All individuals are unique and complex. Contributing to this are myriad genetic patterns and embryonic changes. Congenital anomalies affect 1% to 2% of newborns, in whom approximately 10% are upper limb abnormalities (1). While early insults commonly result in death of the embryo, later insults during the stage of growth and maturation typically result in minor functional deficits such as overgrowth or hypoplasia that may go unnoticed. A clear understanding and knowledge of these anomalies, from the common to the most severe or rarest deformity, aids in clinical judgment and patient reassurance when presenting with concomitant trauma or other symptoms. The present report details a case involving a 14-year-old girl with chronic wrist pain and associated thenar atrophy. Detailed workup revealed absence of the abductor pollicis brevis (APB), a bifid median nerve and persistent median artery (PMA).

CASE PRESENTATION
A healthy right-handed 14-year-old girl presented to hand clinic with a complaint of chronic right wrist pain from a fall on an outstretched hand five months previously. Examination showed significant thenar atrophy (Figure 1). Opposition was weak and static two-point discrimination measured 7 mm in the median nerve distribution. The volar-radial wrist pain was reproduced by hyperextension. The remainder of the upper extremity examination was unremarkable. The patient and her parents were aware of the deformity from three years of age but noted minimal functional impairment. No history of trauma, pregnancy complication or family history of congenital anomalies was presented.

X-rays of the hand did not reveal any osseous abnormalities. Magnetic resonance imaging of the wrist was negative for ligamentous injury, but demonstrated absence of the APB muscle with a small tendon remnant. The other intrinsic muscles were present and of normal configuration (Figure 2). There was a high median nerve division with PMA coursing in between (Figure 3). The radial duplicated median nerve became the recurrent nerve coursing toward the thenar musculature. An electromyogram confirmed the absence of APB; however, no evidence of median neuropathy was present.

With conservative nonsurgical management, the patient’s wrist pain subsided and static two-point discrimination was measured at 4 mm on subsequent follow-up. She reported occasional discomfort from overuse when playing basketball and volleyball. Her thenar anomaly was assessed to be congenital without significant functional compromise that did not require intervention.

Key Words: Abductor pollicis brevis; Bifid median nerve; Hand; Median artery; Thenar atrophy

Congenital thenar hypoplasia is a rare anomaly, and even more perplexing when it is isolated to a specific muscle with associated nerve and vascular anomalies. In the present article, the authors report a case involving a 14-year-old female with unilateral absence of the abductor pollicis brevis muscle, a bifid median nerve and persistent median artery presenting with wrist pain. Comprehensive assessment, including radiographic, electromyographic and magnetic resonance imaging studies, were used to evaluate and document this anomaly.

patient's initial symptoms and interesting examination findings were suggestive of CTS; however, radiographic and nerve testing were not confirmatory. Perhaps the presence of the PMA and bifid median nerve were contributing factors lowering the threshold for CTS, with the wrist trauma serving as an inciting insult causing transient median nerve neurapraxia.

The present case is a rare, detailed description of congenital APB absence with associated nerve and vascular anomalies and, to our knowledge, previously unpublished. It highlights the need for thorough evaluation in young patients presenting with pain secondary to trauma. In the present case, a routine workup for wrist pain led to the discovery of unique congenital anomalies of initial uncertain significance. We believe these unique neurovascular anomalies may have contributed to the patient's transient CTS, with the absence of the APB muscle being a clinical clue to the underlying pathology. Fortunately, the patient recovered well without surgical intervention, reaffirming that not every congenital abnormality needs surgical correction, and may simply contribute to unique genetic composition.

**REFERENCES**


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