

## Curious Case of Swollen Digits: Pachydermodactyly

Dear Editor,

Pachydermodactyly is an uncommon form of benign digital fibromatosis that affects males of a younger age with asymptomatic and insidious onset, possibly due to repetitive local trauma or work which involves prolonged use of digits. A 21-year-old male, graduate in computer science, presented with asymptomatic symmetrical swelling of the second, third, and fourth digits of both hands for 3 years. The patient used a computer keyboard for at least 12 hours a day. There was no limitation in the range of movement in his fingers. There was no history of trauma, morning stiffness, digital tip ulcers, Raynaud's phenomenon, photosensitivity, skin lesions, hypoesthesia, pedal edema, or mucosal ulcerations. Clinical examination revealed symmetrical thickening of skin of the lateral aspect of the proximal part of the fingers without any apparent skin changes or tenderness [Figure 1a and b]. There were no other skin or any systemic findings. On evaluation, complete blood examination, thyroid function test, growth hormone levels and serum uric acid were within normal limits. Rheumatoid arthritis factor was negative; the X-ray of both hands' fingers showed soft tissue swelling over proximal phalanges with normal bones and articulations [Figure 2a and b]. Hematoxylin and eosin-stained sections examined from the affected skin showed a hyperplastic epidermis with compact orthokeratosis [Figure 3a]. The dermis appeared thickened and demonstrated coarse collagen bundles [Figure 3a]. There was mild patchy proliferation of fibroblasts with collagen deposition around adnexal structures [Figure 3b and c]. Masson's trichrome stain confirmed the collagen with a blue color [Figure 3d]. On the basis of these findings, we diagnosed this patient as a case of pachydermodactyly. He was counselled regarding the risk factors, triggers, and the course of illness, especially focusing on the prolonged hours involving keyboard

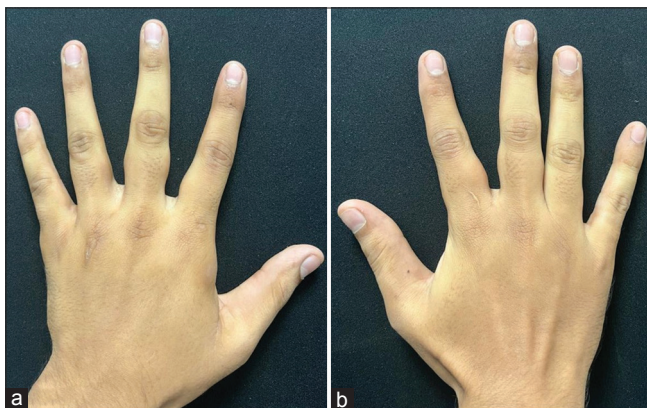


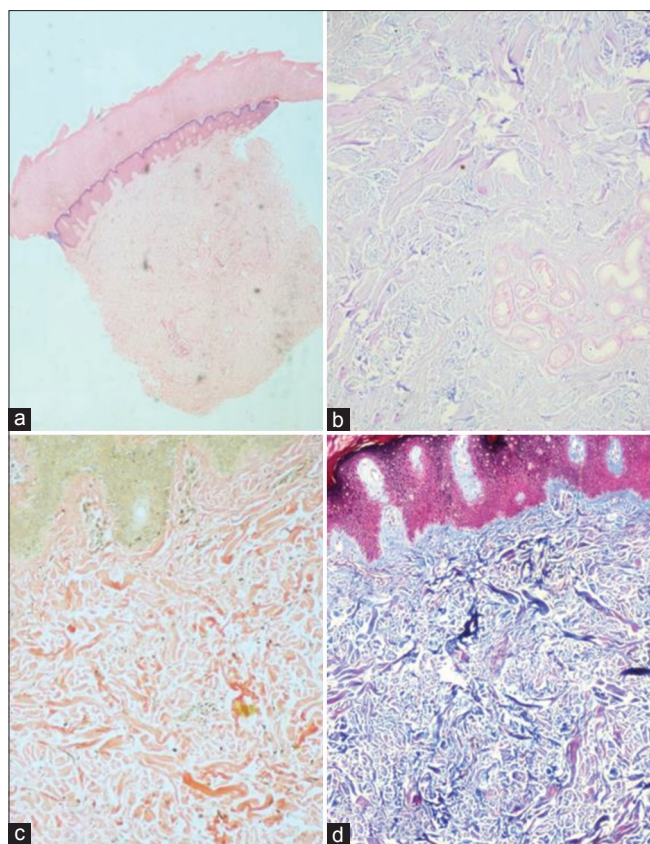
Figure 1: (a and b) Symmetrical swelling around proximal phalanges of the 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> digits of both hands

use. He was administered monthly intralesional injection triamcinolone acetonide at 20 mg per ml strength, to which he showed satisfactory response.

The term "pachydermodactyly" is derived from a Greek words meaning thick skin and fingers.<sup>[1]</sup> First reported by Bazex *et al.* in 1973,<sup>[2]</sup> pachydermodactyly predominantly affects adolescent males, which is associated with repetitive mechanical stimulation, and can be confused with joint disorders or rheumatologic diseases.<sup>[3]</sup> It presents as symmetrical diffuse swelling of skin around the dorsal and lateral aspects of proximal interphalangeal joints of index, middle, and ring fingers. Chen *et al.*<sup>[4]</sup> proposed the diagnostic criteria: patients with no symptoms of morning stiffness, absent pain on motion and tenderness to palpation, radial or ulnar finger swelling, rather than circumferential, and unremarkable laboratory test results with plain radiographs show only soft tissue swelling.<sup>[5]</sup> Differential diagnosis includes acromegaly and pachydermoperiostosis. Acromegaly will manifest with other features of hyperpituitarism, due to an excess of growth hormone. On the other hand, pachydermoperiostosis, as the name suggests, will present with changes in both soft and bony tissues.<sup>[6]</sup> It often starts at puberty, with slowly progressive thickening and furrowing of skin, scalp and face, digital clubbing, and periarticular and periosteal new bone formation (periostosis). Other clinical features are seborrhea, acne, cutis verticis gyrata, hyperhidrosis of palms and soles, erythematous lesions over joints, and a sense of increased warmth with burning in hands and feet. The major complication usually occurs in joints in the form of arthralgia, arthritis, and hydrarthrosis/hemarthrosis.<sup>[6]</sup>



Figure 2: (a and b) X-ray AP view of both hands showing soft tissue swelling over proximal phalanges with normal bones and articulations



**Figure 3:** (a and b) Hyperkeratotic, acanthotic epidermis with a thickened dermis (H & E 20 $\times$ , 40 $\times$ ) (c) Thin, elongated elastic fibers deposited sparsely in dermis as highlighted by black color (Elastic Van Gieson stain, 100 $\times$ ) (d) Dermis shows presence of haphazardly arranged thick collagen bundles stained blue color (Masson's Trichrome stain, 100 $\times$ )

Pachydermodactyly follows a benign course and is usually asymptomatic; hence, no aggressive treatment is required. The patient should be counselled to avoid stressors and habitual and local trauma-inducing work.<sup>[7]</sup> There is no universally accepted treatment for pachydermodactyly. Intra-lesional steroid injections are administered to reduce the swelling. The case is presented to bring forward this uncommon entity.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the parent has given the consent for images and other clinical information to be reported in the journal. The parent understands that names and initials will not be published and due efforts will be made to conceal patient identity, but anonymity cannot be guaranteed.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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