The Effect of Electrical Epilation on the Beard Hair of Women with Idopathic Hirsutism

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Summary. The influence of epilation by means of diathermy and galvanic current on the hair roots in the beard region of 11 women with idiopathic hirsutism has been investigated. The hair roots could be destructed by both methods.

Various differences were found between the two methods:
1. After 10 weeks, the hair density in the field treated by diathermy was lower than that in the corresponding field treated with galvanic current. However, the time required for total destruction of all hair roots was found to be the same for both methods.
2. The diameter of the hairs growing again after diathermy was found to be less than that after galvanic current, while the proportion of dysplastic/dystrophic hairs was significantly greater.

Introduction

The data in the literature on the effect of depilation in the beard region are scarce and contradictory.

Methods of depilation in the beard region can be divided into two classes:
1. methods not aimed at permanent destruction of the hair root.
2. methods aimed at permanent destruction of the hair root.

We shall now discuss briefly the work published on these two types of methods.

1. Methods of Depilation Not Aimed at Permanent Destruction of the Hair Root

The effect of shaving by normal men has been investigated by: Berthold (1850), Ono (1963) and Arakawa (1965), who found an increase in the weight of the hair after shaving; Ohya (1954), who found an increase in the thickness of the beard hair; Seymour (1926), who found an increase in the growth rate, and
Trotter (1923), Ohya (1954), Montagna (1962) and Johnson (1965), who found in contradiction to Seymour that the growth rate did not increase after regular shaving.

The effect of depilatory creams (with active substances such as sulphides of barium and strontium and thioglycollates in combination with an alkaline substance, such as calcium hydroxide) on the growth of hair in the beard region has not been investigated.

Thallium in a cream has been found to give permanent inhibition of hair growth when used continuously; it can also lead to intoxication by absorption (Morse, 1963, Rook, 1965, Ridley, 1969).

No data have been published on the effect of depilation by resins on the hair growth in the beard region.

2. Methods of Depilation Aimed at Permanent Destruction of the Hair Root

Two methods are available:

a) electrocauterization by means of a high-frequency alternating current = diathermy

b) electrolysis by means of a direct current = galvanic current.

Ridley (1969) found that only few hairs grew again after epilation by means of galvanic current. After epilation by diathermy, nearly all hairs were found to grow again, but the diameter of the new hairs was less than before. Repetition of this form of epilation could lead to permanent destruction of the root.

Savill and Warren (1962) are of the opinion that galvanic current stimulates a change in the growth of hair in the vicinity from vellus to terminal hair.

Materials and Methods

In this study the effect of electrical epilation in the beard region, aimed at permanent destruction of the hair root, has been studied in 11 women with idiopathic hirsutism (without symptoms of virilization and without endocrinological and/or gynaecological deviations) in the age-group from 20 to 45 years.

Two fields (each 1 cm² in area) were marked on the skin, symmetrically on either side of the midpoint of the lower edge of the mandible, with the aid of a flexible polyvinyl sheet placed over the skin of the jaw in which the appropriate fields were cut out beforehand (Fig. 1).

In the right hand field all hairs were epilated by diathermy using an apparatus with a frequency of 1.5 MHz and a current of 80 mA; in the left-hand field, this was done with a galvanic current of 2 mA. In both methods, current was applied for 2 sec with the aid of an uncoated platinum epilation needle with a diameter of 170E (100E = 87.50 \(\mu\)m) with a tapering point. This needle was introduced into the papilla until a slight resistance was felt.

All epilatory treatment was performed by the same beauty specialist.

The same skin fields were epilated at intervals of two weeks, all hairs removed being placed on a specially prepared microscopic slide. This made it possible to determine:

A. the hair density
B. the diameter of the hair just distal of the root
C. the status of the hair roots
for each field separately.

Results

The data obtained in this investigation were subjected to statistical analysis by means of the rank sign test, with a significance level of \(\alpha = 0.05\).