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Case Report

Subungual painful tumor presenting as longitudinal erythronychia

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Abstract Longitudinal melanonychia refers to is a linear pigmented band appearing on the nail plate and when the band is of red color it is termed as longitudinal erythronychia. Mostly it is asymptomatic and idiopathic but when it presents with pain in affected digit then there is strong suspicion of underlying glomus tumor. Here we report a young lady who presented with three year history of episodic excruciating pain in left index finger along with longitudinal band in nail plate. After clinical and radiological evaluation she was suspected to have a painful tumour (glomangioma) at the base of nail unit. Tumor was excised through transungual approach and patient was free of any pain a week after surgery.

Key words
Glomus tumour, glomangioma, longitudinal erythronychia, longitudinal erythromelanonychia, painful digit, painful tumors, nail neoplasms, subungual tumors, transungual approach.

Introduction

Longitudinal erythromelanonychia (LE) takes its origin at the proximal nail fold and extending through the lunula, reaches up to the edge of the nail plate.[1] It can be a clinical sign of many underlying local or systemic diseases. Local causes may be glomus tumor, warty dyskeratoma, melanoma, onychopapilloma and squamous cell carcinoma. Systemic and other dermatological conditions associated with this dyschromia include hemiplegia, postsurgical scar, Darier disease, lichen planus, epidermal nevus (acantholytic dyskeratotic variant), amyloidosis, graft-versus-host disease, acantholytic variant of epidermolysis bullosa and acrokeratosis verruciformis. LE may be single banded, double banded or multi banded involving single digit or multiple digits. Other associated nail findings include onycholysis, splinter hemorrhage, nail fragility, splitting, subungual hyperkeratosis, V-shaped nick and thinning of nail plate. It is often asymptomatic and distal nail fragility or cosmetic appearance may be the only reason to visit dermatologists. But some patients experience excruciating pain in nail region, associated digit or even pain extending to forearm on affected side.[1,2]

A glomus tumor is benign neoplasm that arises from cells of the glomus body and represents one of the several members of a group of painful tumors that may affect any body area but about 3/4th occur in the hand, and 2/3rd of these are seen in fingertip areas, especially in the subungual location.[3,4] Glomus bodies are highly concentrated in the fingertips, therefore, glomus tumors are most commonly seen in pulp and subungual regions.[5] Solitary glomus tumors are most frequent and present as painful lesions but when occur as multiple lesions, they are usually painless. Females are affected more often than males and most patients are between 30 and 50 years of age. Subungual glomus tumors

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classically present with a triad of symptoms including pain, pinpoint tenderness, and cold sensitivity. Some may present as longitudinal fissuring or distal notching along with longitudinal erythronychia.[6]

These tumors are difficult to diagnose and patients keep on visiting multiple and even quacks without a definitive diagnosis or treatment plan. Diagnostic modalities that can be helpful include X-Rays, color-Doppler imaging and MR imaging. To establish accurate diagnosis of a longitudinal erythronychia-associated condition, the nail matrix biopsy and/or the nail bed biopsy may be necessary. Especially in elderly in patients presenting with a monodactylous longitudinal red band biopsy must be done to exclude underlying squamous cell carcinoma.[4,6]

The treatment of glomus tumor causing LE is primarily surgical and the recurrence rates varies from 12-33%. If symptoms recur within few days of surgery it suggests partial or inadequate excision and if symptoms starts months to years postoperatively this can be sign of recurrent or multiple tumors. For surgical excision the transungual approach is usually preferred as it gives the best exposure in case of subungual lesion. To prevent nail deformities, the nail plate should be replaced in its original position.[7,8]

Here we report a case of young lady who had been visiting to many physicians and dermatologists for management of excruciating pain in right index finger but it could not be relieved by any therapeutic modalities offered to her during three long years.

Case report

A 27-year-old lady, reported to dermatology clinic with history of episodic pain in her right index finger on and off for last three years. It started suddenly and was not associated with any preceding trauma to finger or hand. Pain used to occur occasionally on extending her right forearm. Gradually it became more intense and frequent especially in winter months. For last one month before presentation, it became excruciating to the extent that she would not be able to do any manual work with her right hand and would get partial relief on taking painkiller medicines. There was no family history of similar complaint. She was married and had three children and currently was frustrated as she was not able to look after her children due to her disability. General physical as well as systemic examination was unremarkable. On local examination of affected digit, she had longitudinal brownish band starting just distal to proximal nail fold, traversing the whole length of nail plate and ending in triangular pattern with little notching and onycholysis at distal free edge **(Figure 1a)**. Love sign and cold sensitivity test was positive. Dermoscopy reveled band of reddish streaks mimicking "candy cane appearance" **(Figure 1b)**. There was no associated lymphadenopathy and rest all nails were normal. Plain digital X-Ray was inconclusive but magnetic resonance imaging (MRI) of the affected digit revealed high signal intensity area under the nail bed.

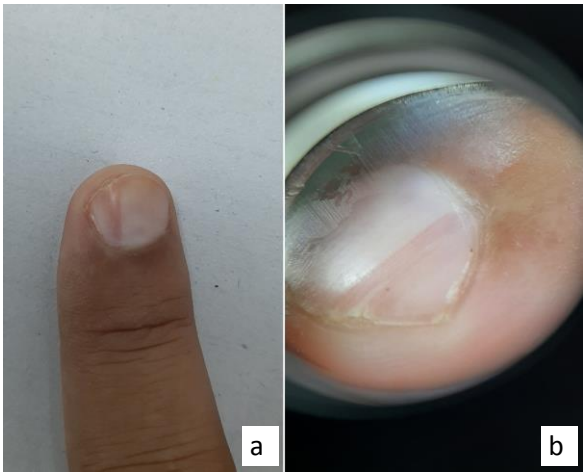
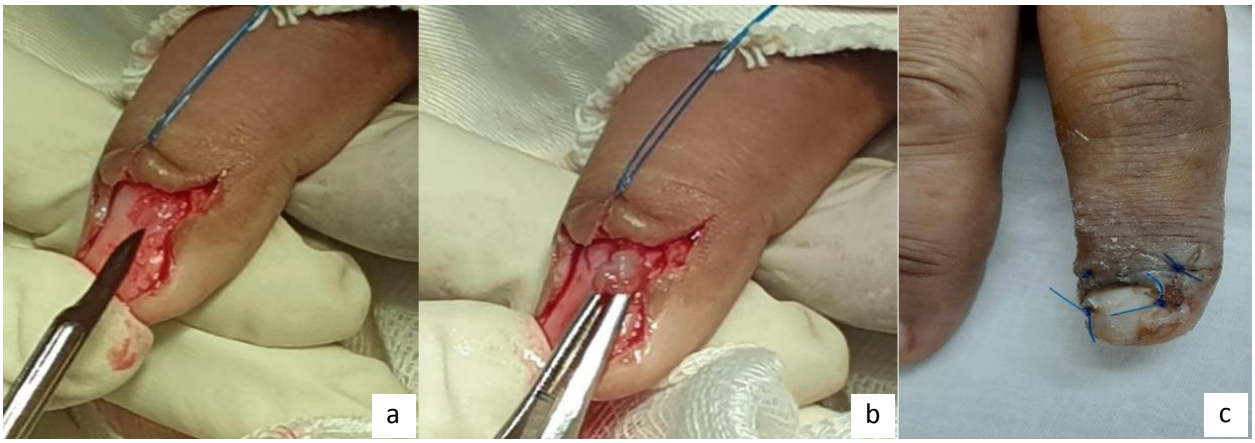
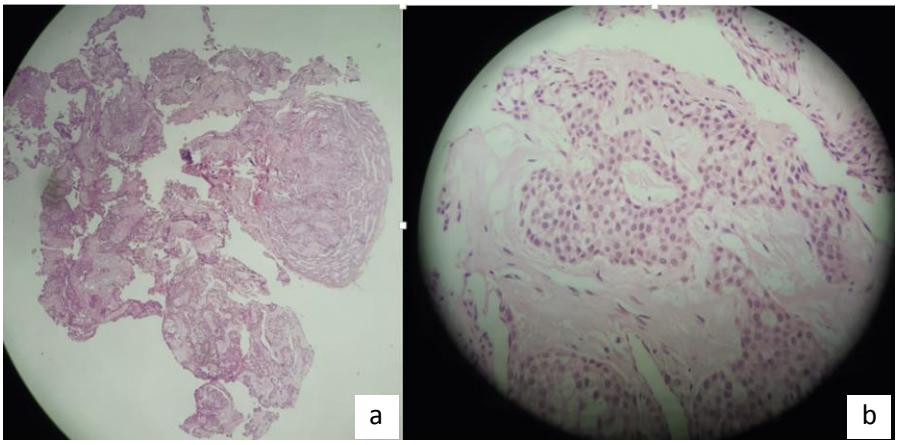


Figure 1 Longitudinal erythronychia clinical and dermoscopic appearance



Figur 2 a) Nail bed exposed after removing nail plate through transungual approach; b) tumor identified, explored and excised in toto; c) nail plate and longitudinal incisions sutured.



Figue 3 a) Scanning microscopic view of tumor mass; b) Under high resolution (x40); uniform sheets of small, uniform round cells with round to oval nuclei, forming a perivascular "collar" around vessels.

Based on triad of symptoms (severe pain, local tenderness and temperature sensitivity), longitudinal erythronychia and MRI finding, clinical diagnosis of digital subungual glomus tumor was made and patient was advised surgical excision. Surgery was carried out under local anesthesia (digital block) after applying tourniquet at the base of the digit for better visualization of the tumor during surgery. After observing aseptic measures exploration was done through transungual approach **(Figure 2a)**. Two vertical incisions along medial and lateral nail folds were given. Whole nail plate was separated by lifting proximal nail fold. A small shiny, pinkish, encapsulated lesion was observed arising from nail bed **(Figure 2b)**. The tumor was removed in toto and sent for histopathological analysis. Nail plate was placed and stitched along lateral nail folds for purpose of support and protection **(Figure 2c)**. Histopathology of the lesion later confirmed the diagnosis of benign glomus tumor **(Figure 3)**. She had an uneventful postoperative recovery and was free of pain at 3 month follow-up.

Discussion

Glomus tumors can present to physicians of varied specialties, and patients usually suffer for considerably a long period before reaching to correct diagnosis and appropriate treatment. In certain cases, less specific symptoms or

unremarkable physical examination can also delays e difficult to diagnose. Subungual glomus tumor needs to be differentiated from other subungual pathologies like blue nevi, angioleiomyoma, hyperplastic pacinian corpuscles, blue rubber bleb nevus syndrome, Maffucci syndrome and venous malformations. Rarely eccrine spiradenoma, Kaposi sarcoma, neurilemmoma may also mimic subungual glomus tumor.[2,4,6]

Our patient had characteristic symptoms of digital pain, aggravation by cold temperature and localized tenderness but it took almost three years for physician to reach clinical diagnosis of glomus tumor. Even when symptoms were more frequent and intense she was being managed with routine painkillers, not addressing the root cause of her symptoms. When explored in detail by dermatologist, she was found to have combination of classical signs and symptoms (excruciating pain, local tenderness, cold sensitivity, positive Love sign, candy cane appearance on dermoscopy). Upon successful removal of subungual tumour mass patient's long standing suffering was effectively relived and her quality of life significantly improved

We performed surgery through transungual approach for better visualization and wider approach which otherwise would not have been possible through longitudinal approach. This approach is preferred for complete removal of tumor mass to avoid recurrence which is not rare in subungual tumors.[8]

A case of long standing digital pain along with longitudinal pigmented band should warrant search for any subungual pathology and thorough clinical examination can lead to clinical diagnosis of glomus tumor. Timely and appropriate surgical management can have excellent outcome with minimum chance of recurrence.

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