CASE REPORT

Glomus Tumor of Thumb Occurring at Unusual Location

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ABSTRACT

Glomus tumour are painful swelling arising from glomus bodies. They are very rare in occurrence. Most of the time the presenting symptoms is severely painful fingertip without palpable swelling. Their most common location is the subungual region of digits. We report the rare case of a glomus tumour located in an uncommon location, i.e., at the tip of right thumb medial aspect near to tendon attachment. The peculiarity of this lesion is that this lesion on magnetic resonance imaging was found to arise from the insertion of flexure pollicis longus tendon and was reported as synovial swelling arising from tendon sheath. Clinical findings were consistent with glomus tumour. Excision biopsy confirmed diagnosis of glomus tumour. Although rare, glomus tumour should be considered as differential diagnosis for fingertip pain and excision of lesion gives complete pain relief.

Key words: Glomus body, glomus tumour, painful swelling

INTRODUCTION

Wood[1] first described glomus tumors in 1812 as painful subcutaneous tubercles. These are benign tumors that arise from one of the subcutaneous glomus bodies. These account for approximately 1% of all hand tumors and occur more commonly in women.[2] Their most common location is the subungual region of digits. About 10% of these tumors occur on the pulp of the distal phalanx.[1-4] We report the rare case of a glomus tumor located in an uncommon location, that is, at the tip of right thumb medial aspect.

CASE REPORT

A 45-year-old female patient presented with a 10-year history of progressively intense pain, cold sensitivity, and severe tenderness to palpation of the lateral side of the volar aspect of her right thumb. She had diffuse swelling of right thumb present. No history of any previous trauma. We performed Love's pin test, Hildreth's test, and a cold sensitivity test. The point tenderness was localized on her right thumb, which was determined by pressing the head of a pin against the tender lesion. Tenderness disappeared after tourniquet at base of thumb for 20 min. The pain increased when her digit was exposed to cold.

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Plain X-ray of hand was normal [Figure 1]. Magnetic resonance imaging (MRI) was suggestive of swelling arising from insertion of flexure pollicis longus tendon, dark on T1 and bright MRI appearance on T2-weighted image [Figures 2 and 3]. They gave differential diagnosis of synovial swelling and glomus tumour.

At surgery, a red 3-mm diameter tumor was exposed through a lateral [L-shaped] volar incision of the pulp of the distal phalanx of the right thumb. It was entirely in the pulp space with no extension into subungual area [Figure 4]. It was removed completely [Figure 5].

Histopathological examination confirmed a glomus tumor with vascular areas with multiple glomus bodies. Surgical wound healed by primary intention [Figure 6]. Patient's symptoms were relieved immediately after the surgery. The patient was asymptomatic 1 year after the surgery.

DISCUSSION

Glomus tumors are benign hamartomas that arise from the normal glomus apparatus, located in subcutaneous tissue. The normal glomus body is a contractile neuromyoarterial receptor that controls blood pressure and temperature by regulating flow in the cutaneous microvasculature.[3-5] Glomus bodies are highly concentrated in the tips of digits,

Figure 1: Radiograph-anteropsterior and lateral view

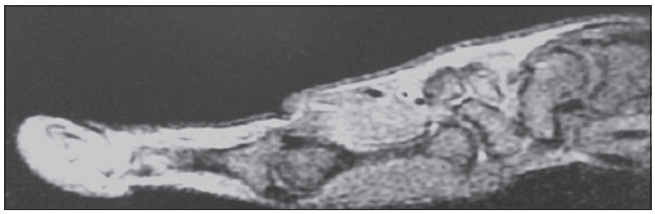

Figure 3: T1 weighted Magnetic resonance imaging showing swelling arising from tendon insertion

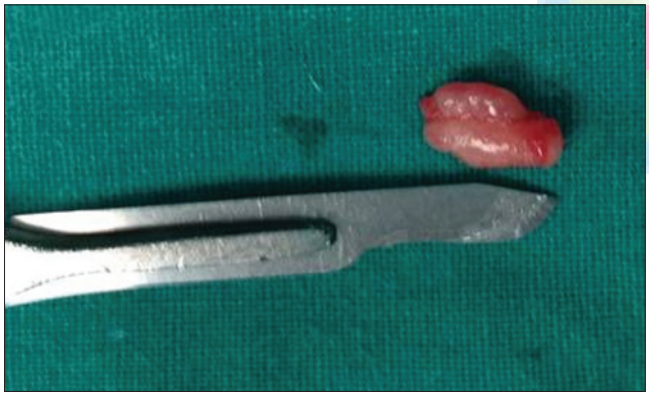

Figure 5: Excised glomus tumour

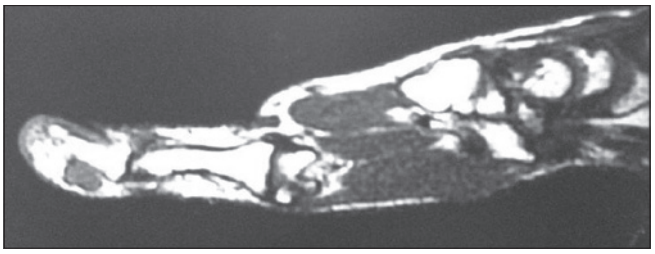

Figure 2: T2 weighted Magnetic resonance imaging showing swelling arising from tendon insertion

Figure 4: Tumor at the tip of right thumb

Figure 6: Clinical photographs after suture removal

especially under the nail. So, the tumors are usually in the subungual area. The glomus tumor being located in the volar pulp of the distal phalanx is very rare.

The glomus body is a highly specialized arteriovenous anastomosis responsible for thermoregulation. Glomus bodies consist of an afferent arteriole, a tortuous arteriovenous anastomosis, a system of collecting veins, and a neurovascular reticulum that regulates the flow of blood through the anastomosis. Glomus bodies are present in the stratum reticularis of the dermis throughout the body, but they are more numerous in the digits, the palms, and the soles of the feet. In 1812, Wood[1] described the glomus tumor as a painful subcutaneous "tubercle." A total of 75% of glomus tumors occur in the hand, especially in the fingertips, and particularly in the subungual area. Of all hand tumours, 1-2% are glomus tumours. Multiple glomus tumors are present in 2.3% of cases. The average age of patients at diagnosis ranges from 30 to 50 years. Men are affected less frequently than are women.[4-7]

They are categorized into two clinical forms: Solitary and multiple. Solitary Glomus tumor (GT), which account for 90%, are sporadic, occur during adulthood, are more common in women, and are usually found in the upper extremities. On

the contrary, multiple Glomus tumors are autosomal dominant, occur in younger patients, are more common in men, and are nonpainful. Glomus tumors are further subcategorized into three histological variants: Solid glomus [most common], glomangiomas, or glomangiomyomas depending on the predominant tumor component.[4-7] Malignant forms, although extremely rare, do exist.

The diagnosis of the glomus tumor must be made through the history and clinical examination of the patients. One of the distinguishing features of the glomus tumor is the classic triad of symptoms: Hypersensitivity to cold, paroxysmal severe pain, and point tenderness in the finger.[4-6] There are three main clinical diagnostic tests. The first is Love's pin test, in which the head of a pin is pressed gently against the tender lesion to localize the pain. The second is Hildreth's test. This test is performed by elevating the patients' arm to exsanguinate it. A tourniquet is inflated to 250 mm Hg and if test is positive than there is reduction in pain and tenderness. A test is also positive when releasing the cuff causes a sudden onset of pain and tenderness in the area of the tumor. The last test is a cold sensitivity test that produces increased pain when the finger is exposed to cold. In addition to these clinical tests, ultrasonographic imaging and MRI can be a valuable method of imaging glomus tumours.[8,9]

The treatment for glomus tumors is surgical total excision. Complete excision is curative and necessary to avoid recurrence. The incidence of recurrence after surgery has been reported in the range of 5-50%.[4,5] The surgical approach depends on an accurate evaluation of the tumor location. The standard approach is direct transungual excision.[10,11] Small tumors may be removed by punching a 6-mm hole into the nail plate, incising the nail bed, and enucleating the lesion. The small nail disk is placed in its original location as a physiologic dressing. Larger tumors may be treated after removal of the proximal half of the nail plate.

An alternate approach is through a lateral incision through an L-shaped incision parallel to and 4-6 mm toward the volar side of the lateral nail fold.[12] The incision allows exposure to the dorsal distal phalanx without violating the nail matrix, so reducing the risk of postoperative nail deformity. The nail bed is carefully dissected from the bone until the tumor is reached and extirpated. Extirpation is usually curative, although the pain may take several weeks to disappear. However, the lateral approach affords a more narrow view of the tumor bed, with a higher chance of incomplete excision, compared with the transungual approach. In our case, the lateral approach was enough for complete excision because the lesion was located in volar pulp.

Although rare glomus tumor should be considered as differential diagnosis for painful swelling at fingertip. Magnetic resonance imaging gives exact origin of lesion and helps in planning surgical approach for excision. Complete excision of lesion results into resolution of symptoms.

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