

## EXAGGERATED ONYCHODERMAL BAND ASSOCIATED WITH UNILATERAL RACKET THUMB NAIL

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**Abstract.** Exaggerated onychodermal bands and a unilateral racket thumb nail occurred in a healthy 36-year-old primiparous female. Each condition is described and the relationship of exaggerated onychodermal bands to chronic renal disease (systemic disease) is reviewed. We are reporting this patient since we have been unable to find a similar reported case with both abnormalities and because of the paucity of information on these conditions in the dermatology literature.

**Key words:** Nails; Onychodermal band; Racket thumb nail; Genetics

Two uncommon nail abnormalities, exaggerated onychodermal band (ODB) and a unilateral racket thumb nail, were observed in a healthy 36-year-old Caucasian female. Because of the paucity of information on these conditions and inability to find a similar published case report, we present a patient with both of these rare abnormalities and describe each condition.

### CASE REPORT

The patient is a 36-year-old primiparous Caucasian female in the 7th month of an uncomplicated pregnancy. She was seen in our clinic for an unrelated skin condition; her abnormal nails were noticed during the course of the physical examination. The left thumb nail was wider than it was long and had lost its lateral curvature. The right thumb nail appeared to have the normal configuration. All the finger nails had an exaggerated brownish-red crescent shaped band, concaved proximally, immediately proximal to the free nail margin (Fig. 1). The patient denied any nail symptoms including onycholysis, hapalonychia, onychomadesis, onychoschizia or brittleness. The patient is in good health and denies any significant past illnesses or complications during this pregnancy. General physical examination and laboratory screening studies revealed no evidence of renal, hepatic, pulmonary or thyroid disease.

The family history reveals that her father has bilateral racket thumb nails and her mother's nails are of normal

configuration. It is interesting to note that her 34-year-old sister has bilateral racket thumb nails, while the youngest sister (age 32 years) has normal appearing thumb nails. The other family members, however, do not have the exaggerated onychodermal band.

### COMMENT

Terry (6) first described the onychodermal band as summarized below:

The nail bed is differentiated into 3 distinct zones: (1) the half moon or lunula; (2) the larger distal pink area—the main pink zone (MPZ); and (3) the barely perceptible pale narrow band, the onychodermal band (ODB) that runs transversely across the distal portion of the nail, immediately proximal to the free edge of the nail (Fig. 2). Normally it is 0.5 to 1.5 mm wide. Commonly it is less apparent on the thumbs. The band is paler than the MPZ and has a slight amber tinge with a faint translucent quality. In negroes, traces of brown pigment may occur. Often a fine transverse white line may be seen at the junction of the band and MPZ. The ODB disappears in people who clean their nails with pointed instruments and in nail biting. Separation of the ODB from the nail plate, which appears to have a different nerve supply than the MPZ, is painless. The blood supply seems to be independent of the MPZ, since pressure on the central portion of the nail plate produces blanching of the MPZ without affecting the ODB. Because of the differing nerve and blood supplies, Terry felt that the ODB was more closely related to the adjacent skin than to the nail bed.

Abnormalities of the ODB result in exaggeration of the band's characteristics. In examining 2500 hospitalized patients Terry found 9 abnormal ODB.



Fig. 1. The racket nail is on the left. Note that it is wider than it is long.

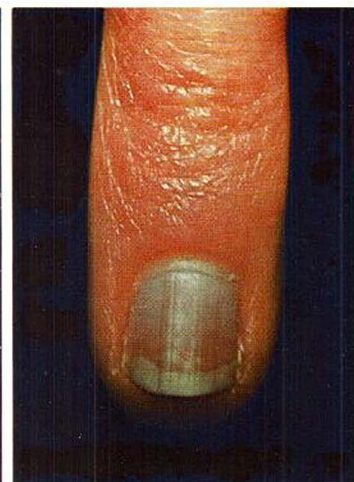


Fig. 2. This is the exaggerated onychodermal band as described by Terry (6). Note that the band is just proximal to the free nail margin.

Five were associated with hepatic cirrhosis and one each was associated with generalized keratosis, thyrotoxicosis, pulmonary eosinophilia, and malnutrition. These exaggerated bands were also seen in normal subjects but no incidence figures were cited.

The half-and-half nail, which appears to be an exaggerated ODB was reported by Lindsay (1) to be a manifestation of chronic renal disease. In a patient sample of 1 500 patients, he discovered 25 patients with exaggerated ODB. Twenty-four of these patients had a wide spectrum of chronic renal disease, of which 21 were azotemic. In an unknown number of patients with acute renal disease, exaggerated ODB were not seen. Also, no correlation could be made between the longitudinal length of the onychodermal band and the degree of azotemia.

The brown nail-bed arcs and chronic renal disease was described by Stewart & Raffle (5). He reported finding that 35% (12 out of 34 patients) of patients with chronic renal disease had exaggerated onychodermal bands, as compared with less than 2% (7 out of 500) found in a general patient sampling.

A racket thumb nail, so-named because of its resemblance to the tennis racket, is an inherited abnormality in which the thumb nail is wider and shorter than normal with the loss of its natural curvature. It is seen in normal individuals and is not associated with systemic disease, mental retar-

dation, syndromes or symptoms other than self-consciousness. Folklore, according to Ronchese (2) apparently blamed the condition on a pregnant female stepping on a snake or some other similar incident. Rook (3) and Samman (4) state it follows an autosomal dominant inheritance pattern. Ronchese concluded it is 3 times more frequent in women and unilateral involvement is seen half as frequently as bilateral involvement.

In this patient we do not know the relationship of these two uncommon abnormalities, nor do we know the pathophysiology that results in the appearance of this exaggerated band. However, the exaggerated onychodermal band should serve as another external manifestation of systemic disease and alert the physician to the possibility of chronic renal disease or hepatic cirrhosis.

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