingly, the mass was expected to be a ganglion or cyst. On sagittal images, the mass surrounded the flexor tendon. Because the symptoms did not improve, the patient underwent surgery 2 months after he noticed the mass. The mass was excised by opening the carpal tunnel. The flexor digitorum superficialis (FDS) of the middle finger adhering to the mass was enlarged (Fig. 3). Histological analysis showed cystic synovial tissue accompanied by thickened wall, papillary

proliferation towards the lumen, fibrin deposition, and lymphocyte infiltration. (Fig. 4). Based on the above findings, the patient was diagnosed with a ganglion adhering to the FDS. One year after surgery, the patient had no discomfort, recurrence, or disturbance in daily living.

Discussion

Trigger wrist is a disease concept that is characterized by snapping or triggering of the wrist. Suematsu et al. [5] classified the etiology of wrist triggering into three types, i.e., type A, tumor; type B, anomalous muscle belly; type C, tumor+anomalous muscle belly. This case was categorized as type A. Ogino et al. [4] reported that triggering of the wrist is due to: 1) finger flexion and extension; 2) wrist movement; or 3) forearm pronation and supination. However, Lemon and Engber [3] have suggested that the term “trigger wrist” should be only applied to triggering of the wrist caused by wrist movements, not finger flexion and extension. Trigger wrist was first reported by Eibel [1], but studies have since found that trigger wrist caused by finger flexion and extension is more common than that caused by wrist movements [4]. This patient had trigger wrist caused by finger flexion and extension. According to Giannikas et al. [2], it is debatable whether only those cases with triggering on wrist movement should be considered trigger wrist. In this patient, the ganglion could have been caused by excessive Japanese drum training. With regard to age, there have been many reports of trigger wrist in middle-aged and elderly patients [2, 5]. However, only two cases of trigger wrist in patients younger than 10 years of age

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Figure 1 MRI (T1-weighted image).

Figure 3 The mass adhered to the FDS of the middle finger.

Figure 2 MRI (T2-weighted image). Mass surrounded flexor tendon (low-intensity mass on T1-weighted image and high-intensity mass on T2-weighted image).

Figure 4 H-E dyeing (×5). The mass was a ganglion consisting of cystic synovial tissue accompanied by nonsuppurative inflammation.

Table 1 Reports of trigger wrist in patients younger than 10 years old.

	Sex	Age	Affected side	Trigger-inducing movement	Cause
Ogino et al. (1994)	M	7	Right	Finger	Giant cell tumor
Morisawa et al., this study	M	9	Left	Finger	Ganglion

(Table 1), including this patient [4], have been described. Triggering was resolved by tumor excision in all cases.

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