MULTIPLE HAIR DEFECTS

(A case report)

By

N. K. MATHUR, J. S. PASRICHA & K. C. KANDHARI

Trichorrhexis nodosa has been known for nearly a century now. According to Chernosky and Owens (1966), the first case was described by Wilson in 1849 under the term "Fragilitas Crinium," Beigel (1855) described the characteristic microscopic features, while kaposi (1876) coined the term "Trichorrhexis nodosa." Most of the authors believe it to be a rare abnormality of the hair (Leider, 1950; Pillsbury et al, 1957 and Crounse, 1962), but Chernosky and Owens (1966) have reported 49 cases and claimed that this is quite a common condition. Association of Trichorrhexis nodosa with other hair anomalies is still rare. Cases have been recorded in associaton with trichostasis spinulosa and pili annulati (Leider, 1950), trichoptilosis (Dorn, 1956), trichonodosis and trichokinesis (Thoroczkay, 1963) and monilethrix (Menkes et al, 1962). We are reporting a case of trichorrhexis nodosa with multiple hair abnormalities.

Case Report. A 20 year old sikh gentleman presented with progressive reduction in the length of his hair all over the scalp for the last two years. Exa. mination of the scalp revealed a few keratotic follicular papules on the forehead (Fig. 1) and the hairs taken from different areas of the scalp showed typical features of trichorrhexis nodosa (Fig. 2). Some of the hair showed irregularly placed constrictions (Fig. 3) and at a few places the shaft seemed to be twisted along its longitudinal axis. He was otherwise quite healthy and intelligent. There was no history of any systemic illness in the past. Other members of the family were normal.

Discussion. Several hereditary hair diseases have been associated with inborn errors of metabolism but the evidence so far has not been unequivocal. Association of argininosuccinic aciduria has been reported with trichorrhexis nodosa (Allan et al, 1958; Levin et al, 1961 and Shelley and Rawnsley, 1965) and with monilethrix (Grosfeld and Mighorst, 1964). On the contrary, Von Pilsum and Halberg (1962) and Carson and Neill (1962) have reported cases of argininosuccinic aciduria without involvement of the hair, and Rauschkolb et al (1967) failed to find any significant difference in the urinary excretion of argininosuccinic acid in patients of trichorrhexis nodosa and normal controls. Winther and Bundgaard (1968) have also reported normal excretion of argininosuccinic acid in the urine of cases of monilethrix, pili annulati and pili torti.

Owens and Chernosky (1966) were able to reproduce changes of trichorr hexis nodosa by rubbing normal hairs in a specially designed apparatus and incriminated trauma as the main etiological factor in producing trichorrhexis nodosa.

From the Department of Dermatology and Venereology, All India Institute of Medical Sciences, New Delhi-16, India.

Received for publication on 23-10-1969

The occurrence of multiple hair defects in the same individual as in the present case, lends greater support to the presence of an inherent abnormality in the hair-forming system. The poorly formed hair are then more prone to breakage under the normal stresses and strains.

Summary. A 20 year old gentleman with trichorrhexis nodosa, keratosis pilaris, irregularly placed constrictions along the length of the hair and a minor degree of pili torti is reported. Multiple hair abnormalities are presumed to suggest an inherent defect in the hairs.

REFERENCES

1. Allan, J. D.; Gusworth, D. C.; Dent, C. E. and Wilson, V. K.: A disease, probably hereditary, characterised by severe mental deficiency and a constant gross abnormality of amino acid metabolism. Lancet, 1: 182, 1958.
2. Carson, N. A. J. and Neill, D. W.: Metabolic abnormalities detected in a survey of mentally backward individuals in Northern Ireland. Arch. Dis. Child., 37: 505, 1962.
3. Chernosky, M. E. and Owens, D. W.: Trichorrhexis Nodosa clinical and investigative studies. Arch. Derm., 94: 577, 1966.
4. Crounse, R. G.: Trichorrhexis nodosa and amino acid metabolism. Arch. Derm., 86: 391, 1962.
5. Dorn, H.: Dominant heredity of trichoclasia bound to sex chromosomes (trichoptilosis in combination with trichorrhexis nodosa). Z. Haut-u. Geschlkr., 20: 199, 1956. Quoted by Excerpta Med Sec. XIII, 10: 479, 1956.
6. Grosfeld, J. C. M.; Mighorst, J. A. and Moolhuysen, T. M. G. F.: Argininosuccinic aciduria in monilethrix. Lancet, 2; 789, 1964.
7. Leider, M.: Multiple simultaneous anomalies of the hair. Report of a case exhibiting trichorrhexis nodosa, pili annulati and trichorrhexis spinulosa. Arch. Derm., 62: 510, 1950.
8. Levin, B.; Mackay, H. M. M. and Oberholzer, V G.: Argininosuccinic aciduria an inborn error of amino acid metabolism. Arch. Dis. Child.. 36, 622, 1961.
9. Menks, J. H.; Alter, M.; Steigleder, G. K.; Weakly, D. R. and Sung, J. H.: A sex-linked recessive disorder with retarded growth, peculiar hair and focal cerebral and cerebellar degeneration. Paediatrics, 29: 764, 1962.
10. Owens, D. W. and Chernosky, M. E.: Trichorrhexis nodosa in vitro reproduction. Arch. Derm., 94: 586, 1966.
11. Pillsbury, D. M.; Shelly, W. B. and Kligman, A. M.: Dermatology, p. 1000, Philadelphia: W. B. Saunders Co., 1957.
12. Ranschkolb, E. W.; Chernosky, M. E; Knox, J. M. and Owens, D. W.: Trichorrhexis nodosa an error of amino acid metabolism. J. Invest. Derm., 48: 260, 1967.
13. Shelley, W. B. and Rawnsley, H. M.: Aminogenic alopecia: Loss of hair associated with argininosuccinic aciduria. Lancet, 2: 1327, 1965.
14. Thoroczkay, M.: Trichonodosis with trichorrhexia nodosa and trichokinesis Borgyogy. Vener. Szle., 39: 150, 1963.
15. Von Pilsum, J. F. and Halberg, F.: A method for the determination of argininosuccinic acid in human urine. Amer. J. Ment. Defic., 67: 82, 1962. Quoted by Arch. Derm., 94: 577, 1966.
16. Winther, A. and Bundgaard, L.: Argininosuccinic aciduria in hereditary hair diseases. Acta Derm-venereol., 48: 567, 1968.