

PIEZOGENIC PEDAL PAPULES

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A case of painful piezogenic pedal papules in a young man is reported. A survey of 500 patients of all age groups taken from the hospital revealed only 8 cases. It is stressed that unless the physician is aware of this condition, these papules may remain undiscovered.

Key words : Piezogenic papules, Painful piezogenic pedal papules.

Piezogenic papule is the term used to describe the soft skin-coloured papules that appear on the sides of the heel when pressure is applied and which disappear when weight is taken off the foot.¹ The papules are believed to result from herniation of the fat tissue through the thin fascial layers, as a result of non-specific degeneration of dermal collagen.² This entity was first described in 1968 by Shelly and Rawnsley³ who introduced the term piezogenic to indicate that the papules and pain were due to pressure. (piezo=pressure, genic=giving rise to).

The papules, usually 2-10 mm in diameter, are more at the periphery of the heels. The pain is an unusual feature and when it occurs, the papules tend to be larger in size but fewer in number. The large cushion of fat in the heel which lies between the skin and the bone is normally divided into small fat chambers by connective tissue septae and trabeculae. With time, some of these connective tissue structures degenerate and allow the peripheral small fat chambers to herniate, thus producing the non-painful papules. Large painful papules result from fusion of smaller fat chambers. The precise cause of the structural connective tissue defect has not yet been determined,⁴ although, a latent inherited aetiology is suspected, in addition to the possibility of trauma. The extrusion of the fat tissue together with its blood vessels and nerves initiates pain on prolonged standing. The resultant ischemia may be an important factor in the causation of pain.³

We are reporting a case of painful piezogenic pedal papules in a young man.

Case Report

A 21-year-old male student, complained of multiple, painful papules on the sides of heels since 6 months. Examination revealed that, when the patient stood-up, multiple, painful, soft, skin-coloured, 5 to 12 mm sized papules appeared on the non-weight-bearing portions of the heels of both feet (Fig. 1) and they all dis-

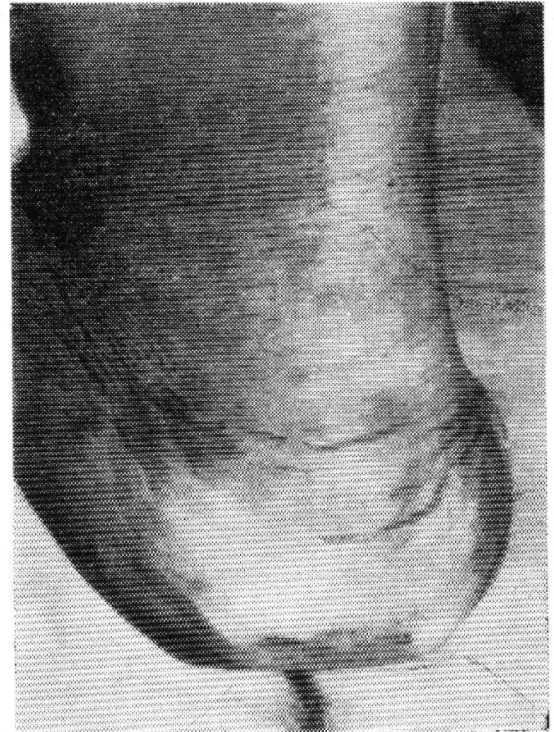


Fig. 1. Multiple piezogenic papules on the heels when the patient stood up.

appeared when the patient sat on a chair (Fig. 2). In the sitting posture, manual pressure by squeezing the ankle and applying pressure to the plantar surface, made these papules to reappear. There was no other skin lesion and general physical and systemic examination did not reveal any abnormality. The patient was asked to wear a shoe with suitable foam rubber pads inside, and this gave him relief from pain, though the papules persisted.



Fig. 2. The piezogenic papules disappeared when pressure to the heel was relieved by making the patient sit on a chair.

Routine investigations on blood and urine did not reveal any abnormality. X-ray of the heel showed only normal structures. Histopathology of a papule showed a loosely arranged reticular pattern of dermis with small compartments of fat tissue budging into it.

Comments

Painful piezogenic pedal papules have not so far been reported from India, to the best

of our knowledge. It is the pain that brought the papules to the attention of our patient. If there were no pain, these papules might have remained undiscovered. Detection of this case prompted us to make an attempt to find out the true incidence of piezogenic pedal papules in general population. Five hundred consecutive patients of different age groups attending the out patient section were examined. Only 8 (1.6%) were found to have these piezogenic papules (Table I). The papules were painless and none

Table I. Age and sex incidence of piezogenic pedal papules detected in the survey of 500 patients.

| Age group in years | Number of patients examined | | Number of patients detected | |
|--------------------|-----------------------------|---------|-----------------------------|---------|
| | Males | Females | Males | Females |
| 10-20 | 50 | 50 | Nil | Nil |
| 20-30 | 50 | 50 | 1 | Nil |
| 30-40 | 50 | 50 | Nil | Nil |
| 40-50 | 50 | 50 | 4 | 3 |
| 50-60 | 50 | 50 | Nil | Nil |
| Total | 250 | 250 | 5 | 3 |

of the patients was aware of these abnormal papules. Seven (87.5%) of the eight patients were aged between 40 and 50 years and the male to female sex ratio was 5 : 3, the size of the papules varied from 2 to 8 mm in diameter. Body weight varied from 42 to 68 kilograms, the mean weight being 52 kg. Only half of the patients were using foot-wear.

It is likely that piezogenic papules are not as rare as the paucity of information about them would imply. This study reveals that unless the physician carefully looks for these papules, they are likely to remain undiscovered because most patients are completely unaware of these dermatocoels on their heels.

Typical histopathological changes are seen only if gross sections are taken parallel to the skin surface. In such sections, circular holes can be seen in the lower part of the dermis through which subcutaneous fat protrudes out when pressure is applied to the heel.

There is no specific treatment for this condition. Use of well fitting shoes with foam rubber pads inside gave relief to our patient. Avoidance of prolonged standing is also beneficial to the patients.⁵ The cause of this condition still remains in the dark.

References

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