

Hair morphology in androgenetic alopecia: Sonographic and electron microscopic studies

Wortsman, Ximena

Guerrero, Robinson

Wortsman, Jacobo

Objectives-To assess hair morphology in androgenetic alopecia on sonography and electron microscopy. **Methods-**A prospective study was performed in 33 patients with androgenetic alopecia and 10 unaffected control participants. In vivo sonography of the hair follicles of the scalp and in vitro sonography and electron microscopy of the hair shafts were performed according to a standardized protocol that included analysis of the right frontal and occipital regions. The upper frequency limit of the ultrasound probes ranged between 15 and 18 MHz. **Results-**Scalp hair follicles and hair shafts were recognizable on sonography in all cases. Hair follicles in alopecia cases had significantly lower depths ($P < .05$). The hair shafts in alopecia also had a different distribution of their laminar pattern on in vitro sonography, with a greater presence of mixed (trilaminar and bilaminar) and solely bilaminar tracts in comparison with the controls (mostly trilaminar). On electron microscopy, the alopecia