CASE REPORT

A Case of Isolated Trichorrhexis Nodosa and Trichoscopic Images

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Summary
Trichorrhexis nodosa (TN) is a hair shaft disorder characterized by fragile hair with nodes on the hair shaft. Here we report a case of aquired localised trichorrhexis nodosa and describe the importance of noninvasive tools like trichoscopy and light microscopy in the diagnosis of an isolated TN.

Key words: *Trichorrhexis nodosa, Hair shaft, Nodes, Trichoscopy*

Introduction
TN is a hair shaft disorder characterized by fragile hair with nodes on the hair shaft. It may be congenital, acquired or occur secondary to physical and chemical trauma. Careful history taking and simple examination can avoid unnecessary tests and can diagnose this condition. Here we report a case of aquired localised trichorrhexis nodosa and describe the importance of noninvasive tools like trichoscopy and light microscopy in the diagnosis of an isolated TN.

Case Report
A 28-year-old man presented with a lock of hair on the frontotemporal hairline that was different from the rest (Figure 1a). The patient had no systemic medical illnesses and there was no family history of similar illness. He denied history of trauma, itching, use of hair cosmetics, hair bleaching, hair dyes, hair perming or straightening.

On examination the hair was dry, brittle and of varying lengths, there were multiple white spots along the hair shafts in the affected area and the hair over the rest of the scalp was normal. Differential diagnosis considered was pediculosis capitis, peripilar keratin casts, trichorrhexis nodosa and white piedra.

Trichoscopy demonstrated broken hairs shafts and white nodes along hair shafts (Figure 1b). Light microscopy (40x) showed fraying of cortical fibers giving the appearance of two paint brushes thrust together (Figure 1c). Based on Trichoscopy and light microscopy, diagnosis of trichorrhexis nodosa was confirmed. As

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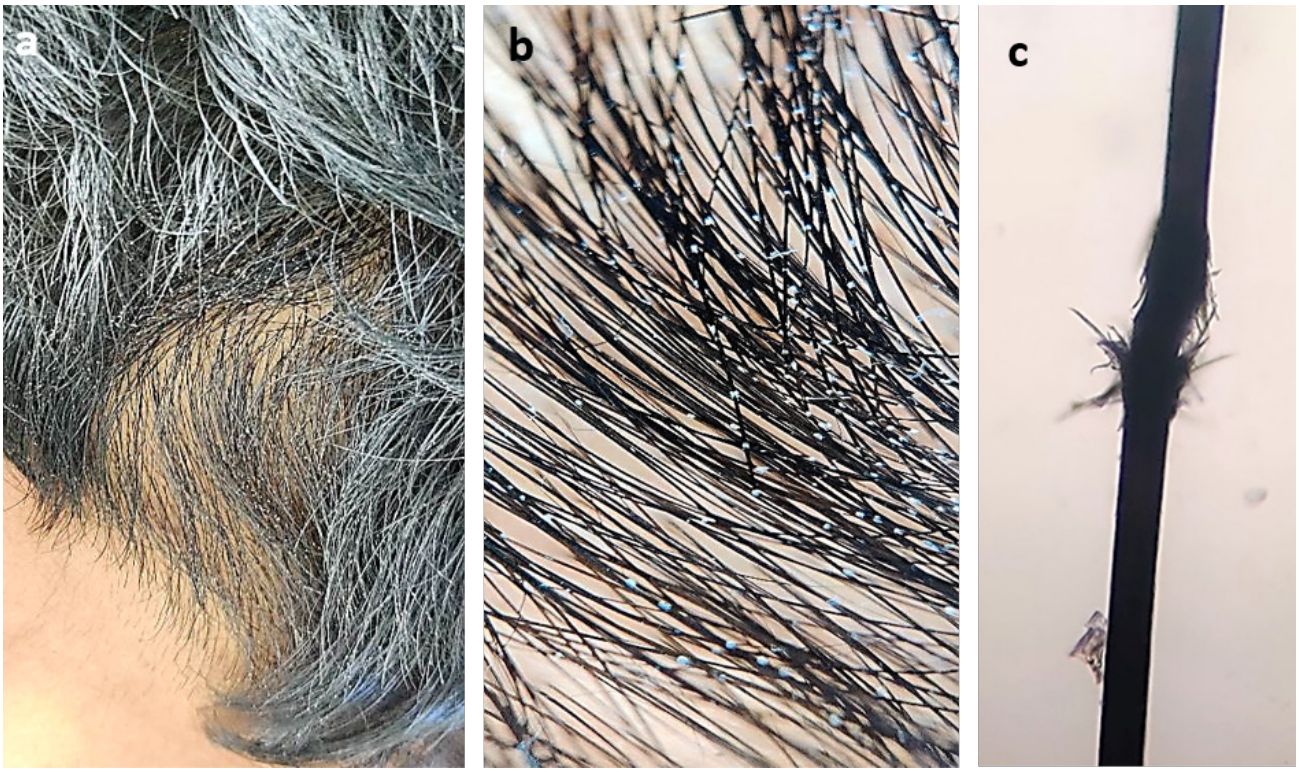
Figure 1(a) Multiple white spots along the hair shafts in the affected area; (b)Trichoscopy (non polarised light) demonstrated broken hairs shafts and white nodes along hair shafts ; (c) On Light microscopy(40x) - fraying of cortical fibers giving the appearance of two paint brushes thrust together.



there was no evident cause for trichorrhexis nodosa in this patient we suspected physical or chemical trauma as an incriminating factor. We also advised him to use straight combs with elongated bristles. Patient was also given multivitamins (B-complex forte) and asked to look out for any habit tics that may be causing cuticle damage.

Discussion

Trichorrhexis nodosa was first described by Samuel Wilks in 1856 and it was named by M. Kaposi in 1876.[1] It may be congenital, acquired or associated with some disorders like hypothyroidism, Menke's kinky hair syndrome, argininosuccinicaciduria and iron deficiency.[2] Acquired TN, however, is much more frequent and is classified into 3 major groups: proximal (predominantly among blacks) or distal (the most common in Spain) according to the area of the hair shaft in which the nodules appear, and localized.[3]

Very few cases of localized TN have been reported in the literature. Its main clinical characteristic is that it is limited to well defined hairy areas generally the scalp, but also the beard, moustache, pubic hair, etc. Several factors including physical traumas that may cause sufficient damage to the hair shaft include excessive brushing, back combing, stressed hairstyles, the application of heat, and prolonged exposure to ultraviolet light. Chemical traumas include excessive exposure to salt water, shampooing, setting, perming, bleaching, and dyeing of hair.[4]

Macroscopically, hair shafts affected by Trichorrhexis nodosa contain small white nodes at irregular intervals throughout the length of the shaft. The number of nodes may vary from one to several, depending on the length of the hair. These nodes represent areas of cuticular cell disruption, which allows the underlying cortical fibers to separate and fray. The cortical fibers display outwards and fracture, giving the node the microscopic appearance of two brooms or paintbrushes thrust together end to end by their bristles. Complete breakage often occurs at these nodes.[5,6] There is no specific treatment

for TN. The only possible effective measure is to identify the predisposing factors and to avoid repeated traumas. Certain coadjuvant treatments (such as hair repairers or vitamin complexes) can also be helpful.[7,8]

Trichoscopy is a non-invasive diagnostic tool. It allows detailed visualisation of hair and provides clues for inherited and aquired causes of hair loss. Hair examination using trichoscopy and light microscope in routine clinical practice may provide useful information for the correct diagnosis, ranging from common head and pubic lice infestations to rarer shaft abnormalities.[9,10]

Conclusion

Trichorrhexis nodosa is a hair shaft disorder that can be easily diagnosed with a careful history and simple examination using dermatoscopy and light microscope which can thereby avoid unnecessary tests.

Conflict of Interest Declaration

All authors have no financial/conflict of interest to disclosed.

Acknowledgement

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