

Title of abstract: Advanced technique of Mirajet Part 1

Affiliation: SeoAhSong Dermatologic Clinic

Authors: Suk Bae Seo

Introducing the Mirajet - a revolutionary device designed for precise drug delivery during dermatological procedures. Unlike traditional methods, this device uses a laser as a power source to deliver drugs through the skin with minimal damage. The Mirajet works by focusing energy on a medium that absorbs the laser, creating a microjet blast that launches the drug at high speeds. The device consists of two chambers, with the upper chamber containing the special liquid medium and the lower chamber storing the drug. By directing the laser at the medium, the elastic membrane rapidly expands, exerting pressure on the drug and launching it through a small nozzle. The Mirajet can deliver drug volumes ranging from 1-5 μ l to depths of approximately 100-1500 μ m and can achieve speeds of up to 800m/sec. Researchers have discovered that the combination of an Er-YAG laser and water offers sustainability, reproducibility, and durability. When fired at an angle, the Mirajet can induce detachment in the upper dermis along with the drug, resulting in a subcision effect. The temperature of the lower chamber remains below 40-45°C, even during prolonged high-speed delivery. To effectively stimulate the dermis through physical mechanotransduction, it is crucial to inject a solid component at high velocity with a duration of action that is appropriately long. The Mirajet, when combined with PDLLA material, has produced remarkable clinical results that surpass those achievable with manual injections or other drug delivery devices. In conclusion, Mirajet is an innovative device that employs laser energy to deliver drugs accurately and rapidly during dermatological procedures. It offers advantages such as precise drug delivery, reduced skin damage, and the ability to generate mechanotransduction signals within the dermis, making it a promising tool in the field of drug delivery.