

A Large Guyon's Canal Lipoma Without Neuropathy In A Child

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Citation

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Abstract

Lipomas originating from Guyon's canal are uncommon tumors. There are rare reports of adult cases, presenting with Guyon's canal lipoma, oftenly with nerve compression findings. However, so far no report had described this tumor in the pediatric age group.

This article presents an 8-year-old male, who presented with a 3-year history of a slowly growing hypothenar mass. Exploration yielded a large lipoma (35x55x44mm) originating from the proximal Guyon's canal which is residing within the hypothenar musculature. The lesion was excised totally and histological evaluation confirmed the diagnosis. The follow-up period was uneventful and complete cure was attained.

To the best of our knowledge, this is the first report presenting a lipoma deriving from the Guyon's canal in a child case. Despite its huge mass, no signs of nerve compression were detected. This inconsistency between children and adult patients may be due to anatomical and physiological differences of the Guyon's canal and attending nerves and muscles. In children, the structures forming the canal may be more expandable to let such a bulk to grow without neuropathy.

INTRODUCTION

Lipomas are benign tumors of the adipose tissue and quite rarely originate from hand and wrist region.⁽¹⁾ In adults, there are rare reports describing lipomas located in the forearm, phalanx, Guyon's canal, carpal tunnel and deep palmar space.⁽²⁾ During physical examination they are identified as soft or rubbery painless masses. However, symptoms associated with nerve compression may be encountered if they are originated from a location adjacent to a major nerve like in Guyon's canal or carpal tunnel.^(3,4,5)

So far, no reports had described guyon's canal lipoma in the pediatric age group. Here, we present a child case with a large Guyon's canal lipoma and unlike previously reported adult cases, no sensorial or motor deficit related to ulnar nerve compression was detected.

CASE REPORT

An 8-year-old male was referred to our clinic with a history of slowly growing painless mass over the right hypothenar eminence (Fig. 1).

Figure 1

Figure 1: Guyon's canal lipoma over the hypothenar eminence with a well-defined border and an intact overlying skin, palmar view.



There was no history of systemic disease or preexisting trauma. Physical examination revealed a painless, rubbery soft tissue mass. The mass was mobile and well-defined. The overlying skin was normal. There were no signs of nerve compression. Tinel sign was negative. Laboratory test results

were normal. Nerve conduction studies of the ulnar and median nerve was normal. Soft tissue sonography and x-ray showed a well demarcated and solid soft tissue mass (Fig. 2). Magnetic resonance imaging revealed a hyperintense, well-defined, 33x55x44mm lipomatous soft tissue mass adjacent to the 5th metacarpal shaft on T1 and T2 weighed images (Fig. 3).

Figure 2

Figure 2: X ray of the lesion , well demarcated solid soft tissue mass

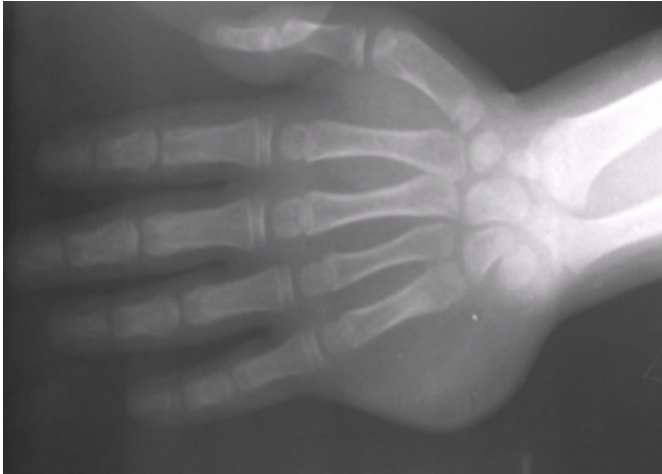


Figure 3

Figure 3: Magnetic resonance imaging of the lesion with hyperintense, well-defined appearance adjacent to the 5th metacarpal shaft, coronal section.



Under general anesthesia, surgical exploration revealed a large lipoma residing within the hypothenar musculature and clearly extending toward the proximal Guyon's canal (Fig. 4). The mass was yellowish with multiple septa (Fig. 5) and was excised completely (Fig. 6).

Figure 4

Figure 4: Peroperative view, demonstrating extension of the lesion proximally.



Figure 5

Figure 5: Surgical specimen with multiple septa and smooth surface.

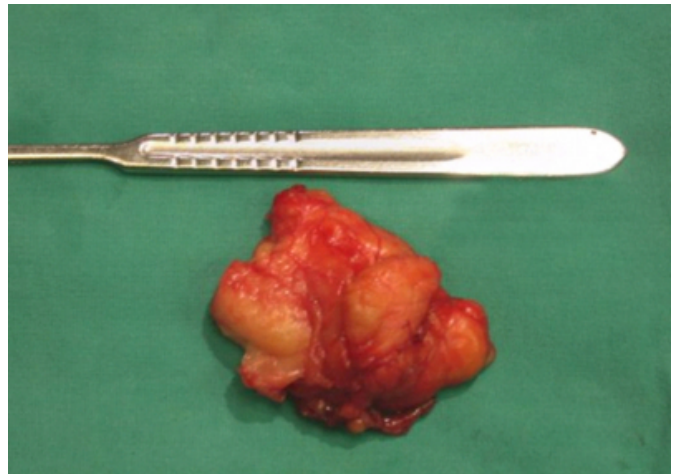
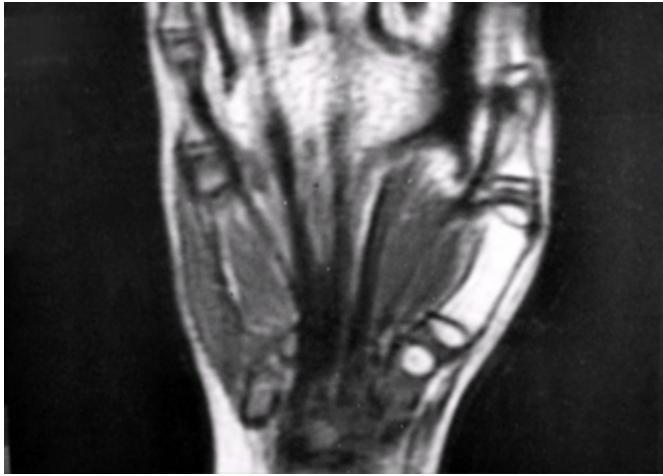


Figure 6

Figure 6: Magnetic resonance imaging postoperatively, showing complete removal of the lesion.



Histologically, the lesion was composed of mature fat cells and considered as lipoma. No immobilization was adopted after the surgery and post operative recovery was uneventful.

DISCUSSION

In 1861, Felix Guyon described a narrow oblique canal that contains the ulnar nerve, artery and vein with some fatty tissue; known as Guyon's canal. This canal is 4 to 4.5 cm long and forms part of the distal ulnar tunnel. The tunnel begins at the proximal edge of the palmar carpal ligament and extends to the fibrous arch of the hypothenar muscles.⁽⁶⁾ Hypothenar fat, fibrous tissue, palmar carpal ligament and palmaris brevis muscle constitute the roof of the tunnel. The flexor digitorum profundus tendons, transverse carpal ligament, pisohamate and pisometacarpal ligaments and the opponens digiti minimi form the floor of the canal. Medial wall is made up from flexor carpi ulnaris, the pisiform and abductor digiti minimi manus. Extinsic flexors, the transverse carpal ligament and the hook of the hamate constitute the lateral wall. Proximal to the wrist, ulnar nerve gives off motor branches to ulnar-innervated forearm muscles and the dorsal ulnar cutaneous sensory branch to the hand then it passes through the canal of Guyon. In this canal, the nerve bifurcates into deep motor branch and superficial sensory branch from proximal to distal respectively. Entrapment of the ulnar nerve at Guyon's canal is often referred to as ulnar tunnel syndrome.⁽⁷⁾ Besides repetitive trauma, inflammatory diseases,⁽⁸⁾ tumors like neurilemmoma, giant cell tumor⁽⁹⁾ ganglion⁽¹⁰⁾ or lipoma may cause this syndrome. Lipomas of the Guyon's canal are rare tumors that may cause nerve compression depending on

their size.

Symptoms may be sensory, motor, or both depending on the site of the lesion.⁽¹¹⁾ In the literature, almost all of the reported cases are adults with nerve compression symptoms to variable degrees.⁽¹²⁾ To the best of our knowledge, there is no report presenting a large size lipoma without any size of nerve compression. In this case, although the tumor was quite large, no sensorial or motor deficit was encountered. However, similar sized lipoma were reported to cause neuropathies in adult patients.^(2,5,12) This inconsistency between children and adult patients may be due to anatomical and physiological differences of the Guyon's canal and attending nerves and muscles. In children, the structures forming the canal may be more expandable to let such a bulk to grow without neuropathy. However, further studies are required to reveal this disparity.

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