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CASE REPORT

Writer's Bump: A Case Report

Navindra Phuyal[1], Niraj Pandey[1], Anup Pandeya[1], Kundan Kishore Ghimire[2], Ajaya Raj Gautam[3]

[1] Department of Anatomy, Rapti Academy of Health Sciences, Ghorahi, Dang, Nepal
[2] Department of Anaesthesiology, Rapti Academy of Health Sciences, Ghorahi, Dang, Nepal
[3] Department of Internal Medicine, Rapti Academy of Health Sciences, Ghorahi, Dang, Nepal

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Corresponding Author:

Navindra Phuyal
Department of Anatomy,
Rapti Academy of Health Sciences,
Ghorahi, Dang, Nepal
Email: itsmenavindra@gmail.com

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Abstract

Defined as a plaque of hyperkeratosis, callosities develop as an adaptive response to physical forces like pressure and friction. Racial and genetic factors are supposed to determine the response to mechanical forces that may lead to the formation of callus. Considered as a "badge of trade," calluses are given many names. Here we report a case of a bump on the thumb that was diagnosed as writer's bump, a form of callus caused by pens and pencils. In this case, the pressure from lifting dumbbells aggravated the bump. The patient was counseled and suggested to use gloves as padding and paring and use moisturizers to prevent ulcerations of the bump. Keratolytic agents, laser therapy, and excision by scalpel are other treatment methods available. Occupational stigmata like writer's bump and milker's calluses are prevalent, and clear definitions are needed for proper identification and management.

Keywords: callosities; corneal stroma; hyperkeratosis; keratolytic agents

Introduction

Although our skin is flexible, uncurbed frictional forces and repeated injuries in any form, be it abrasion, compression, stretching, minor cuts, or even pressure, affect its normal build-up. This may cause changes in the layers of the epidermis and may lead to the development of diseases if not addressed.[1] Genetic and racial factors likely play a role in determining the response of the skin to mechanical forces.[1,2] We present a case of 35-year-old male with a bump on the medial aspect of his right thumb that was diagnosed as writer's bump, a form of callosity in the hand. Increased pressure and friction induced by dumbbells resulted in increased size of the callus. We have also highlighted the treatment strategies and preventive measures.

Case Description

A 35-year-old male presented with a bump in his dominant, right hand. It was present for 5 years, initially smaller and constant in size. It was first felt and seen when he had to write for prolonged hours during his exams. He used to write with a pen with sharp borders. 5 months prior, it slightly increased and has been constant in the last 4 months. It was quite noticeable on the medial aspect of the palmar surface of the right thumb, distal to the interphalangeal joint crease, as shown in Figure 1 and Figure 2. He joined the gym 5 months back and started weightlifting without using any gloves. He stated that

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the bump started thickening since then. The bump was seen as a localized thickening of the skin that was well circumscribed, firm in consistency, not painful, and with no visible vascularity. It was freely mobile and was not attached to underlying structures. After due examination, it was diagnosed as a callus, otherwise called a writer's bump. The callus was 14.8mm × 6.5mm vertically and horizontally in size and with a height of 3mm from the base.

He complained of occasional pain induced when he used a pen for a longer period. It was aggravated by the pressure and friction caused by dumbbells, leading to increased thickening. He also complained of occasional thickening of skin in the palmar aspect, that presented after he started workouts, near the metacarpophalangeal joints that subsided after using half-finger gym gloves.

Counseled about the condition, he was suggested to use full gloves rather than the half-finger gym gloves, during workouts for padding. He was also suggested to use moisturizers on his hand and was asked to follow up if the callus grew in size or got painful.

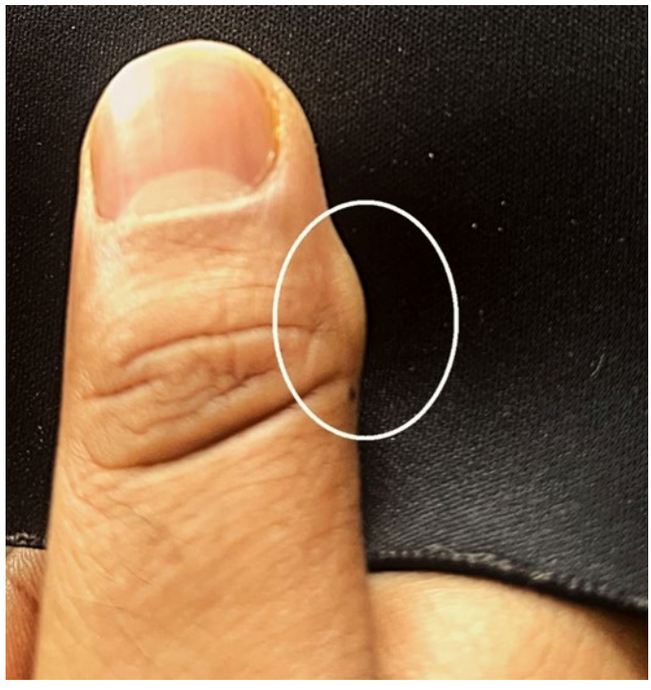

Figure 1: Writer's bump (marked by white circle) distal to the interphalangeal crease as seen in superior view.

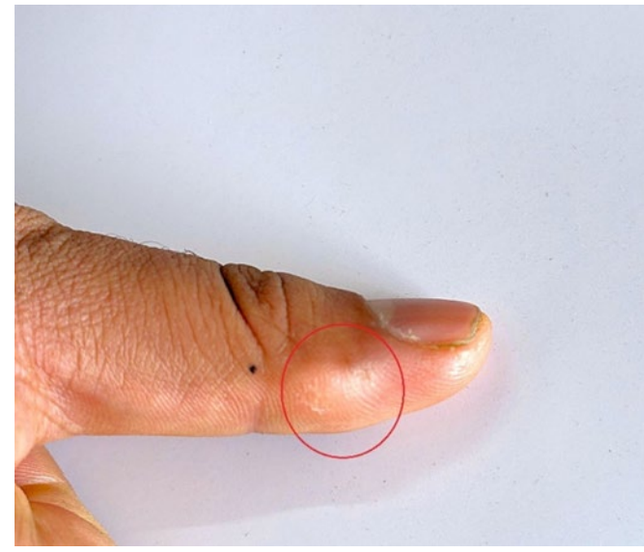

Figure 2: Writer's bump as seen in the medial aspect of the thumb distal to the interphalangeal crease.

Discussion

Callus is defined as a plaque of hyperkeratosis brought on by repeated pressure and friction, alone or together, that is widespread as a broad patch. In comparison, a corn is painful, sharply demarcated hyperkeratosis present around bony projections.[2] The response of skin to pressure and friction plays a key role in the formation of calluses, often affected by genetic and racial elements.[1-3] In addition, the site of the body also governs the response.[2] Callosities that are seen around the palmar surface of the hand are treated as characteristic occupational stigmata of wide-ranging professions.[2] They are supposed to be the result of adaptational effort of the skin and not merely a disability, until and unless infected.[2] A range of pathological reactions to physical, chemical, and biological agents cause adverse cutaneous reactions that are represented by a broad spectrum of illnesses.[4]

Among 2700 patients studied by Mullen, dermatosis was seen in 31 cases, among which physical friction was a contributing factor in 18 men and 9 women. Mean age of onset was found to be 42 years, and fingers of dominant hands were the most commonly affected.[5] In our case also, the callus was present in the dominant hand. They deduced that repetitive frictional injury leads to dermatitis that includes erythema, vesicles, and, most commonly, hyperkeratosis. Increased penetration of allergens percutaneously due to repeated frictional injuries can also cause micro-vesicles that leads to the formation of secondary eczematous changes.[5]

A similar case was reported by Srinivasan and Chakravarty, where a single callus was present on the middle finger of the dominant right hand of a female since she was 6 years old. It was present in the lateral

aspect of the middle finger.[6] Another case reported as milker's callus was found as localized skin thickening on the back of both thumbs, present for 9 years and caused by pressure exerted during milking of cows.[7] While in our case it was present for 5 years only, on the medial aspect of the thumb. Srinivasan's case was related to calluses and corns of the foot, whereas, in our case, it is absent; instead, occasional hyperkeratosis is complained of in the palmar aspect. Size was constant throughout in Srinivasan's case, whereas in our case it increased slightly after the use of dumbbells for workouts and has been stationary in the last 4 months. Srinivasan and Chakravarty deduced that the formation of callus was due to faulty handling of the pen, whereas manual milking and the use of the thumb to grasp the cow's teats caused pressure and friction, resulting in milker's calluses.[6,7] The tendency to acquire calluses was considered to be of autosomal dominant inheritance pattern. There was a history of a similar pattern in her father's hand.[6] There was no such history in our case.

Vetrichevvel's case was a single, hyperpigmented, roughened, and mobile callus free from the joint underneath. An increase in epidermal turnover leading to thicker skin and vertical orientation of the collagen bundles in the papillary dermis was considered a causative factor for callus formation. There was compact hyperkeratosis along with acanthosis and also moderate papillomatosis, as seen in histopathology.[7] In our case, no pigmentation was observed, and a histopathological test was not done.

Calluses usually occur in regions where the horny layer of skin is thick. Recurrent pressure and friction lead to the "badges of trade," the calluses.[1,8] Although the exact mechanism is not known, it is considered that abnormal distribution of shear and frictional forces in a broad area leads to a thick stratum corneum.[3] Callosities are often seen in the middle finger of stenographers due to the pressure of the pencil, on the thumbs of typists, sometimes on the hands of shoemakers, and on the middle fingers of workers in garment factories who use scissors to cut garments. It has also been seen around the palms of lathe workers who grip a lever.[8] Calluses have no association with any haematological, immunohistochemical, chemical, or serological malformation. Histologically, the changes are seen to be minimal, although thickening of the stratum corneum is often seen along with an intact stratum granulosum.[3]

Paring and padding are considered the first line of treatment along with topical keratolytics, mainly 40% salicylic acid and 40% urea cream, and in the second line, topical lipid extract with garlic is under study as a newer modality.[3] In our case he was suggested to use gloves for padding and paring, and keratolytic agents were not used. Excision by scalpel and laser ablation is also suggested in some cases.[6]

Conclusion

Although there is provision of treatment methods like paring and padding, laser therapy, and keratolytic, prevention of callosity can be done using applications that can either reduce or completely eliminate the friction and pressure. Occupational stigmata are prevalent, and clear definitions are needed for identification and proper management of those cases.

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Introduction

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