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Case Report

Recurrent and Multiple Digital Glomus Tumors: A Case Report

Blanchard Nguefack Noumedem[1]*, Jean Noël Goubier[1,2] and Frederic Teboul[1,2]

[1]*Hôpital Privé Paul d'Egine - SOS Mains de l'Est Parisien, Champigny-sur-Marne, France*

[2]*International Unit of Hand surgery, Paris, France*

***Corresponding Author:** Blanchard Nguefack Noumedem, Hôpital Privé Paul d'Egine - SOS Mains de l'Est Parisien, Champigny-sur-Marne, France.

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Abstract

Glomus tumor is a rare vascular neoplasm arising from a neuroarterial structure called the glomus body. They can occur anywhere in the skin or soft tissue but they are commonly found in the subungual region of the hand where they account only for 1% to 2% of the hand soft tissue tumors. Multiple and simultaneous digital glomus tumors are exceptional. We present here the case of a 27-year-old male who was treated at the same time for a recurrent subungual tumor of his left little finger with a second growth on his left ring finger. To our knowledge, no case of recurrences and at once multiple glomus tumors locations in the fingers have been reported in the literature so far. Different diagnosis tests and imaging studies are necessary for early diagnosis. Surgery is the suitable treatment of these tumors but Magnetic Resonance Imaging is a prerequisite that will precise the diagnosis and enable a complete surgical excision so to prevent recurrence. Good surgical approach is necessary to avoid anesthetic complication but should depend on the tumor Magnetic Resonance Imaging localization. After surgery, recurrences remain frequent due either to an incomplete excision or to a misdiagnosis of localization. Glomus tumors are benign but should be kept in mind when considering differential diagnosis of any painful condition of the fingertips.

Keywords: *Different Digital Glomus Tumors; Benign Tumor; Finger*

Introduction

Glomus bodies are arteriovenous anastomosis functioning without an intermediary capillary bed. They aid in regulating blood flow and temperature in the cutaneous vasculature [1,2]. Glomus tumors are rare benign vascular neoplasm most commonly seen in female patients in the subungual regions in the hands while men often experience these tumors on the body parts [3]. Multiple localizations of glomus tumors in different fingers can exist but the very few cases reported in the literature were often recurrences or a new case in the same finger [4]. Some diagnostic tests for glomus tumor include the Love's pin test, Hildreth's test and the cold sensitivity test [5,6]. Magnetic Resonance Imaging (MRI) is used to support clinical diagnosis [7,8], in delineating the tumor size and precising its localization. Treatment is based on complete surgical excision. When well done, it leads to a permanent symptomatic relief and a low incidence of recurrence [9]. We treated a 27-year-old male patient who presented a recurrence of obscure pain due to bidigital subungual glomus tumor. His case is presented here and a literature review is done.

Case Report

On May 2014, a 27-year-old man was diagnosed with a glomus tumor on his left little finger and his left ring finger. In his medical past-history, he suffered two years ago from a severe pain of his left little finger on touching and during exposure to coldness in the finger tip. The pain increased when he was in anger or during the winter season. No past-history of trauma was found and there was no familial

case. He underwent one year later a first surgical intervention in another hospital without a pain relief. No MRI was done at that moment. Histopathology confirmed the glomus tumor. Because of the persistence of the pain in the same little finger and the arising of similar pain in the same hand ring finger, he visited our institution three months later after the first surgery. Clinically, the patient was afebrile; there was no obvious mass of the two fingers pulp and no limitation of the range of motion of the finger. There was a small dystrophy of the previous operated nail (left little finger). On both fingers, there was a pink discoloration at the base of the nail plates and these spots were exquisitely tender. Love's and Hildreth's signs were positive. There was no regional lymph node enlargement. Systemic examination was normal. We realized upon our consultation MRI of the left hand (Figure 1) confirming the recurrence on the little finger (subungual mass near the third phalanx dorsal cortical zone without any bone deformity measuring 14 X 4 mm x 8 mm) and another similar aspect in the ring finger adjacent to the third phalanx measuring 15 X 3 mm X 8 mm. There was no distal interphalangeal joint abnormality or any extensor or flexor tendons abnormality. Patient was operated upon under regional anesthesia with tourniquet control. We started by a total and transitory removal of the nail-plate. A longitudinal incision was made in the nail bed over the area of the tumor in each finger and then excised. According to the MRI localization of the mass, we did a direct access for the ring finger (Figure 2) and a transungual but lateral access close to the margin of the nail for the little finger (Figure 3). A complete excision of the two glomus tumors was done. Both of the two lesions removed in the two fingers were pinkish, encapsulated (Figure 2). The nail bed was then closed with a 5-0 absorbable suture. The nail-plate was replaced at the end. Histopathological analysis of the lesion confirmed the diagnosis. Pain on touching or during coldness disappeared immediately after surgery. The post-operative period was uneventful and at 8 months follow-up, the patient remained asymptomatic and we experienced no nail dystrophy on the ring finger.

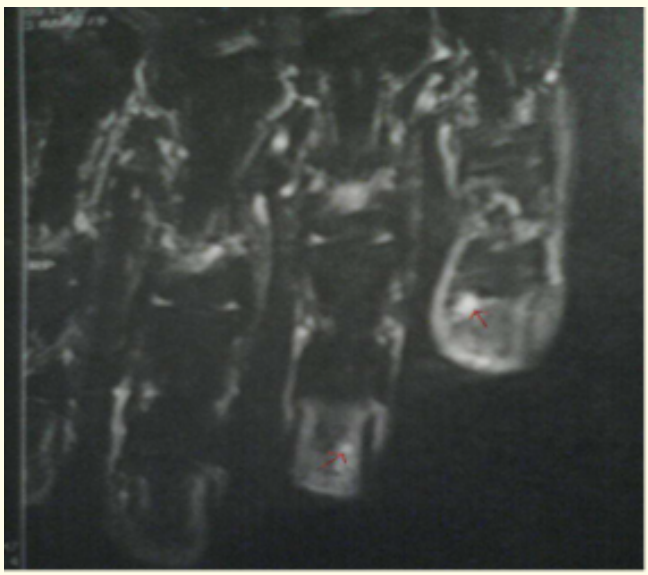

Figure 1: *MRI findings of the distal phalanx in little finger and in ring finger of the left hand. A mass is detected at the subungual area and adjacent to the distal phalangeal bone of the little and the ring finger.*

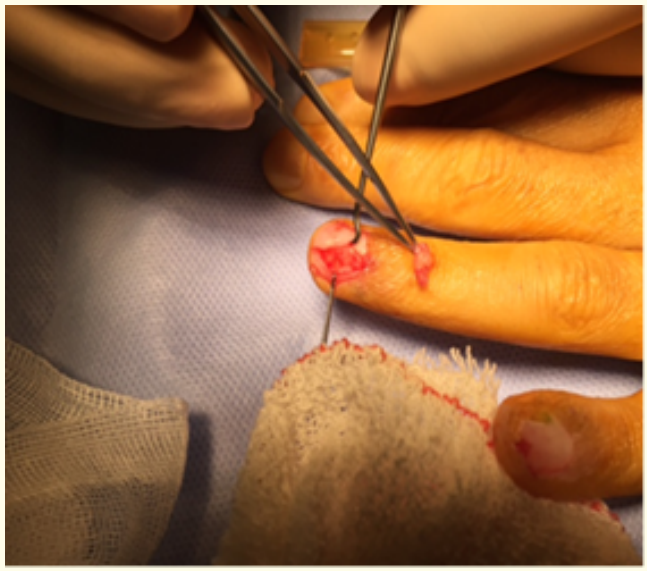

Figure 2: *Surgical approach and intraoperative findings in the left ring finger.*

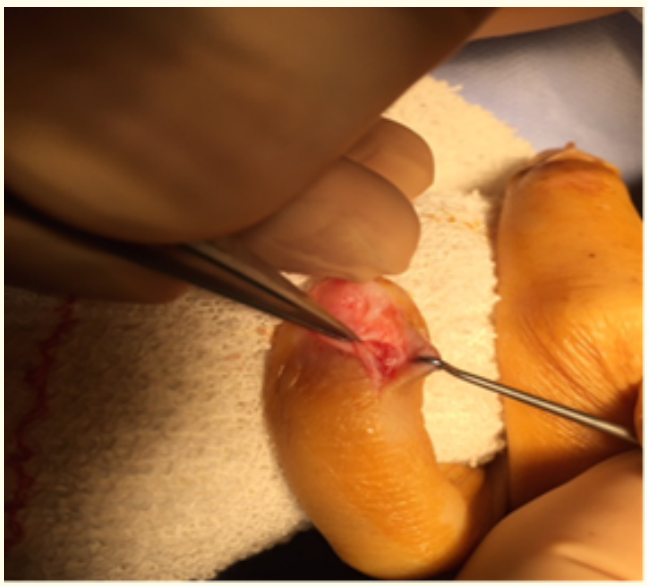

Figure 3: *Surgical approach in the left little finger. The mass was excised totally.*

Discussion

Glomus tumor is a rare and benign vascular tumor. In the upper limb, it accounts for a small percentage of hand tumors (1 - 2%) [2]. Fifty per cent of these tumors occur under the fingernail, usually to people between the ages of 30 and 50 years, twice as often to women as men [2,8]. Multiple glomus tumors can exist in the head, cheek, eyelid, skin back, stomach, popliteal fossa, forearm, thigh, ankle, foot and heel [4,10]. Few cases of multiple localizations in the fingers have been reported in the literature [4]. Our case is different because previous reports of digital glomus tumors described multiple lesions in a solitary finger or cases of recurrences in the same finger. In our case the tumor is present in different fingers in the same patient plus a recurrence in one finger. Multiple glomus tumors represent respectively in two series only 2,3% and 3,5% of all the cases [4,10]. It is therefore rare and exceptional. In fact, the initiating event for glomus cell proliferation is unknown but according to us someone who is predisposed to present this lesion may have a more important risk of multiple digital localizations. Some authors have postulated that trauma induces solitary subungual glomus tumor [2]. There was no history of trauma in our patient. According to us but it is not proven, multiple digital and unpainful glomus exist in our fingertips. For an unspecific reason it can become inflammatory and therefore painful. An initial cause may be a glomus dysfunction due to an uncommon exposure to the cold and a deregulation of pain neurotransmitters due for example to the anger in our patient. This hypothesis comes to the fact that nerve fibers containing the pain neurotransmitter substance P have been identified in the tumor [11] and our patient has reported the anger as an associated and recurrent cause of his pain. According to us a total excision of the tumor is necessary for a total pain relief. It may also depend on the existence or not of any other glomus which may be inflammatory in the same area. Only the realization of a MRI can precise it. There is usually a delay in diagnosis [3,12]. Early diagnosis can avoid exacerbation of patient's symptoms. The diagnosis of glomus tumor is primarily clinical and symptoms include the classical triad of cold sensitivity, localized tenderness and severe intermittent pain. The pain is described as burning. The tumor itself may not be obvious to the naked eye. It exists three clinical tests which are useful for diagnosing glomus tumors. In the Love's pin test, a pinhead is used to apply pressure to the suspected area; an intensive pain is registered in the area containing the glomus tumor [5]. The second test is the cold sensitivity test which is positive when immersing the hand in cold water for one minute it creates severe pain around the lesion. This last test has 100% sensitivity, specificity and accuracy according to Netscher., *et al* [9]. In addition there should be a history of cold weather aggravating the symptoms as was evident in our patient. The third test is the Hildreth's test which is a reliable clinical sign for the diagnosis [6]. This test is performed by elevating the patient's arm to exsanguinate it. A tourniquet is inflated to 250 mmHg and the test is positive when releasing the tourniquet, it causes a sudden onset of pain and tenderness in the area of the tumor. Plain films are not generally helpful in visualizing this tumor. CT scan imaging or ultrasound can also identify these lesions but none of these imaging were done in our patient. In fact, high resolution magnetic resonance imaging (HR-MRI) has been found to be a specific and sensitive tool for diagnosis of glomus tumors. It can detect lesions as small as only 2 mm [7,8]. MRI delineates the size of the tumor and precises its location, which increases the chance of complete excision. Subungual glomus tumors are treated by surgical excision [13]. Transungual approaches are simple and allow good visualization of the lesion, the nail-plate is reflected and the tumor is exposed and excised along with capsule according to the position of the tumor at the MRI. MRI is therefore recommended not only for diagnosis but also for the surgical technique. Appropriate repositioning of the nail-plate and the nail-bed suture with 5-0 absorbable material can reduce the concern for nail deformity [3]. Surgery is necessary to relieve pain and biopsy should be effective to confirm diagnosis. The incidence of tumor recurrence after surgical excision ranges from 5% to 50% depending primarily on the surgical technique [8]. According to Theumann., *et al*. most of the patients with an early recurrence (less than one year after surgery) underwent surgery with a lateral approach, which offers a narrower view of the tumor bed compared with a transungual approach. In general, recurrences of the same glomus tumor are thought to be the result of inadequate excision of a single tumor [2,8] while other recurrences may be due to the growth of a new glomus tumor [8,9,13]. In our patient, we have no proof for a first inadequate surgical excision. If complete excision is reported to avoid recurrences [2], some authors believe that recurrent symptoms following tumor excision most likely are due to the presence of a previously undetected tumor [4].

Conclusion

Multiple and simultaneous digital glomus tumors are exceptional. Glomus tumors are benign but should be kept in mind when considering differential diagnosis of any painful condition of the fingertips.

Conflict of Interests

None.

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