Effect Of Graston Technique On Post-Gravid Stretch Marks

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Abstract

Objective: To determine the effectiveness of Graston technique on post-gravid stretch marks

Design: Pilot Study in which 1 multiparous female was treated 6 times with Graston technique to reduce visibility of stretch marks.

Results: Inconclusive data due to the small sample size. However, reduction in the disability index as well as reduction of firmness and color was noted.

Conclusion: Further study is warranted to determine the effectiveness of Graston Technique on post-gravid stretch marks.

Introduction

More than 70% of women are affected with striae gravidarum or "pregnancy stretch" marks frequently found on the abdomen, hips, buttocks and breasts following pregnancy[1]. These stretch marks tend to occur after 25 weeks gestation and may be due to genetic factors, endocrine alterations and mechanical stretching of the skin[1].

Although the etiology of striae gravidarum is still unclear, it is thought that a loss of fibroblast synthesis and connective tissue irregularity are major factors in the development[1]. Striae gravidarum are typically linear bands that begin as erythematous to violaceous but fade progressively to become skin colored or lighter[2].

Striae gravidarum is of great cosmetic concern for many women. There are many proposed methods of prevention for striae gravidarum, including topical application of cocoa butter, olive oil, aloe vera, or vitamin E. However, there are few available postpartum treatment options for striae gravidarum and there is little or no evidence to show their consistent efficacy[3,5]. Some postpartum treatments include laser removal, topical tretinoin (Retin-A), oral tretinoin (Vesanoid), and Mederma (topical, over the counter medication)[5].

Graston technique uses stainless steel instruments to perform soft tissue mobilization. Graston is thought to remove scar tissue adhesions and increase proliferation of extracellular matrix fibroblasts[4]. As striae gravidarum is thought to be related to decreased fibroblast proliferation and irregular connective tissue, it could be speculated that Graston technique applied to these irregularities may reduce or remove them.

This research will investigate the efficacy of using Graston tools and technique to reduce or remove post-gravid stretch marks in women.

Materials and Methods

Participants for this study were recruited from the Logan College of Chiropractic campus and the ability to participate was available to students, student family or faculty in good standing with the university. Due to the subject matter involved, this study was only applicable to female subjects. This study was approved by the Institutional Review Board at Logan College of Chiropractic. Participants were required to be between the ages of twenty to thirty-five with abdominal stretch marks resulting from pregnancy. Participants were a minimum of two years post-gravid but no more than 5 years post-gravid. Also participants were required to have a Body Mass Index (BMI) lower than 30 in order to participate in this study. Participants were excluded if currently pregnant or had a previous cesarean section. Participants were excluded from this research study based on other criteria such as, open wounds on the abdomen, uncontrolled hypertension, kidney dysfunction, hematoma over the stretch mark site, myositis ossificans, osteomyelitis or if currently undergoing treatment for stretch marks. Once eligibility was granted, participants were required to complete a post-gravid disability questionnaire prior to their first treatment. The post-gravid disability questionnaire is tailored specifically to females with post-gravid stretch marks. It consists of five

multiple choice questions revealing the extent that the stretch marks have affected the individual's life (Table 1).

Participants that met all criteria were required to meet at the research department on Logan campus for six total visits. Graston technique was given to the stretch mark area two times a week for three weeks for a total of six treatments. Graston Technique is a patented therapy which utilizes stainless steel instruments to treat various areas of the body. Each tool is designed with a curvilinear edge and is contoured to accommodate the various shapes of the body.

Treatment following Graston protocol was given by Graston Module 1 graduates and current Trimester 10 students of Logan College of Chiropractic under the direction and supervision of Dr. Daryl Ridgeway, D.C., a Logan faculty member and Graston certified instructor. Treatment was given for 2 minutes using Graston tool #3 (tongue depressor tool) along with the Graston emollient. After each treatment, the area was photographed, while the participant was supine on a treatment table. Measuring tape was affixed to patient next to the stretch mark site so that any change in length could be noted. The patient was required to fill out post-treatment questionnaire on the last visit and another photograph was obtained.

The digital photographs were charted in chronological order. The photographs along with the results from the personal survey questionnaire were analyzed to determine if any improvement in length or patient perception of post-gravid stretch marks was achieved using Graston technique.

Table 1. Post-Gravid Stretch Mark Disability Questionnaire

My stretch marks	0) Have no affect on my self-esteem 1) Have minimal effect on my self-esteem 2) Have moderate effect on my self-esteem 3) Have major effect on my self-esteem 4) Are the sole reason I have low self-esteem
I would describe my stretch marks as	0) No deformity 1) Mild deformity 2) Moderate deformity 3) Major deformity 4) Completely disfiguring
Due to my stretch marks, I wear_____ at the pool	0) My stretch marks do not affect my wardrobe 1) Two piece bikini 2) Two piece bathing suit (Tankini) 3) One piece bathing suit 4) One piece bathing suit with wrap or fully clothed
I have pregnancy stretch marks in_____ locations.	0) 1 1) 2 2) 3 3) 4 4) 5+
I have tried ____ treatments for stretch marks	0) 0 1) 1

	2) 2 3) 3 4) 4+
Score: Points total x 4	

Results

Much interest was noted in this study; however, only one person successfully qualified and completed the study. With only one participant in the study, any data presented is inconclusive. The effect of Graston technique on post-gravid stretch marks will require further study to determine.

The participant completed a post-gravid stretch mark questionnaire prior to treatment. The questionnaire scored a 36% disability. Upon beginning the study, the participant's stretch marks were described as multiple, light pink in color, and firm. As multiple stretch marks were present, a single stretch mark was chosen on the upper right quadrant of the abdomen (Figure A). The stretch mark was measured at 2.25 cm in length.

Length of the stretch mark did not change throughout the course of the treatment (Figure B). The post-treatment questionnaire on the final visit revealed a total disability of 32% (Table 2).

Figure A. Quadrants of the Abdomen

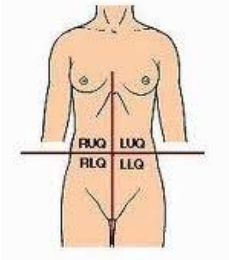
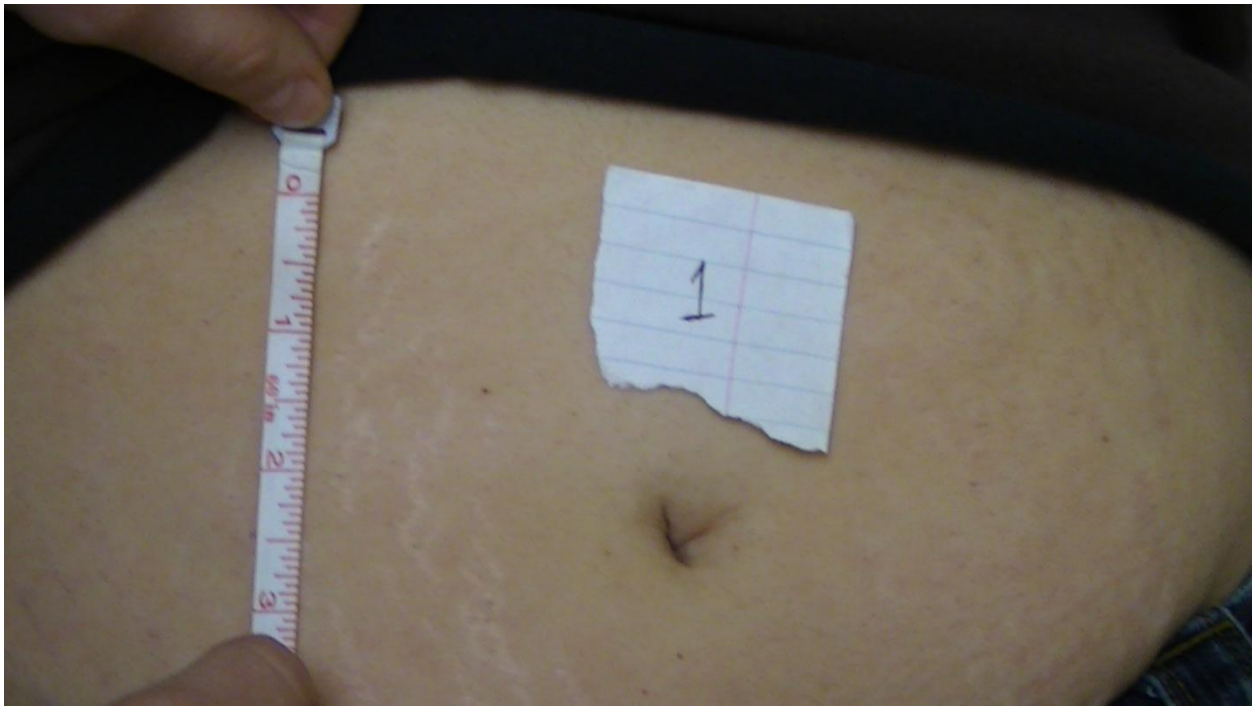


Table 2. Post-Gravid Stretch Mark Questionnaire Results

	Pre-treatment	Post-treatment
My stretch marks	(2) Have moderate effect on my self-esteem	(1) Have minimal effect on my self-esteem
I would describe my stretch marks as	(2) moderate deformity	(1) mild deformity
Due to my stretch marks, I wear_____ at the pool	(3) One piece bathing suit	(3) One piece bathing suit
I have pregnancy stretch marks in_____ locations.	(2) 3 locations	(3) 4 locations
I have tried ____ treatments for stretch marks	(0) 0	(0) 0
Total Index	9 points x 4= **36%**	8 points x 4 = **32%**

Figure B. Pre-treatment photographs.

Visit 1



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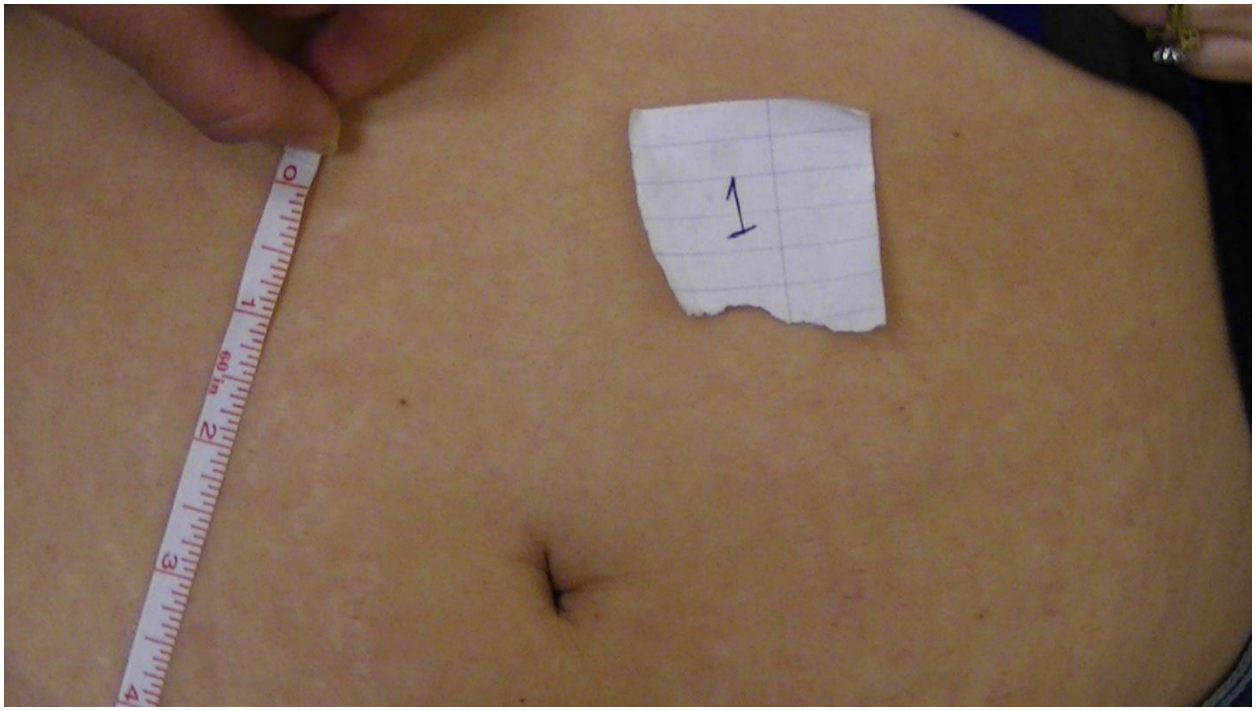
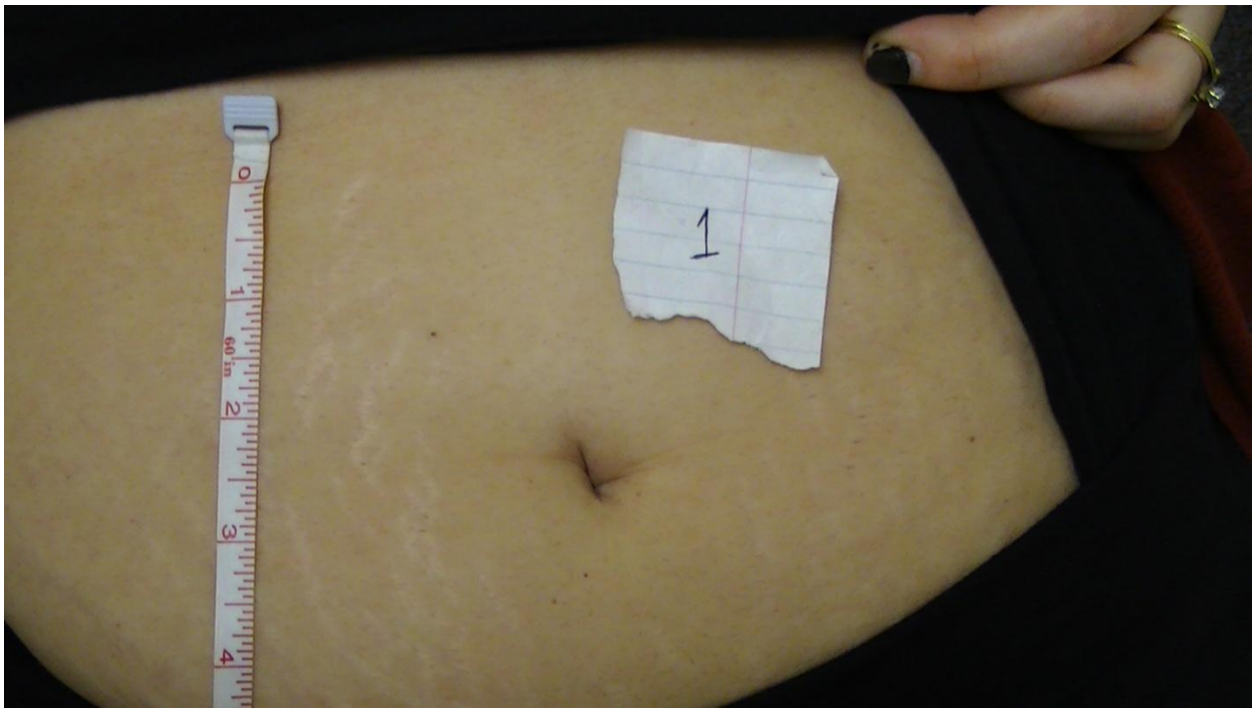


Visit 4

Visit 5



Visit 6

Discussion

As stated previously, these results are inconclusive due to the small sample size of the study. However, due to the favorable results in this small pilot study, further investigation is warranted. Although no quantifiable method was used to evaluate change in color, quality, or texture, the participant reported a decrease in the firmness and color of the stretch mark throughout the course of treatment. Additionally, the participant showed a decrease in total disability in relation to her stretch marks from 36 to 32%. This study was based on a questionnaire which was developed by the researchers. This questionnaire was specifically geared toward the participants' feelings regarding their body in relation to their stretch marks. The difficulty of research in the cosmetic realm is being able to quantify results. This questionnaire provided quantifiable data similar to an Oswestry outcome measure, whereby a question is followed by five multiple choice answers. The answers are given a respective point value and the points are then used to calculate total disability or index. Although the disability decreased by 4% from pre to post-treatment, we are unable to determine if this was the result of chance or due to a true decrease in disability. A sample size of at least 6 would be ideal for demonstrating the changes that may take place with Graston technique.

It has been noted in the literature that different skin types may show different responses to treatment of stretch marks[3]. Moreover, since light or dark-skinned individuals have different likelihood of developing stretch marks, they may also have a different likelihood of response to treatment[3]. Perhaps further study should include grouping participants into their perspective skin types before beginning treatment. This system would help analyze the difference in responsiveness among the various skin types.

Since there is little research in this area and few treatments have been deemed effective, it is important to note the best option available, at present. Although, prevention seems to be the option that is most researched and promoted, the literature describes laser as a promising treatment for removal of stretch marks and various types have been used[6]. The 585-nm pulsed dye laser, 308-nm excimer laser, short pulsed carbon dioxide laser, and lasers emitting UVB radiation are noted to be beneficial on different types of stretch marks. The 585-nm pulsed dye laser can benefit those with striae rubra or stretch marks that are red in color. The 308-nm can benefit those with striae alba or white colored stretch marks. Lasers that emit UVB radiation may help to repigment the area of stretch mark[6]. Additionally, since Graston therapy is proposed to alter the deep layers of connective tissue, in effect altering the scar tissue, it seems that it may be a treatment option which would work on all types of stretch marks, regardless of color.

Conclusion

Further study is warranted on the effect of Graston Technique on post-gravid stretch marks. Since there is no tried and true treatment for post-gravid stretch marks and because of the low incidence of side effects with Graston Technique, proving the efficacy of Graston Technique would be a greatly beneficial to women.

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