

improvement 4 to 6 months after treatment completion.^{4,8} This was the case in our study, as supported by the fact that of the 12 patients who had not shown significant improvement at the 45-day follow-up evaluation, 10 (83.3%) demonstrated a significant positive change at the 90-day follow-up evaluation.

Our study used 2-week intervals between treatments. Radiofrequency treatments of the face and neck are frequently performed at 4-week intervals to maximize affected collagen during treatment. Nonetheless, additional clinical studies are needed to determine optimal treatment intervals. The standardized photography protocol used in the study ensured consistency between before and after photos. Bouncing the flash against the wall at a standardized distance ensures that photos accurately depict the skin quality without blanching or minimizing wrinkles, veins, or skin texture.

Improvement of facial appearance after radiofrequency treatment has been attributed to the production of new collagen after tissue injury from use of the device.⁵ The dorsum of the hand is composed of multiple fatty lamina divided by fascial layers, wherein the tendons and vessels lie.⁹ Many treatments for hand rejuvenation have been directed at volumizing this space with either autologous fat transfer or synthetic fillers to replace the loss of connective tissues. It is possible that radiofrequency-induced neocollagenesis within this small compartment masked the presence of the large reticular veins, accounting for an aesthetic improvement seen in some of our patients. Studies have shown that in addition to dyschromia and wrinkles, part of what patients perceive as an "aged hand" is one with prominent vessels.¹ For this reason, we included vessel visibility as part of our GAIS assessment.

Limitations of this study include the relatively small number of subjects and the fact that all participants were female. The latter may be due to the fact that aging hands are not of cosmetic concern for males. Given the nature of radiofrequency treatments, a double-blinded study was not possible. Each physician rated the photographs of the subjects treated at her site. A future study could use an independent blinded physician evaluator for assessment of the photographs using the GAIS.

The safety profile and encouraging results of this initial study suggest that the radiofrequency system may be a valuable addition to the treatment arsenal for hand rejuvenation.

CONCLUSIONS

The aging hand is characterized by 3-D changes that include thinning of the epidermis and a decrease in connective tissues, resulting in prominent veins and tendons. The aged appearance of the hands is compounded by dyschromia caused by chronic sun exposure.² Both the face and the hands are among the most exposed areas of the body. This lack of synchronicity between the appearance of the face and the hands is most noticeable in

those patients who have undergone facial rejuvenation. Consequently, there has been a renewed interest in the "aging hand," and similar treatment modalities that have been employed for facial rejuvenation have been used with varying success to rejuvenate them.³ The unique anatomic characteristics of the hand and the multiple contributing factors that result in aging of the hand suggest that a combination approach is optimal in achieving a more youthful appearance. Based on our study, treatment with a monopolar radiofrequency device is safe and effective for hand rejuvenation and should be considered as a procedure offered to patients seeking a more complete and harmonious improvement in their appearance.

DISCLOSURES

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