The Microscopic Appearance of Hairs After Laser Hair Removal Treatment

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Abstract
This poster will demonstrate the microscopic appearance of pubic hairs after four (4) laser hair removal treatments over a two (2) year period. Hairs were collected for one week following treatments and mounted on glass microscope slides for analysis. The laser hair treatment had a dramatic effect on both the proximal end as well as the distal end of some of the treated hairs.

Introduction
Laser hair treatment is a popular method of removing unwanted hair from various body regions. The method works by targeting the melanin (pigment) in hairs over a period of time. The treatments are spaced 10-12 weeks apart to target hairs in various growth stages. The better the laser is able to distinguish pigment in hair from pigment in skin, the more effective the treatment becomes.

Materials and Methods
Hairs were collected for approximately a week after four (4) treatments and mounted on glass microscope slides with Permount mounting medium. The hairs were then photographed using a Mideo camera system.

Results
The laser treatment had a variety of effects on the hairs collected. Some hairs maintained virtually no recognizable hair-like shape (Figure 1) while others appear untouched (Figure 2).
Some hairs only appear to have been affected at the proximal end (Figure 3) while others were affected at the distal end (Figure 4).

Some hairs show signs of damage at both the proximal end and distal end (Figure 5).
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Some of the damage seen is similar to the expansion and bubbling effect seen in heat damaged hairs without the blackened areas (Figure 6).

Interestingly, some of the lesser affected hairs, where the hair was only damaged at the proximal end, the proximal end has a tapered appearance (Figure 7) like those seen in hairs affected by chemotherapy (Figure 8).
For comparison, Figure 9 shows a telogen or naturally shed root and Figure 10 shows an anagen or forcibly removed root.

Conclusion/Discussion
The differences in damage seen is likely due to how close the collected hair was to the directly treated area ("direct hit" from the laser vs. nearby). Most often, the damage resembles damage seen in singed hairs or heat damaged hairs with expansion of the shaft and slight bubbling effect.