

Micro needling Radiofrequency in the management of atrophic and hypertrophic scars

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Microneedle Radiofrequency (MNRF) has been used to treat wrinkles, acne, axillary hyperhidrosis, cellulite, striae, hair thinning, rosacea, post inflammatory erythema but its role in treating atrophic acne scars is most pronounced. Microneedles deliver bipolar radiofrequency (RF) to the dermis & create RF thermal zones and cause mechanical disruption of fibrotic strands. This leads to proliferation of keratinocytes & fibroblasts causing dermal remodelling & neocollagenesis. Needles used may be non-insulated or insulated. Both have shown good efficacy in the treatment of skin texture. There are several variations among micro needling RF devices. These include insulated vs non insulated needles, variable vs fixed length needles, manual vs mechanical insertion, temperature/impedance feedback vs none, bulk vs fractional heating and motor vs manual insertion. Precise placement of the needles is essential to obtaining good results. This depends upon factors like technique of operator, depth chosen, resistance of tissues, needle sharpness, number of needles and power of motor. MNRF is a very well tolerated treatment with negligible adverse effects. Immediately after treatment there is tolerable pain (increasing with 3rd & 4th pass), micro papules due to microneedles, spot bleeding, erythema & edema lasting 2- 4 days. However, no scarring or pigmentary complications are seen owing to the fact that radiofrequency is a color blind technology independent of melanin. According to several studies and the author's personal experience, MNRF is a superior technology for treating atrophic and hypertrophic scars due to the higher skin penetration of the microneedles (up to 3.5 mm) vs lower penetration of fractional lasers (up to 0.7 mm) along with added mechanical scar disruption. There is also minimal epidermal trauma and in turn low PIH when compared with CO2 laser & 1565nm NAF lasers. MNRF reduces sebogenesis useful in the maintenance of acne and also has a tightening effect documented in previous studies