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Case report

Lipoma in uncommon site: A case report of finger lipoma from Nepal

Suchit Thapa Chhetri *, Sumit Kumar Sah, Bishal Kunwor, Madhu Sudan Aryal, Pradeep Pudasaini, Samir Marasini

Nepalese Army Institute of Health Sciences, Kathmandu, Nepal

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ABSTRACT

Introduction: Lipomas are the most common benign mesenchymal tumors, making up 50 % of soft tissue tumors. However, while they frequently occur in areas like the head, neck, shoulders, and back, lipomas in the hands and wrists are rare, particularly in the fingers where they are exceptionally uncommon.

Case presentation: We present a case of 62-year-old female presented with a six-year history of a gradually enlarging, painful swelling on the palmar aspect at the base of her left index finger. Examination revealed a soft, fluctuating, 3 cm × 2 cm swelling. USG and MRI suspected it to be a lipoma. The lesion was excised, and histopathology confirmed a benign lipoma.

Discussion: Lipomas, derived from mesenchymal preadipocytes, often have genetic and metabolic links, including in individuals with obesity, hyperlipidemia, and diabetes. While typically asymptomatic, lipomas in the hands and fingers can cause pain and impairment, necessitating surgical resection. Accurate diagnosis may require imaging, and treatment yields favourable outcomes with low recurrence rates.

Conclusion: Despite their rarity, lipomas in the hands and fingers should be considered when evaluating non-discharging swellings. Surgical resection is the primary treatment.

1. Introduction

Lipomas, originating from adipose tissue, are among the most prevalent benign mesenchymal tumors, constituting 50 % of soft tissue tumors [1]. Lipomas frequently occur in obese individuals and in patients aged between their 5th and 7th decades of life [2,3]. Typically located in subcutaneous tissues, they are frequently found in the head, neck, shoulders, and back regions [4].

Although lipomas have been reported in the upper limbs, they are uncommon in the hands and wrists, representing only 1–3 % of benign hand tumors [5]. While rare, hand lipomas mostly occur in the thenar and hypothenar regions, with occurrences on the fingers being exceptionally uncommon [6].

We present a case of a 61-year-old female with a lipoma at the base of her left index finger. To the best of our knowledge, this is only the second reported instance of a finger lipoma from our country Nepal [7]. This case report adheres to the SCARE checklist [8].

2. Case presentation

A 62-year-old female presented to the orthopedic outpatient department with a chief complaint of a swelling on the palmar aspect at the base of her left index finger, specifically located at the distal metacarpophalangeal (MCP) joint. The patient first noticed the swelling six years prior, and it had gradually increased in size, accompanied by pain during movement of the index finger. She reported no history of trauma, significant weight loss, or decreased appetite. She was a former smoker with a smoking history of 50 pack-years and had a medical history of Type 2 Diabetes Mellitus and hyperlipidemia, for which she was on medication including injectable insulin glargine, metformin, voglibose, and rosuvastatin.

On local examination of the left index finger, a single soft swelling measuring 3 cm × 2 cm with fluctuating consistency and no secondary changes was noted at the distal MCP joint. (Fig. 1) The skin over the swelling showed no discharge. Systemic examination was unremarkable, and vital signs were within normal limits. Routine laboratory investigations including Complete Blood Count, Coagulation Profile, Liver Function Test, Renal Function Test, and Urine Routine Examination were performed and yielded normal results. Serology was non-reactive for Hepatitis B, Hepatitis C, and HIV.

Ultrasonography (USG) of the left index finger revealed a homogeneously hyperechoic solid lesion measuring 2.4 × 1.1 × 1.6 cm

* Corresponding author.
E-mail address: chhetrisuchit123@gmail.com (S.T. Chhetri).

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Fig. 1. Left-hand show swelling on the palmar aspect at the base of the index finger.

(approximately 2.3 mm volume) in the intermuscular plane of the palmar aspect at the base of the left index finger, with no evidence of raised vascularity, calcification, or septation within the lesion. Magnetic Resonance Imaging (MRI) was suggested for further evaluation, which showed a well-circumscribed lobulated lesion measuring 1.2 × 1.8 × 2.6 cm (AP x TR x CC) in the palmar aspect at the base of the left index finger, located at the distal MCP joint. (Fig. 2) A thin septation was observed within the lesion, which appeared hyperintense on T1 and T2 Weighted images and hypointense on Short Tau Inversion Recovery (STIR). The underlying bone and tendon showed normal signal intensity and morphology, with no evidence of bone marrow edema or intra-articular extension of the lesion. The lesion was suspected to be a lipoma.

Given the lesion's size, location, and the need for extensive dissection around the distal MCP joint, excision of the lesion was planned under brachial plexus block to ensure adequate anesthesia and patient comfort. The lesion was excised, and an excision biopsy was sent for histopathological investigation. Grossly, it exhibited a single globular tissue, measuring 4 × 3 × 2 cm, and the cut section revealed a yellowish homogeneous area. Microscopically, the excised tissue section displayed well-circumscribed tissue comprising mature adipocytes arranged in a lobular pattern, separated by fibro-collagenous septa. Additionally, a few foci showed increased blood vessels, while no areas of necrosis, hemorrhage, or evidence of malignancy were appreciated. (Fig. 3) Histopathological findings confirmed the diagnosis of lipoma with no signs of malignancy, indicating a good prognosis due to the benign nature of the tumor. No adverse events were encountered during the post-operative period.

At the 3-month follow-up, the patient reported no complaints, and there were no signs or indications of lipoma recurrence. (Fig. 4) The patient exhibited no tenderness and pain in the operated region, had full range of motion of the affected palm and finger, including intact sensation.

3. Discussion

Lipomas stem from mesenchymal preadipocytes, despite being comprised of mature adipocyte tissues [3]. The precise pathophysiology of lipomas remains uncertain. However, genetics, trauma, and metabolic disorders have been implicated as potential causes [9]. Solitary lipomas often have genetic associations and mutations, while multiple lipomas are frequently linked to a positive family history [9,10]. Incidence rates are notably higher in individuals with obesity, hyperlipidemia, and diabetes. Our patient had a history of Type II Diabetes Mellitus and Hyperlipidemia, suggesting a potential metabolic dysfunction etiology for the lipoma.

Lipomas are believed to occur more frequently in females due to higher amount of adipose tissue in females [3]. Finger lipomas are rare due to the minimal adipocyte tissue present in the finger region. Although hand lipomas are typically asymptomatic, patients may seek medical attention when they become cosmetically bothersome or cause physical impairment [11]. In our case, the swelling began six years prior, but the patient sought medical advice only when it started causing pain during finger movement. In a study conducted by Leffert involving 141 lipomas of the upper extremity, 26 cases were associated with pain, and 6 cases resulted in paresthesia [12]. This suggests that lipomas in the hand region tend to be more symptomatic compared to those in other parts of the body, challenging the common belief that lipomas are typically asymptomatic.

Symptoms associated with hand lipomas can include pain,

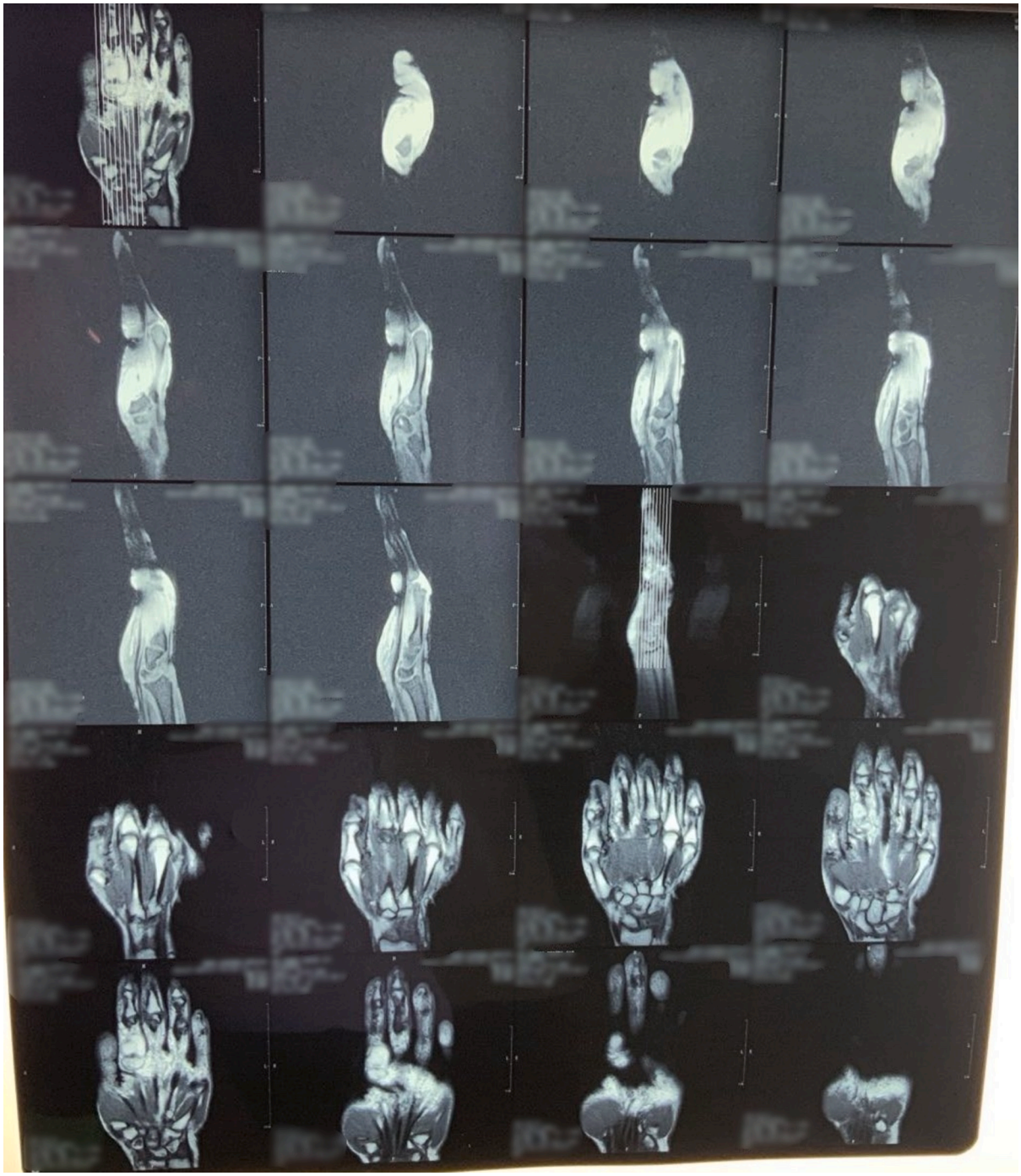

Fig. 2. Magnetic Resonance Imaging (MRI) showing a well-circumscribed, lobulated lesion measuring 1.2 × 1.8 × 2.6 cm (AP x TR x CC), with thin septation, located on the palmar aspect at the base of the left index finger.

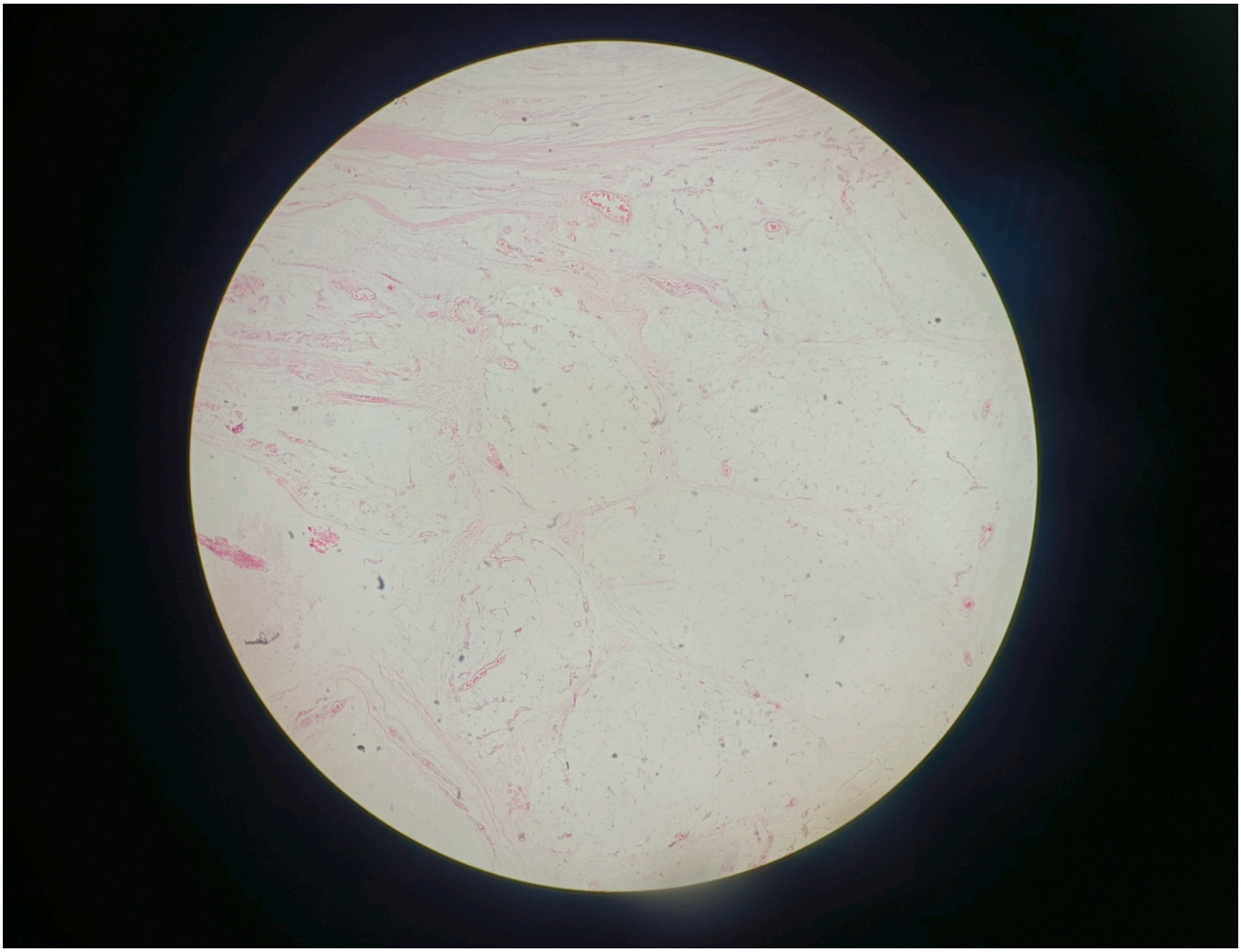

Fig. 3. Histopathological findings of the excised mass showing well-circumscribed tissue comprising mature adipocytes arranged in a lobular pattern, separated by fibro-collagenous septa.

paresthesia, and various complications such as wrist and digit deformities, decreased grip strength, trigger finger, and polyarthritis [13–15]. Complications may also include compression syndromes leading to decreased neurological function and pain. Rarely, lipomas may erode adjacent metacarpals, cause dysesthesias, recur, or exhibit malignant transformation [16–18].

The differential diagnosis for hand lipomas includes ganglion cysts, inclusion cysts, giant cell tumors, liposarcomas, and fibrolipomatous hamartomas [19]. Typically, in our practice, finger lipomas are primarily considered with ganglion cysts as a notable differential. However, in our specific case, despite initially considering a ganglion cyst, a negative transillumination test prompted further investigation. Unlike ganglion cysts, which typically transmit light during transillumination, lipomas do not [20]. Hence, lipomas should be included in the list of differentials for painless swelling, even in uncommon sites such as fingers and hands [7].

Clinical diagnosis of lipomas is typically straightforward in common locations, but for atypical sites, ultrasound, CT scans, and MRI can be helpful [19,21]. These imaging modalities help to display the lesion in relation to the adjacent surroundings [22]. Surgical resection is the primary treatment for lipomas, even in asymptomatic cases, due to their favourable outcome, low recurrence rates, minimal postoperative complications and for cosmetic reasons to the patient [23,24]. Techniques such as liposuction and endoscopically assisted excision may be utilized in cases of large lipomas and to minimize scarring [25].

4. Conclusion

Lipomas are asymptomatic in many cases but hand and finger lipomas can present with symptoms such as pain and paresthesia, necessitating further evaluation and surgical intervention when indicated. Despite the rarity of lipomas in hands and fingers, it's essential to consider lipomas when evaluating non-discharging swellings in the fingers, as misdiagnosis can lead to potential complications. Surgical resection remains the primary treatment modality offering favourable outcomes.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Ethical approval

This is a case report, therefore, it did not require ethical approval from ethics committee.

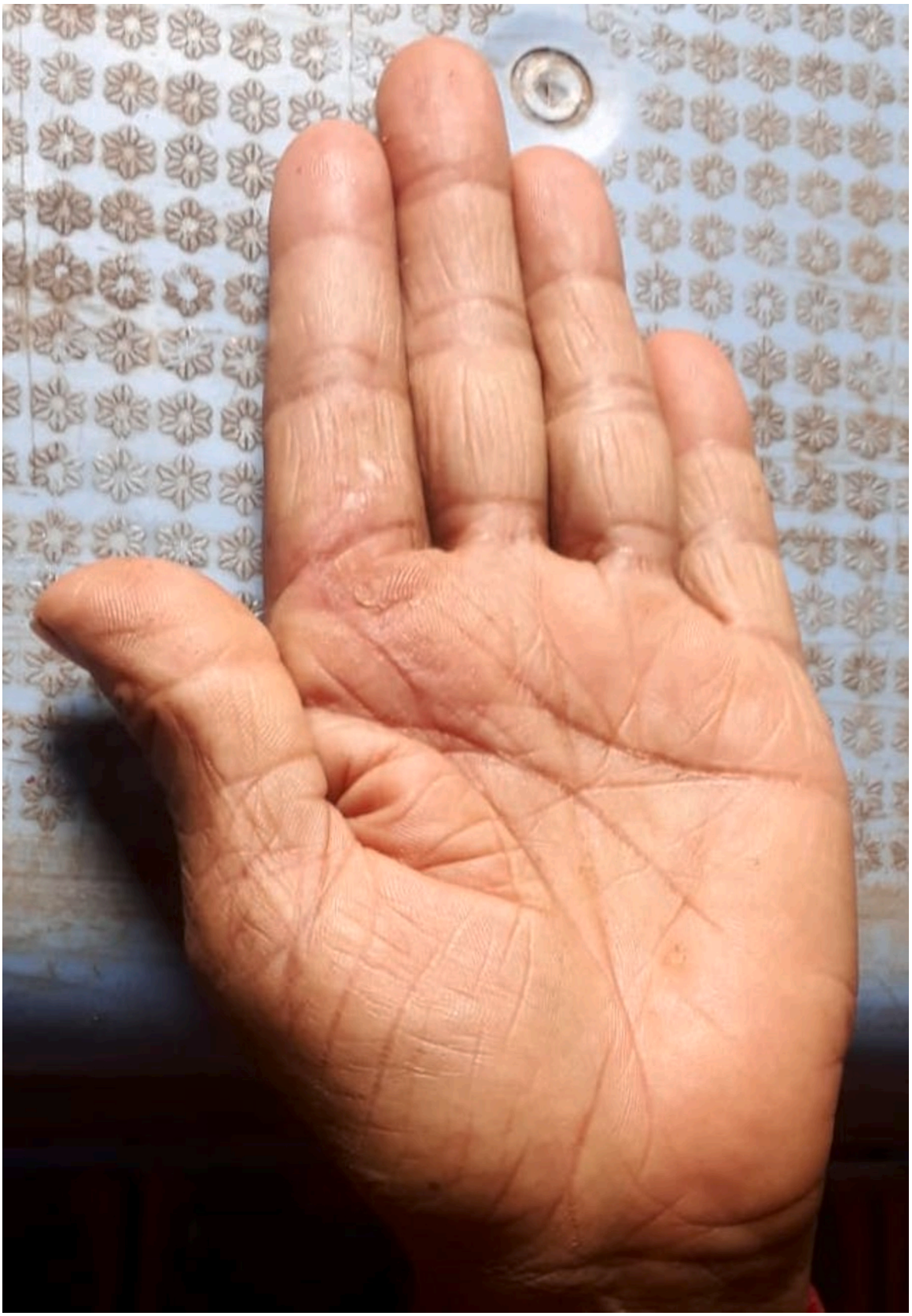

Fig. 4. Left-hand showing an incisional scar three months after surgical excision of the mass.

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Declaration of competing interest

The authors report no conflicts of interest.

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