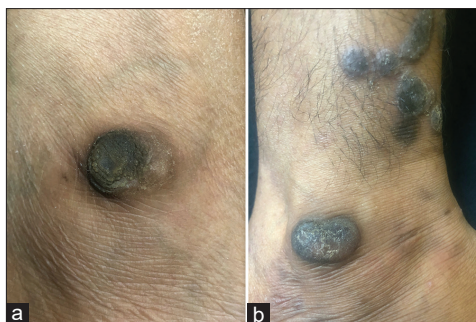


## Yoga Sign-A Locus Minoris Resistentiae to Remember

We introduced the “Yoga sign” in 2008 in dermatological literature describing pigmented callosities on the skin over the lateral malleoli, and at times over the fifth metatarsal and phalangeal bones due to cross-legged sitting on hard floors.<sup>[1]</sup> [Figure 1a] They are different from those described around the same period.<sup>[2]</sup> Sitting in this position for prolonged periods on a hard uncarpeted floor while meditating, eating, cooking, and for leisurely social interaction is a very common cultural practice in India and is preferred over chairs, sofas, and dining table sets which have not become the norm even today, especially in rural areas. This practice is prevalent in other South Asian countries too. Even in Western literature dating back to the 15<sup>th</sup> century, images of tailors have been depicted sitting in an identical position and is referred to as “tailor style sitting”.

Bony protuberances like lateral malleoli create outward pressure on the skin. Oft repeated contact resulting in friction between the hard floor and the skin over lateral malleoli during cross-legged sitting creates counter-pressure on the latter site. Repeated shearing forces, friction, and pressure lead to hyperkeratosis which further increases pressure, creating a vicious cycle of friction, pressure, and thickening of the skin.<sup>[3,4]</sup> Unlike in corns where the excessive frictional forces are concentrated at one point, they are distributed over a much broader area in a callosity. (>1 cm<sup>2</sup>). We have also observed that the “Yoga sign” is often unilateral because of a dominant lateral malleolus that is subjected to more pressure friction on the floor compared to the other malleolus.



**Figure 1:** (a) Typical pigmented callosity on the lateral malleolus. (Yoga Sign). (b) Lichen planus hypertrophicus developing over a long-standing callosity

After observing such patients for over a decade of describing the “Yoga sign”, we note that these are not merely cultural, innocuous callosities. We have seen several patients exhibiting secondary phenomena over them such as lichen planus, psoriasis, and eczema in order of frequency [Figures 1b and 2a,2b]. We propose that these callosities resulting from chronic blunt injury of pressure and friction are locus minoris resistentiae (sites of less resistance) for certain dermatoses to preferentially localize over them (*lmr*),<sup>[5]</sup> Koebner phenomenon being its oldest example. We also see “dermatitis in loco minoris resistentiae,” a term denoting the development of eczematous eruptions over previously injured skin [Figure 3a].<sup>[6]</sup> The phenomenon could possibly be explained by the localization of resident memory T-cells in the callosities, which are the result of repeated blunt trauma, especially in cases of lichen planus and psoriasis. We have not felt the need to perform a biopsy to document the dermatoses developing over these callosities because

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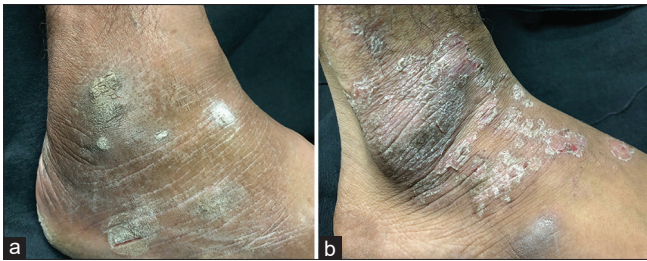
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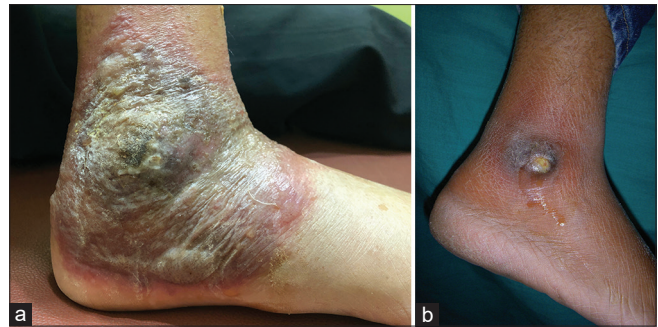
**Figure 2: (a) 2A Psoriasis developing over a long-standing callosity. (b) Eczema localizing preferentially over a callosity**

of their classic presentation on other areas, and also due to the tendency of callosities to heal slowly following trauma. Callosities also have a propensity to get infected and ulcerate which can be troublesome in patients with sensory disturbances as seen in leprosy and diabetes. [Figure 3b].

In those patients who do not wish to, or cannot change the habit of cross-legged sitting, we see a marked reduction in the degree of hyperkeratosis and the unsightly hyperpigmentation primarily by relieving pressure and friction against the floor by using thick, soft, padding under the callosities. We advise long-term application of 6% salicylic acid ointment and 10% urea cream daily. While conventional treatment for secondary dermatoses is adequate even if somewhat prolonged, complete resolution of the callosities and hyperpigmentation seems an unrealistic goal in our opinion.

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Nil.



**Figure 3: (a) Eczematous dermatitis with superadded infection over callosity in poorly controlled diabetic patient. (b) Infection and Chronic sinus formation over callosity in a leprosy patient**

#### ***Conflicts of interest***

There are no conflicts of interest.

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