

“Twisted and Rolled Body Hairs”: An Ultrastructural Study by Means of Scanning Electron Microscopy

Sir,

Since the first description by Itin et al. in 1994 (1), no other cases of twisted and rolled body hairs have been described in the literature. The main characteristic of this hair condition consists in the presence of groups of hairs thickly interlaced and impossible to untie. We would like to present a new case in which an ultrastructural study by scanning electron microscopy (SEM) has been performed. The aim of this report was to investigate the ultrastructural characteristics of the hairs involved.

MATERIALS AND METHODS

A 52-year-old male patient complained of itching on the back. The patient was in good health and his anamnesis for dermatological diseases was negative. A single knot of hairs originating from different

follicles was found in the sites of the itching and scratching, while the remaining parts showed normal body hairs.

Abnormal hairs were plucked and studied by means of a Philips 505 scanning electron microscope. The fibre specimens were longer than 3 mm.

RESULTS

The SEM study allowed us to visualize the inner structure of the thick hair knot at the centre of the observed tangle. The most important abnormalities observed of the hair shaft were torsions resembling pseudo pili torti, plait-like figures (Fig. 1), flattening of the hair shafts partly due to mutual (reciprocal) contact and partly to forced bending. Multiple schistasis due to sudden curvatures imposed by the thick knot of the hair shafts was present (Fig. 2). We did not observe any triangular hair shafts, as commonly reported in pili trianguli et canaliculi

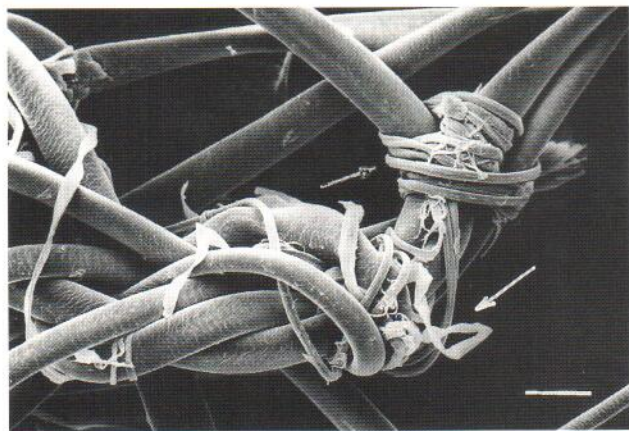


Fig. 1. Groups of hairs thickly interlaced, resembling plait. Textile fibres are present inside the plait (arrows) ($\times 132$). Bar is 100 μm .

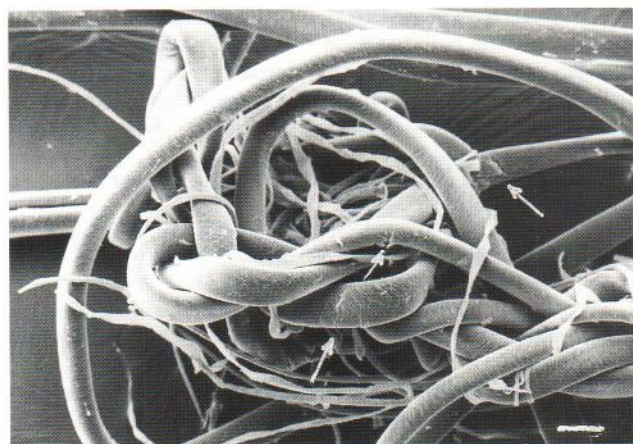


Fig. 2. Hair shafts with a ribbon appearance. Some schistasis is present along the hair shafts (arrows) ($\times 97.2$). Bar is 100 μm .

(spun-glass hair). The roots of the fibre specimens looked like normal hair. We found colonies of yeast in the bulbar region of some hairs (Fig. 3), and the same finding was observed along the hair shafts (Fig. 4). In the hair tangle we also found textile fibres.

DISCUSSION

Twisted and rolled body hairs are an unusual hair malformation, constituted by knots and twists of body hairs. They are considered an acquired defect, but a hereditary trait has been described and for this last possibility Itin himself suggested a modality of transmission with dominant autosomic trait. The pathogenesis of this defect is not actually known. In the acquired form the most peculiar feature is the traumatic factor induced by scratching or rubbing, while in the hereditary form it is a bulbar anomaly known as "lanugo". However, Resnik (2) considered twisted and rolled body hairs to be only an acquired defect. Differential diagnosis is with trichonodosis (knotted hair with single or double knot), rolled hairs (circle hairs) (3), pili multigemini (several matrices and papillae with separate internal root sheaths emerging from one follicle), felted hairs (tangling of scalp hair), powder puff hairs (knotted fibres of powder puff entwined with vellous hair). In our patient the hair anomaly revealed itself to be an acquired

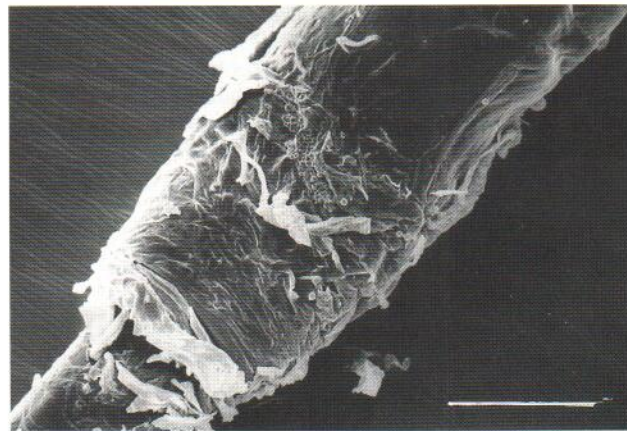


Fig. 3. Colony of yeasts in the bulbar region of the hair ($\times 360$). Bar is 100 μm .

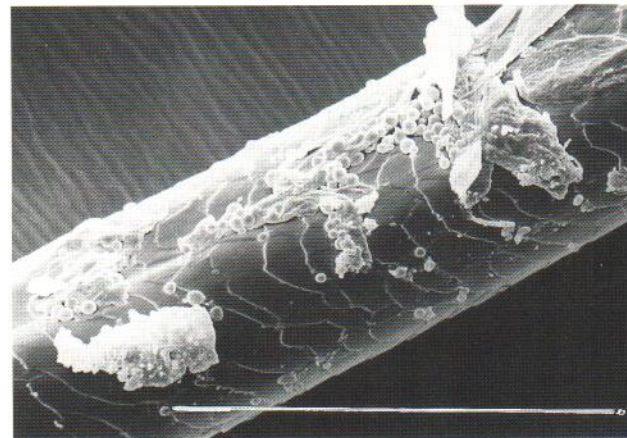


Fig. 4. A large number of colonies of yeasts along the hair shaft ($\times 800$). Bar is 100 μm .

lesion, so we think that prolonged scratching was the origin of the anomaly. We believe that the presence of textile fibres tangling together with hair fibres could also be a consequence of prolonged scratching. Our patient usually wore cotton underwear. The normal participation of yeasts in the cutaneous flora, compared with the rarity of this defect, seems to make yeast unlikely as a causative factor.

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Accepted March 17, 1997.

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