**ABSTRACT**

A 60-year-old female presented with chief complaint of scarring along the right pre-auricular and submental incision five years following rhytidectomy procedure. On examination there was widening of the right pre-auricular incision and tethering, hypertrophy and erythema of the submental incision. She did not desire to have any scar revision surgeries and opted for non-invasive treatment with the use of carboxytherapy. She underwent 10 carboxytherapy treatments each one to two weeks apart. She is satisfied with the results. (Figures 1 & 2).

**DISCUSSION**

Carbon Dioxide (CO$_2$) therapy was first introduced in France for cutaneous use.$^1$ CO$_2$ is a non-toxic gas that is naturally produced by cells as they undergo the process of metabolism. As CO$_2$ accumulates in the tissues it induces dilatation of capillaries and results in increased blood flow to facilitate its removal.$^2$ Lately, injection of the CO$_2$ gas has been used to improve stretch marks, skin laxity, cellulite, dark circles under the eyes and scars. It is believed that the mechanism of action for carboxytherapy is two fold. Initially the mechanical injection of the CO$_2$ gas causes destruction of fat cells and interruption of surrounding connective tissue. Secondly, the vasodilatory effects of CO$_2$ gas allows the accumulation of inflammatory response and enhances the process of healing leading to increased collagen deposition and reorganization and eventual improvement in skin texture and tone. (Figures 3&4) Furthermore, the injection of CO$_2$ has been shown to be relatively safe with little to no toxicity.$^{1-5}$ As such, carboxytherapy can be used as an adjunct to liposuction in order to remove any irregularities. Furthermore, the revascularization and collagen remodeling effects of carboxytherapy lends itself to use for improvement of unsightly scars.$^{1-3,5}$

Treatment by carboxytherapy is relatively painless. The injection is carried through a 30 gauge 5/8 needle with the bevel directed towards the skin. Patients typically experience a light tingling sensation at the injection site that soon dissipates. The area might feel warm for 10-20 minutes and there may be some ecchymosis at the injection site. The subcutaneous crepitus that ensues is usually resolved within an hour and patients are asked to avoid hot baths, hot tubs and saunas for about four hours. A typical treatment protocol consists of 10-20 treatments divided weekly. Results are usually noticed after the 5th treatment and improved with subsequent treatment. Because of the relative absence of toxicity, the ease of use and the predictable results, carboxytherapy is a great tool in the armamentarium of cosmetic surgeons.

**REFERENCES**