TREATMENT OF ATROPHIC ACNE SCARRING –
Dermaroller vs Dermapen

Tony Chu
Professor of Dermatology
Dermatology Unit
Hammersmith Hospital
London, UK
AIMS OF THE STUDY

• To compare the safety and efficacy of the Dermaroller and Dermapen in treating atrophic acne scarring

• Specifically compare:
  • How well tolerated
  • How easy for the operator to use
  • How long was the downtime
  • How effective in improving scarring using subjective and objective measures
Dermaroller

- Stainless steel acupuncture needles
- 0.25mm needle gauge
- 1.5mm needle length
PERCUTANEOUS COLLAGEN INDUCTION

Dermapen
- Stainless steel acupuncture needles
- 0.33mm needle gauge
- 0.5-2.5mm needle length
- Speed from 1 (25 to 30/sec) to 7 (85 to 90/sec)
PCI PROTOCOL

Before

Apply EMLA Cream
DERMAROLLER PROTOCOL

Roll 4 times vertically, horizontally and diagonally.
This results in about 250 channels/cm².

No need to apply high pressure.
Aim to achieve pinpoint bleeding.
DERMAPEN PROTOCOL

Initial circular motion, then horizontal and vertical four times.
This results in over 80 channels/sec.
STUDY DESIGN

• Randomised trial in patients with atrophic acne scarring who had at least one treatment with the Dermaroller
• Randomisation using a computer-generated randomisation list
• Group A – further treatment with the Dermaroller and assessment at three months
• Group B – treatment with the Dermapen and assessment at three months
STUDY DESIGN

• Day 0
  • Recruitment
  • Randomisation
  • Identify scar to examine – Visioscan
  • Treatment

• Day 84
  • Patient and operator questionnaire
  • Visioscan
STUDY DESIGN

• 60 patents were recruited into this study
• One rolling scar was identified on each patient, marked and photographed
• Scar was scanned using the Visioscan VC98
• EMLA cream was applied and covered with polythene for one hour
• EMLA removed and skin swabbed with alcohol
• Filast serum was applied to the skin in a thin layer
VISIOSCAN

UV-A light video camera with high resolution
Using Visioscan software, volume of the scar was calculated.
STUDY DESIGN

• Dermaroller was performed rolling four times, horizontally, diagonally and vertically

• Dermapen was set at 1.5mm and the face treated with circular motion, then horizontally and then vertically four times at speed seven.

• Blood was wiped away with sterile gauze and the skin washed with sterile saline.

• Cold packs were applied for five minutes.
PATIENT QUESTIONNAIRE

- Patients were asked to fill out a questionnaire following treatment comparing pain/discomfort with previous Dermaroller treatment using a five point scale:
  - 1 = Much less painful
  - 2 = Less painful
  - 3 = Same
  - 4 = More painful
  - 5 = Much more painful
Operator was asked to assess ease of use and versatility compared to the Dermaroller in those having Dermapen, using a five point scale:

- 1 = Very much easier
- 2 = Easier
- 3 = Same
- 4 = More difficult
- 5 = Much more difficult
PATIENT QUESTIONNAIRE

• At visit two, patients were asked how long the downtime was for their previous treatment in days.
• Asked to assess improvement in their scarring using a five point scale:
  • 1 = Good improvement
  • 2 = Slight improvement
  • 3 = No improvement
  • 4 = Slightly worse
  • 5 = Much worse
OPERATOR QUESTIONNAIRE

• Operator was asked to assess improvement in scarring using a five point scale:
  • 1 = Good improvement
  • 2 = Slight improvement
  • 3 = No improvement
  • 4 = Slightly worse
  • 5 = Much worse
Using the Visioscan software, the volume of the scar was calculated for each scar.

The percentage reduction in volume was assessed at visit two.
RESULTS

• 60 patients were recruited into the study
• 48 completed visits one and two (20 in group A and 28 in group B)
• Eight patients lost to follow up, four patients have yet to attend the final visit due to delays in starting the study
RESULTS

Patient Assessment of Discomfort – Visit 3

1 = Much less painful  5 = Much more painful
RESULTS

Downtime in Days at Visit 3

- Group A – Dermaroller
- Group B – Dermapen
RESULTS

Improvement Assessed By Patient at Visit 3

1 = Much Improved  3 = No Change  5 = Much Worse

Group A – Dermaroller
Group B – Dermapen
RESULTS

Improvement Assessed By Operator

1 = Much Improved  3 = No Change  5 = Much Worse

Group A – Dermaroller
Group B – Dermapen
% Reduction in Volume of Assessed Scar

• Group A – Dermaroller
  • 20 patients
  • %Reduction = 29.1 ± 4.82

• Group B – Dermapen
  • 28 patients
  • % Reduction = 42 ± 7.97
CONCLUSIONS

Dermapen has significant advantages over Dermaroller

• Easier to use and more versatile in treating areas such as the upper lip and nose
• Less painful and better tolerated by the patient
• Less downtime
• More effective in improving atrophic acne scars
RESULTS

Before

After
RESULTS

Before

After
For more information on the Dermapen, visit www.dermapen.com.au or email info@equipmed.com.