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## Polydioxanone threads in androgenetic alopecia: A novel innovation

Jyotirmay Bharti and Priyanka Patil  
Skin Radiance Clinic, India

**Introduction:** Polydioxanone (PDO) threads have become an emerging trend for facial rejuvenation. The entire basis of the thread lift technique is the foreign body cutaneous response to the presence of threads within the skin. Androgenetic alopecia may result in disturbed self perception and psychosocial interaction. Various treatment modalities like oral finasteride, topical minoxidil and platelet rich plasma (PRP) have been tried with good therapeutic benefit.

**Objective:** Herein we determine the efficacy & safety of polydioxanone threads in five patients suffering from hair loss due to androgenetic alopecia and not responding to 9 months therapy with minoxidil and finasteride.

**Material & Methods:** Five patients suffering from hair loss due to androgenetic alopecia and not responding to 9 months treatment with minoxidil and finasteride were included in this study. Polydioxanone threads were introduced in dermal layer at first visit. The outcome was assessed after 1 and 2 months by clinical examination, trichoscopy, hair pull test and patient self-assessment.

**Results:** PDO threads led to a good clinical result. A significant reduction in hair loss and hair re-growth was observed between first and second month after thread insertion. Hair count increased from average number of 65 hair follicular units to 93 hair follicular units. 4 patients have been followed up to 5 months with considerable improvement in hair volume and coverage and 1 patient up to 6 months with excellent improvement.

**Conclusions:** PDO threads for androgenetic alopecia is the simple, feasible, gives faster results and comparatively painless treatment option compared to mesotherapy and PRP for hair loss and can be regarded as the valuable adjuvant treatment modality. Thus, further studies are needed with longer follow up with large sample size.

umanjyoti@gmail.com

## Formulation and evaluation of hair enhancing cream derived from propolis ethanolic extract

Patricia Mikchaela D L Feliciano, Ciela Kadeshka A Fuentes, Bea Trixia B Gales, Ethel Princess A Gepulango, Martin R Hernandez, Elina Andrea S Lantion, Jhoe Cynder P Legaspi, Peter F Quilala and Gina C Castro  
University of Santo Tomas, Philippines

Propolis is a resin-like material used by bees to fill large gap holes in the beehive. It has been found to possess anti-inflammatory property, which stimulates hair growth in rats by inducing hair keratinocytes proliferation, causing water retention and preventing damage caused by heat, ultraviolet rays and other microorganisms without abnormalities in hair follicles. The present study aimed to formulate 10% and 30% Propolis Hair Cream for use in enhancing hair properties. Raw propolis sample was tested for heavy metals using Atomic Absorption Spectroscopy; zinc and chromium were found to be present. Likewise, propolis was extracted in a percolator using 70% ethanol and concentrated under vacuum using a rotary evaporator. The propolis extract was analyzed for total flavonoid content. Compatibility of the propolis extract with excipients was evaluated using Differential Scanning Calorimetry (DSC). No significant changes in organoleptic properties, pH and viscosity of the formulated creams were noted after four weeks of storage at 2-8°C, 30°C and 40°C. The formulated creams were found to be non-irritating based on the Modified Draize Rabbit Test. *In vivo* efficacy was evaluated based on thickness and tensile strength of hair grown on previously shaved rat skin. Results show that the formulated 30% propolis-based cream had greater hair enhancing properties than the 10% propolis cream, which had a comparable effect with minoxidil.

mrhernandez.025@gmail.com