ASLMS 2019 DENVER

39th ASLMS Annual Conference on
ENERGY-BASED MEDICINE & SCIENCE
March 27-31, 2019

TOUBEL Gérard (RENNES)
ROSSI Bernard (ROUEN)

GROUPE LASER
De la SFD
Lasers et technologies apparentées

Belle équipe


BTL
BODY BY BTL
miraDry
BTL EMSELLA
INCONTINENCE
THETICS


LUTRONIC
Intelligent Care
CLARITY II
SPECTRA

Nouveau laser à colorant pulsé
Double longueur d'onde (avec Nd;Yag)
Spots jusqu'à 15 mm

Nouveau laser KTP Excel V+
Double longueur d'onde (avec Nd;Yag)
Spots jusqu'à 16 mm

BUILD MUSCLE
AND BURN FAT
NO SWEAT REQUIRED!

EMSCULPT®

Nouvelle technique pour augmenter sa masse musculaire et diminuer les dépôts graisseux sus jacents sans effort sauf financier…
A vérifier +++

PARIS MATCH — Haut de page

L'actualité nationale, internationale, people, royale en continu, le choc des photos

Emsculpt, la nouvelle machine à modeler les corps, fait un maxi-buzz en ce moment aux Etats-Unis. Elle arrive chez nous.

Découverte. Sculpter son corps sans effort ? C'est désormais possible grâce à une technologie médicale venue de République tchèque. Des ondes électromagnétiques focalisées de haute intensité (type IRM) pénètrent jusqu'à une profondeur de 7 centimètres sous la peau pour brûler les graisses et augmenter la masse musculaire, avec deux cibles de choix : l'abdomen et les fesses. Une première dans le champ du « body shaping » (le remodelage de la silhouette), qui est en plein boom sur le marché de l'esthétique médicale. « Jusqu'ici, seule la graisse était ciblée, pas le muscle », indique Jérôme Mus, directeur France de BTL Aesthetics, la société qui a créé la machine. Lancée aux Etats-Unis depuis quelques mois, elle fait un malheur.

ABOUT **SOLUTIONS** NEWS MEDIA EVENTS CONTACT FIND A PROVIDER BTLSUPPORT US

THE RIGHT TO BARE ARMS

EMSCULPT®

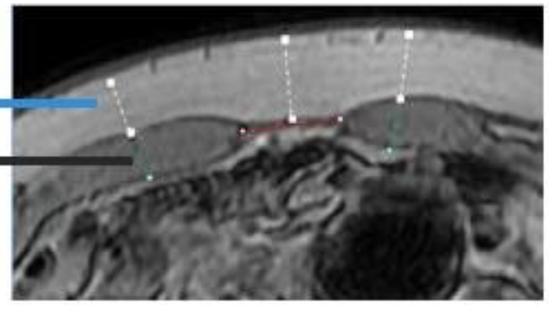
BUILD MUSCLE AND BURN FAT

+16% average increase in muscle mass*

average fat reduction* -19%

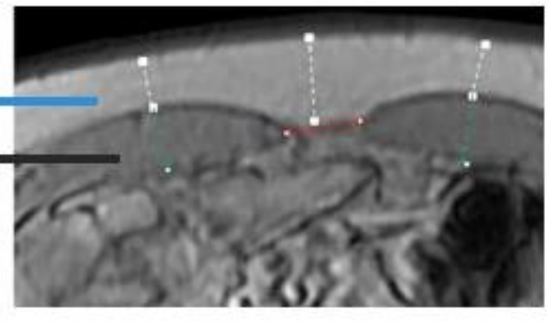
Graisse sous cutanée

Muscles abdominaux



Diminution de la graisse après le traitement

Développement des muscles abdominaux après le traitement

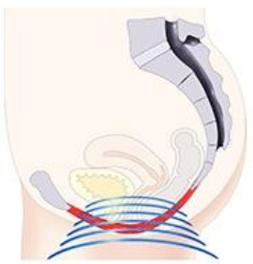


SAY NO
TO INCONTINENCE
& INTIMATE DISCOMFORT

BTL EMSELLA®

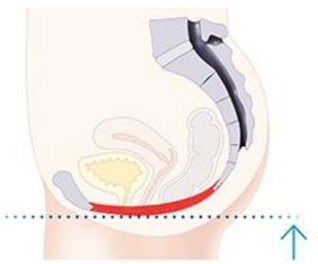
BEFORE

Pelvic floor muscles insufficiently support pelvic organs and affect bladder control.



TREATMENT

BTL EMSELLA effectively stimulates pelvic floor muscles with thousands of supramaximal contractions per session.



AFTER

Stimulation leads to regained control over pelvic floor muscles and bladder.

MRI EVALUATION OF CHANGES IN GLUTEAL MUSCLES FOLLOWING TREATMENTS WITH THE HIGH-INTENSITY FOCUSED ELECTROMAGNETIC (HIFEM) TECHNOLOGY

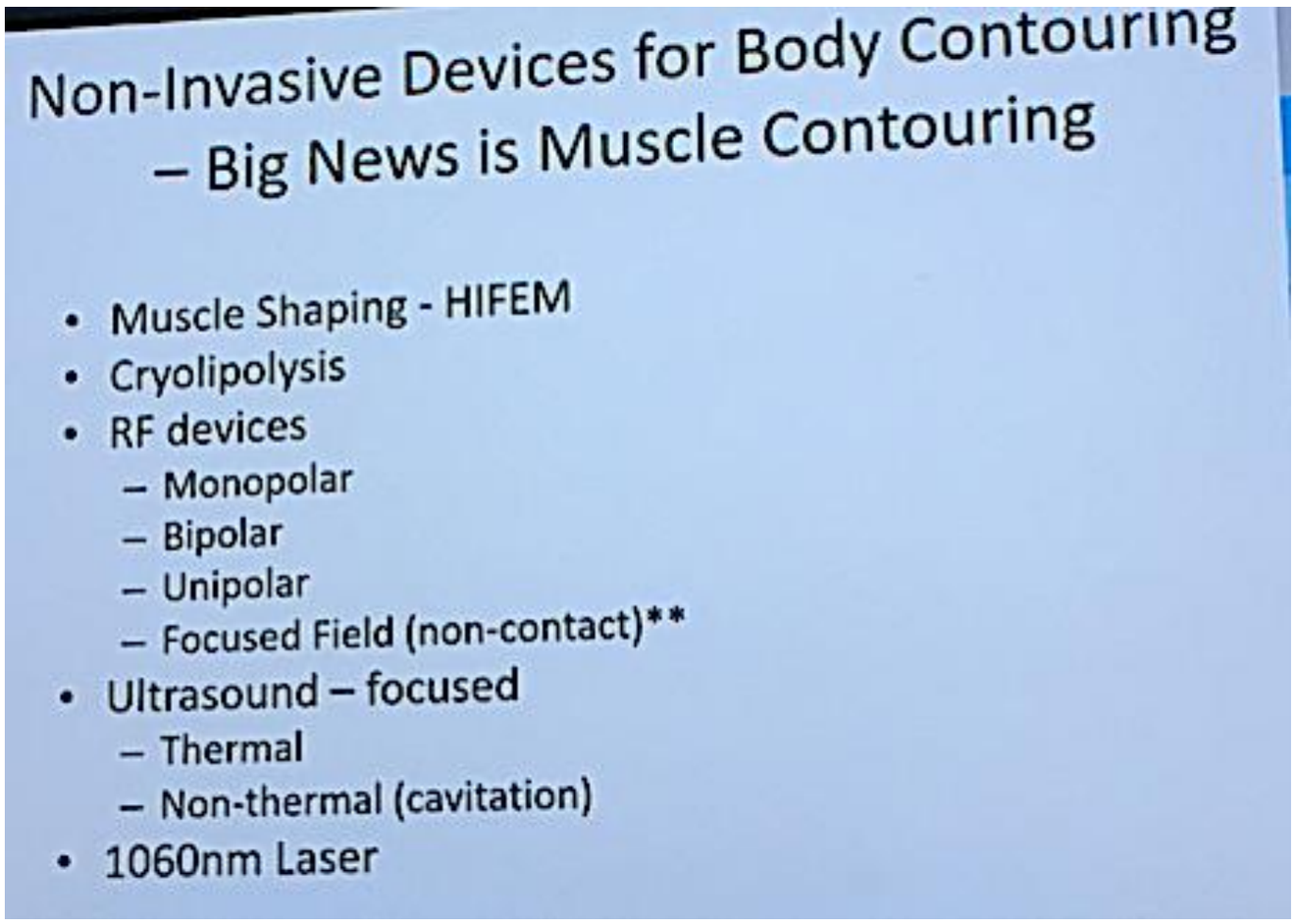
Melanie Palm, Paula Lozanova | Art of Skin, Solana Beach, CA; Paula Fines Center, Sofia, Bulgaria

Conclusion: MRI analysis revealed simultaneous enhancement of all three gluteal muscles 1-month post treatments while showing no adverse events. This represents the first objective evaluation of tissue structural changes which may explain the aesthetic improvement previously reported by other authors.

LONG-TERM FOLLOW-UP ON PATIENTS WITH HIFEM-INDUCED ABDOMINAL TISSUE CHANGES: MRI AND CT ASSISTED QUANTIFICATION OF MUSCLE GROWTH AND FAT REDUCTION

Brian M. Kinney, David E. Kent | University of Southern California School of Medicine, Beverly Hills, CA; Skin Care Physicians of Georgia, Macon, GA

Conclusion: Patients preserved and maintained the majority of the original muscle growth, fat reduction, and reduction in diastasis on average 333 days post-treatment. Data suggests that HIFEM-induced fat reduction is maintained longer-term than initially expected. Muscle growth demonstrated additional improvement. Continuing treatments might be beneficial and necessary over the course of 4-6 to 12 months afterward as a preventative measure to minimize muscle deconditioning. Further studies evaluating different follow-up therapy will help optimize treatment timing for the long-term.



Cette technique ferait donc maintenant partie des options concernant le remodelage corporel

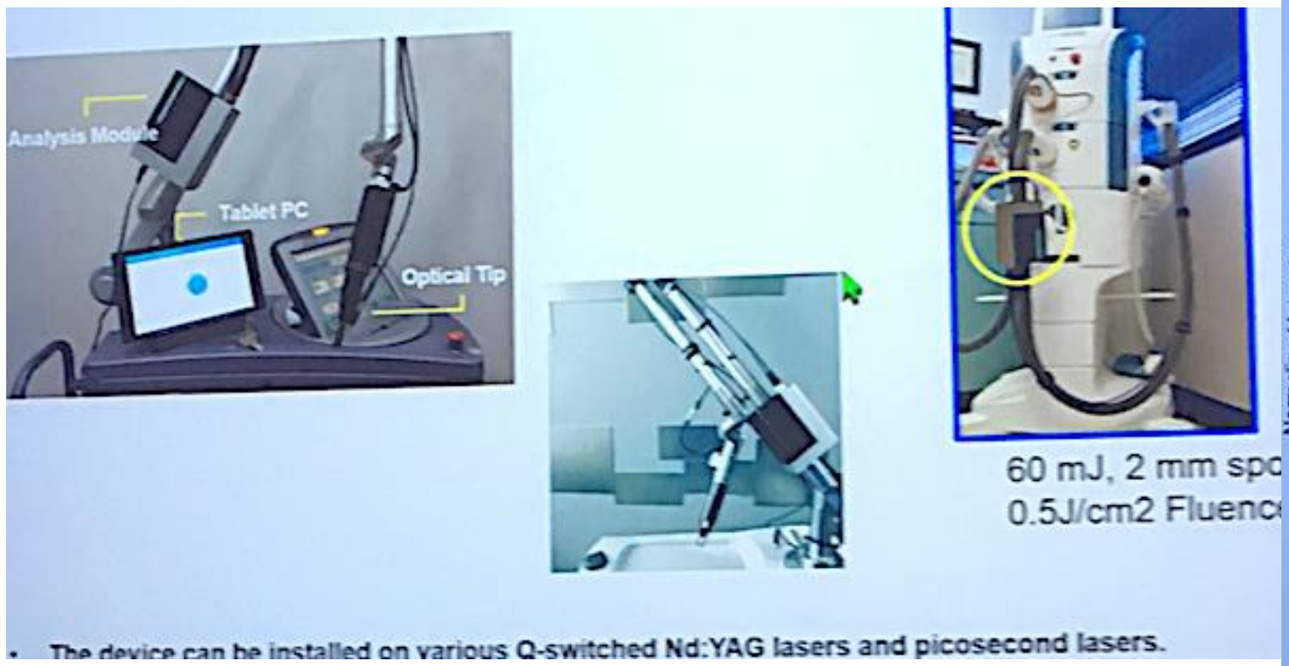
CLINICAL ASSESSMENT OF A REAL TIME, NON-INVASIVE, IN VIVO SKIN CANCER DIAGNOSTIC DEVICE BASED ON LASER SPECTROSCOPY AND DEEP LEARNING ALGORITHM USING AESTHETIC LASERS

Girish S. Munavalli, Boncheol L. Goo, Chang-Hun Huh, Wanki Min, Sung Hyun Pyun

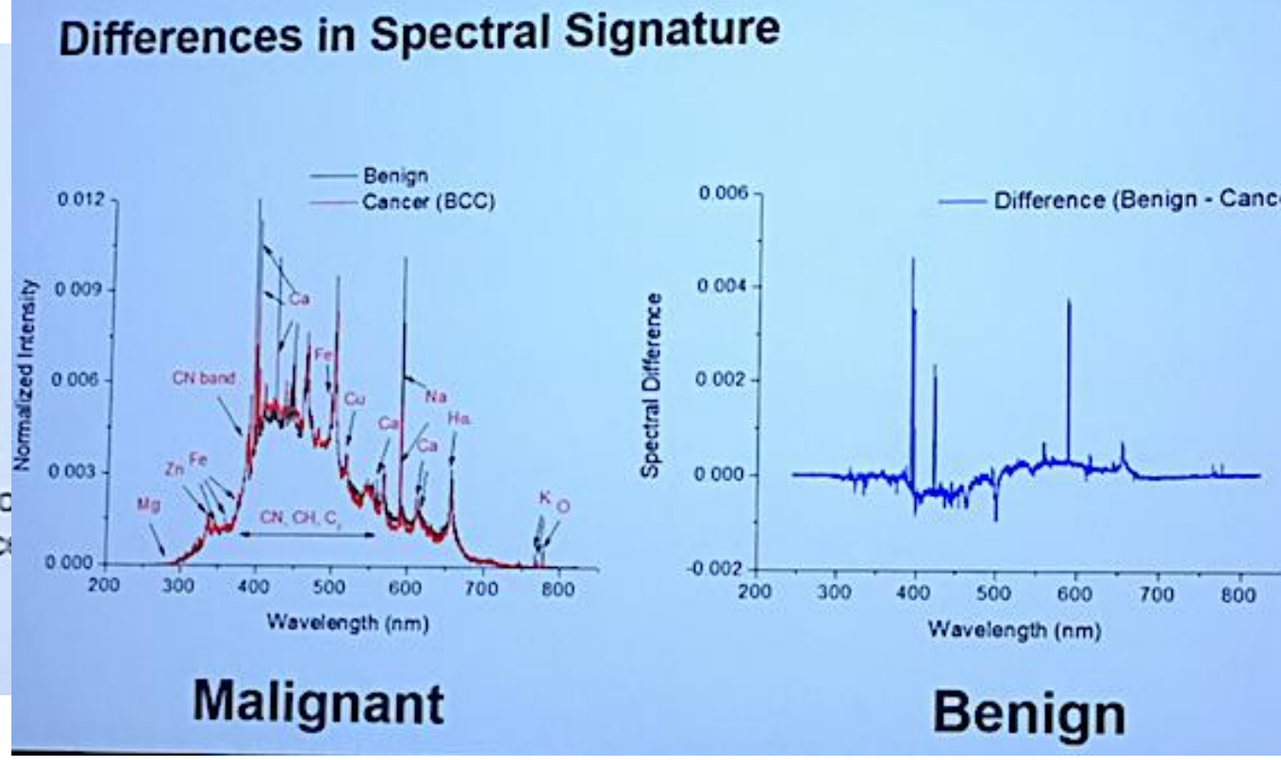
- There have been several optical-based techniques for in vivo skin cancer detection and screening such as multi-spectral imaging and Raman spectroscopy. However, they adopt high cost lasers and imaging sources and have relatively insufficient accuracies for actual clinical use.

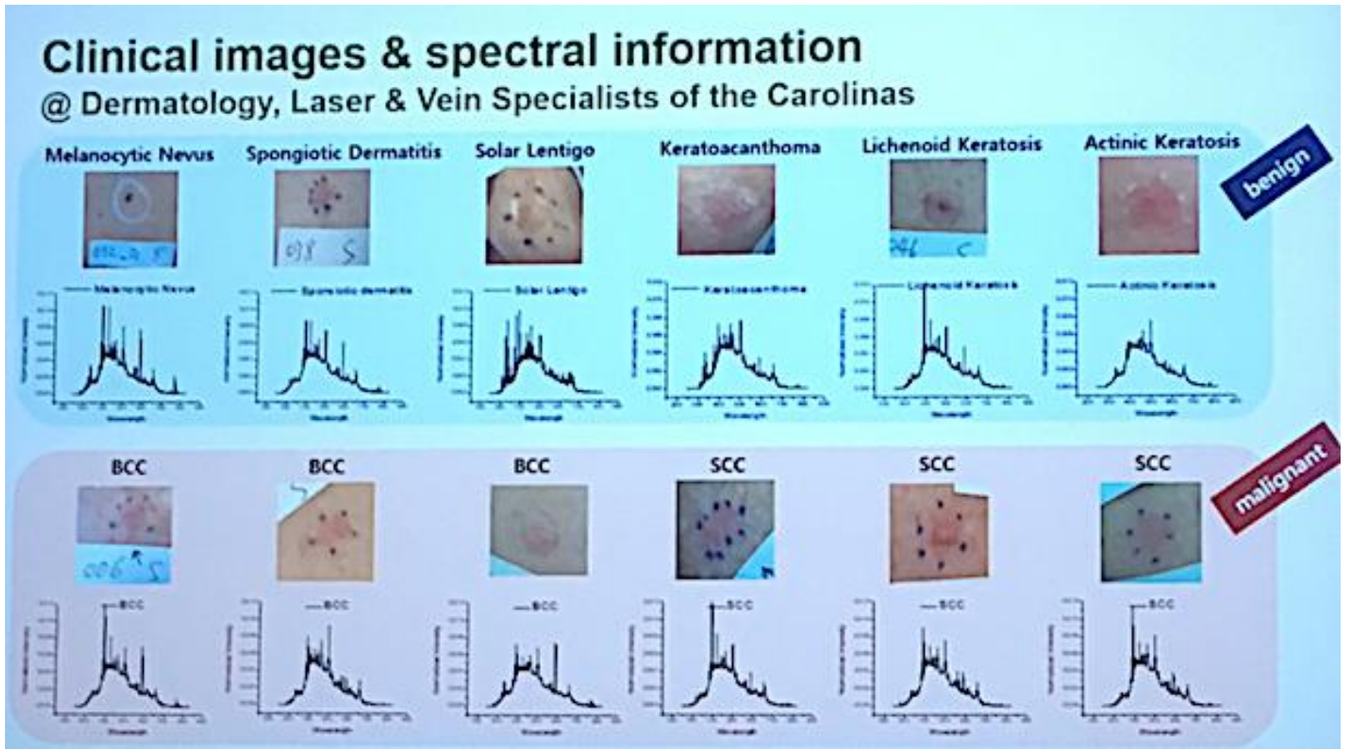
- Results: Algorithmic analysis is the process of comparing the acquired spectra to a previously collected spectral database (derived from 5302 emission spectra of cancerous and benign lesions) and determining similarities. Device results were compared with the histopathology results. Analysis achieved a sensitivity of 97.0% and specificity of 87.3% in discriminating skin cancers from benign lesions in a blind setting.

Nouvelle technologie basée sur plusieurs longueurs d'onde (spectre) réfléchies par une lésion cutanée et comparant une base de données
N'importe quel laser Q-switched peut servir de source lumineuse



- The device can be installed on various Q-switched Nd:YAG lasers and picosecond lasers.





Confusion matrix		Predicted by device	
		Malignant	Benign
Actual	Malignant	37	2
	Benign	8	53

Sensitivity = 94.9%
Specificity = 86.9%

RETROSPECTIVE ANALYSIS OF PULSED DYE LASER PLUS OXYMETAZOLINE 1% CREAM FOR TREATMENT OF FACIAL TELANGIECTASIAS

Amanda Suggs, Angela Macri, Girish S. Munavalli, Paul M. Friedman | Dermatology & Laser Surgery Center, Houston, TX; Dermatology, Laser, & Vein Specialists of the Carolinas, Charlotte, NC

Conclusion: Combination treatment with PDL and daily oxymetazoline 1% cream can effectively reduce telangiectasias. Limitations include the retrospective design of the study and lack of a control group.

EVALUATION OF A NOVEL TOPICAL AGENT IN CONJUNCTION WITH LONG PULSED 532nm LASER FOR THE TREATMENT OF FACIAL ERYTHEMA ASSOCIATED WITH ERYTHROTELANGIECTATIC ROSACEA

Brian S. Biesman | The Practice of Brian S. Biesman, M.D., Nashville, TN

Results: In both treatment groups, reduction in facial erythema as assessed by CEA and PSA showed statistically significant improvement at all measured intervals. Average CEA scores improved from 3.00 to 1.87 for the Laser Only group and from 3.07 to 1.64 for the Laser + Topical group. Laser + Topical outperformed Laser Only treatment at all time intervals. The average improvement in the Laser + Topical group was equal or superior to the Laser Only Group despite fewer laser treatments. Further, in the combination therapy group, improvement was noted from week 8 to 12 despite no additional laser treatment. There were no complications or adverse reactions in either group.

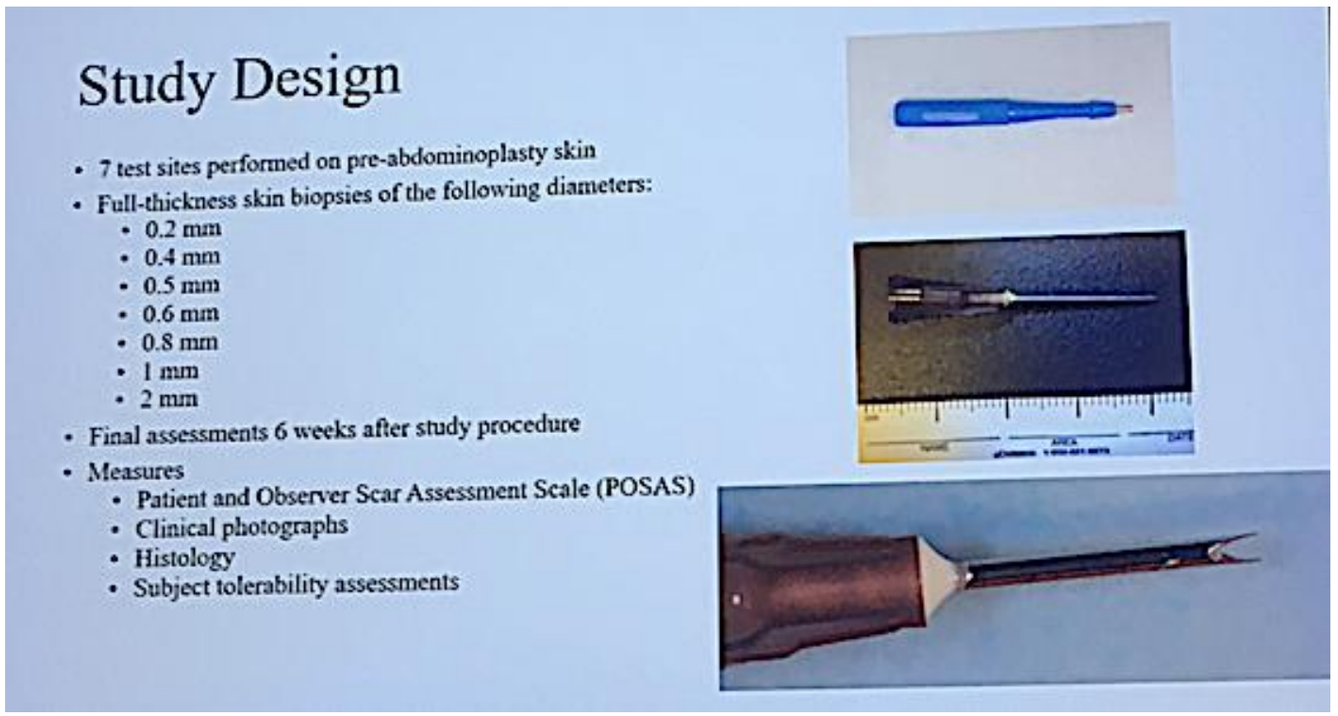
PRECLINICAL IN VIVO EVALUATION OF VASCULAR EFFECTS OF PULSED DYE LASER IN COMBINATION WITH OXYMETAZOLINE

Alex Pai, Alexis Kelly, Ben Lertsakdadet, Bernard Choi, Kristen M. Kelly

Agoniste du récepteur adrénergique alpha-1
Vasoconstricteur utilisé en spray nasal (Déturgylone*)

Comment faire des trous dans la peau
Sans entrainer de cicatrice visible

Extrapolation avec un système de multiples carottes pour améliorer le photovieillissement, les cicatrices d'acné et les vergetures sans avoir besoin de technique qui chauffe le derme



WHAT IS THE LARGEST SIZE FULL-THICKNESS SKIN INJURY THAT CAN HEAL WITHOUT A SCAR?

A H. Champlain, Y Wang, W A. Farinelli, A J. Wulkan, E Morehouse, F H. Sakamoto,R. Rox Anderson

Conclusion: This study demonstrates that a clinically identifiable scar occurs after full-thickness skin wounds greater than 400-500 μm in diameter.

Overall the study procedure **was found to be safe and highly tolerable by the subjects.**

A PROSPECTIVE PRE-PIVOTAL STUDY TO EVALUATE THE SAFETY AND EFFICACY OF A DERMAL MICRO-CORING DEVICE FOR THE TREATMENT OF MODERATE TO SEVERE FACIAL WRINKLES

Anne Zhuang, Suzanne L. Kilmer

A PROSPECTIVE, CONTROLLED, MULTI-CENTER, PILOT STUDY TO EVALUATE THE EFFICACY OF MICRO-EXCISIONAL SKIN REMODELING WITH MICRO-CORING DEVICE IN THE TREATMENT OF ACNE SCARS AND STRIAE

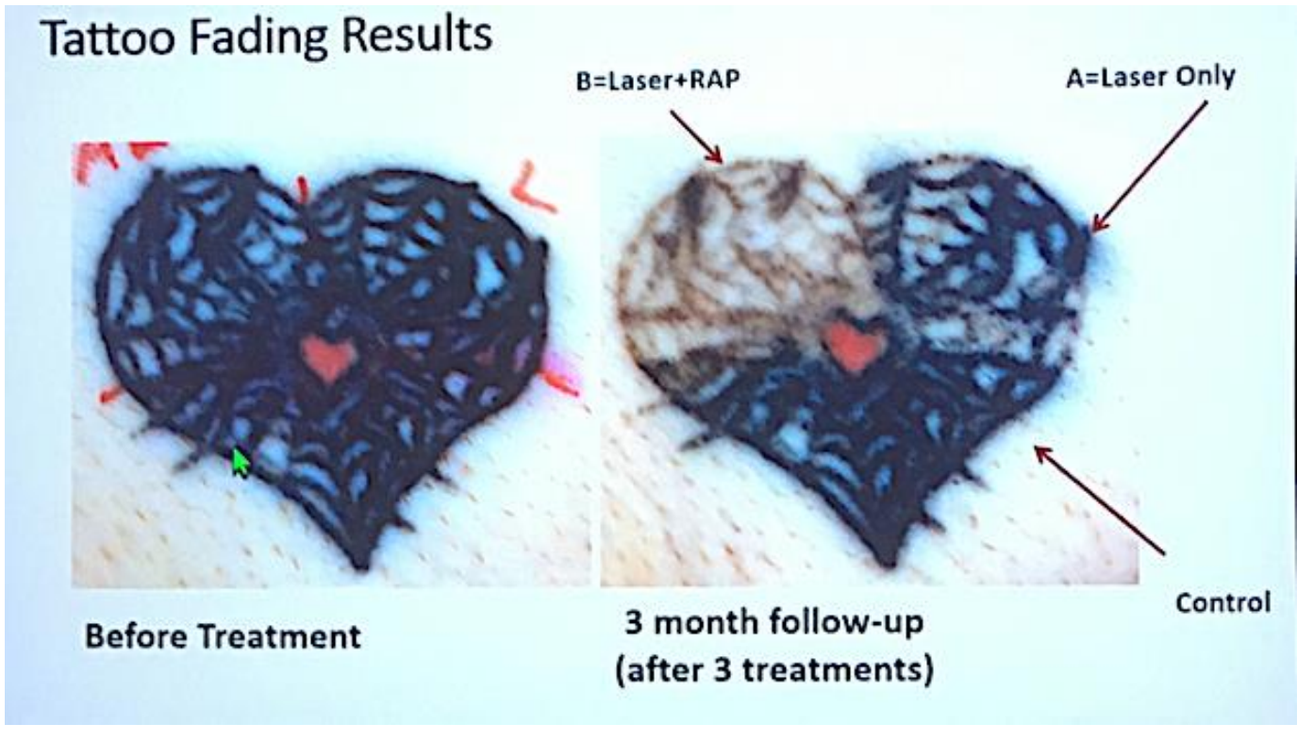
Jill S. Waibel, Roy G. Geronemus

Dermal micro-coring is a new excisional mechanical technology that has been studied for skin laxity and rhytids. These micro excisions physically remove small cores of skin with immediate physical hole closures. After micro-coring treatment there are quantitative and directional reductions in area of skin. This study is the first to investigate this novel technology for the treatment of scars acne and striae on and off face.

a micro-coring device for micro-excisional scar rehabilitation by using 22 gauge needle at densities 5% or 10% in subjects. 20 subjects were be treated in 2 clinical sites. Before and after photographs with Manchester scar scale, POSAS, optical coherence tomography (OCT) and histology of the treated areas and adjacent untreated skin were evaluated. **Results:** 20 subjects with atrophic facial acne scars or striae (alba, rubra or distensae) on abdomen received three treatments with micro-coring technology. No unanticipated adverse events were recorded. OCT revealed immediate skin closure within minutes of treatment. Histology of 4 subjects showed decreased fibrosis. Both investigators and subject scores improved.

EFFICACY OF MULTIPLE-TREATMENT SESSIONS IN INDUCING ENHANCED TATTOO REMOVAL USING A COMBINATION OF MULTIPLE-PASS Q-SWITCHED Nd:YAG LASER TREATMENT AND THE RAPID ACOUSTIC PULSE (RAP) DEVICE

Mona Sadeghpour, Christopher C. Capelli, Leslie Honda, David W. Robertson, Michael S. Kaminer | SkinCare Physicians, Chestnut Hill, MA; Soliton Inc., Houston, TX; SkinCare Physicians, Chestnut Hill, MA



Results: At the 3-month follow up visit, 100% of tattoos (n=12) treated with Laser+RAP had a "complete" response (76-100% fading), compared to only 17% of tattoos treated with Laser-Only ($p<0.001$). At the 6-month followup, average fading (n=5) for Laser+RAP was 98% versus 75% for Laser-Only treatment ($p<0.05$).

EFFICACY OF MULTIPLE-TREATMENT SESSIONS IN INDUCING ENHANCED TATTOO REMOVAL USING A COMBINATION OF MULTIPLE-PASS Q-SWITCHED Nd: YAG LASER TREATMENT AND THE RAPID ACOUSTIC PULSE (RAP) DEVICE

Mona Sadeghpour, MD [1, 2]; Christopher C. Capelli, MD[3]; Leslie Honda[3]; David W. Robertson, MS[3]; Michael S. Kaminer, MD[1]

[1]SkinCare Physicians, Chestnut Hill, MA; [2]University of Colorado Department of Dermatology, Denver, CO; [3]Soliton, Inc., Houston, TX

Figure 3: Tattoo before (left) and 3 months after 2 treatments (right) with "Laser Only" (A) versus Laser+RAP (B) using QS Nd:YAG laser. (Note white and red ink not effected by 1064nm laser)

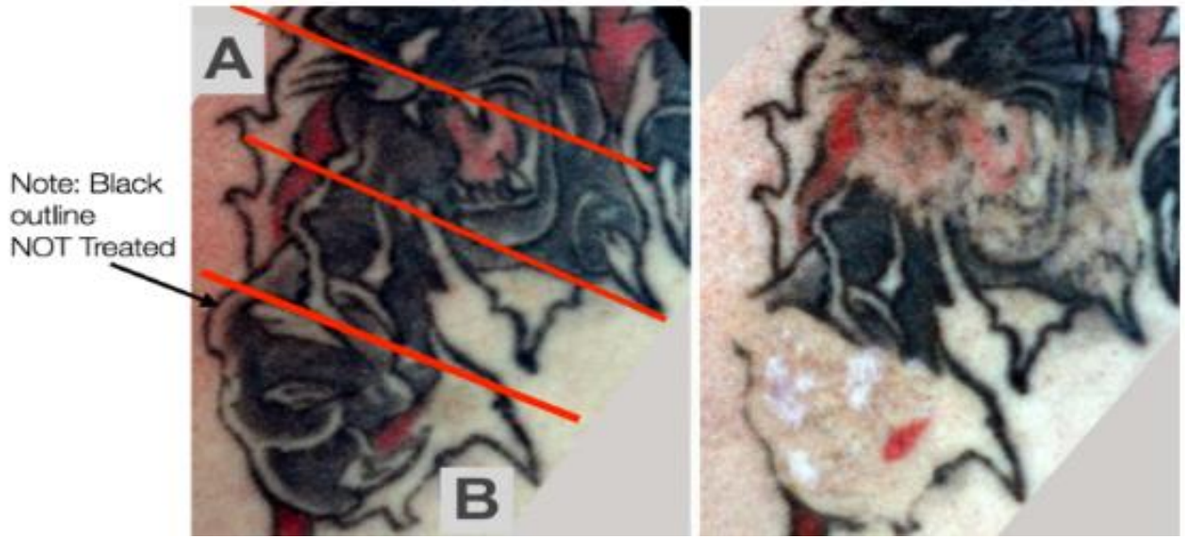


Figure 2: Laser treatment of baseline tattoo (A) generates vacuoles whitening in the tattoo (B), which is then resolved by 1 minute of RAP application (C).

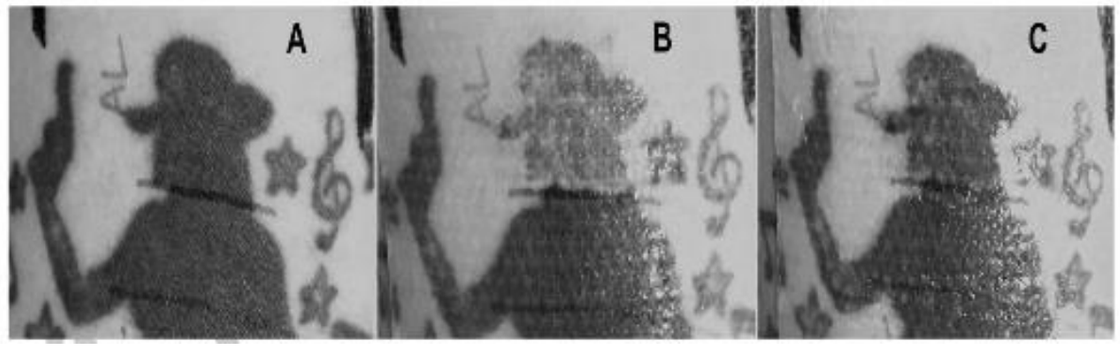
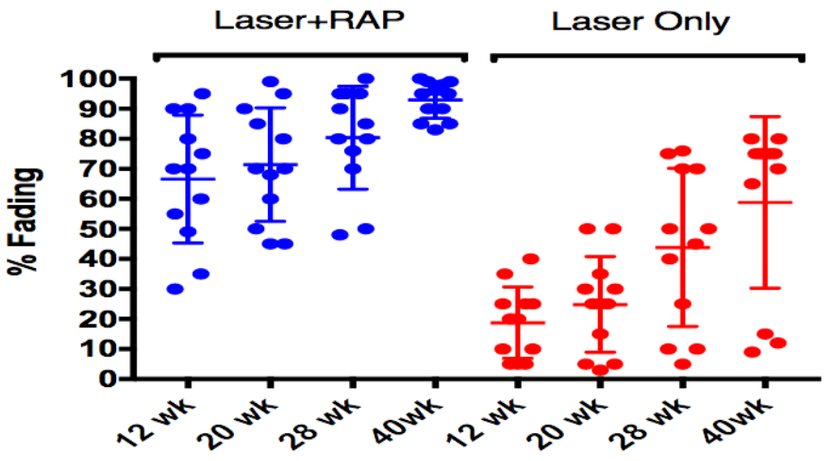
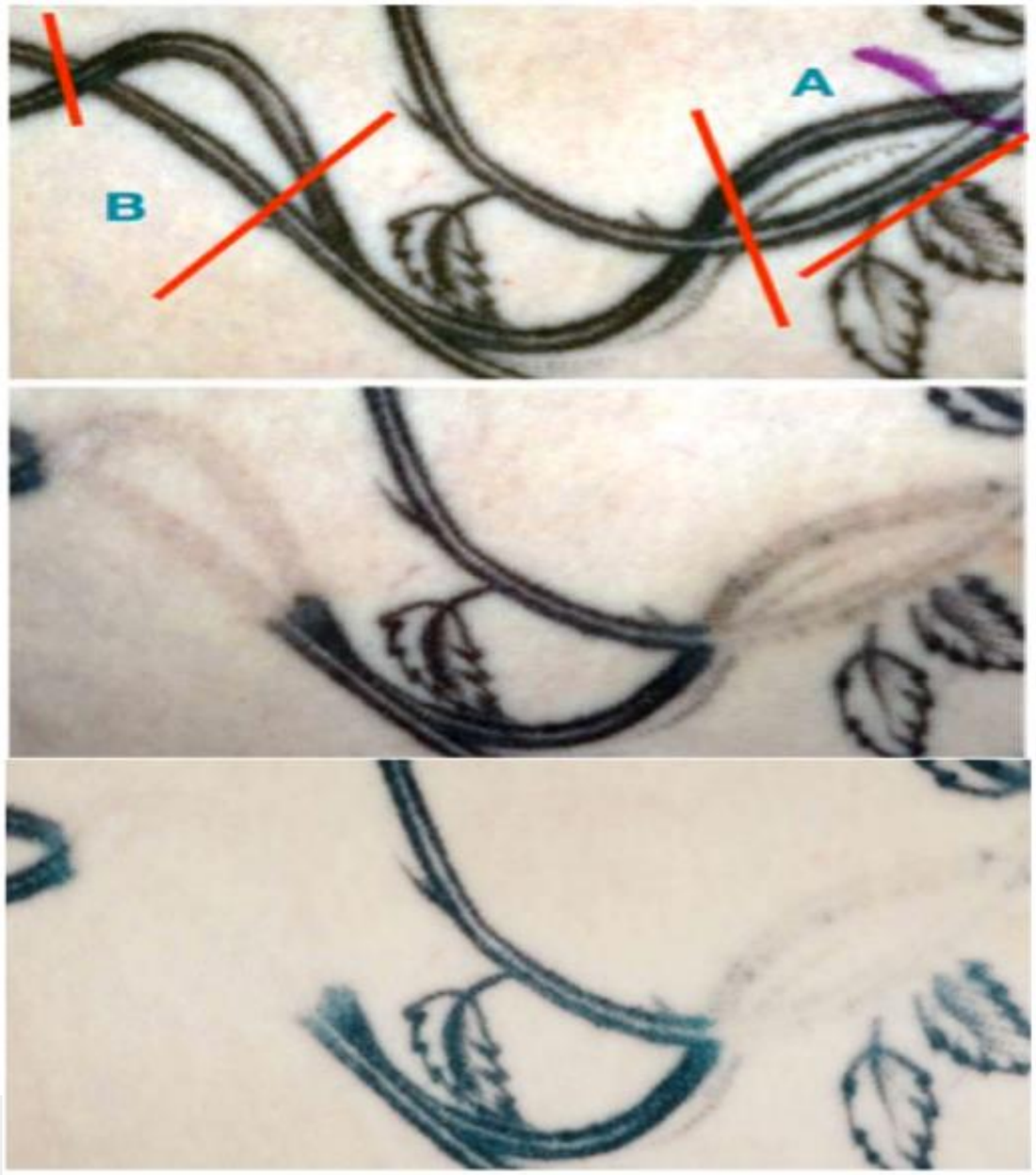
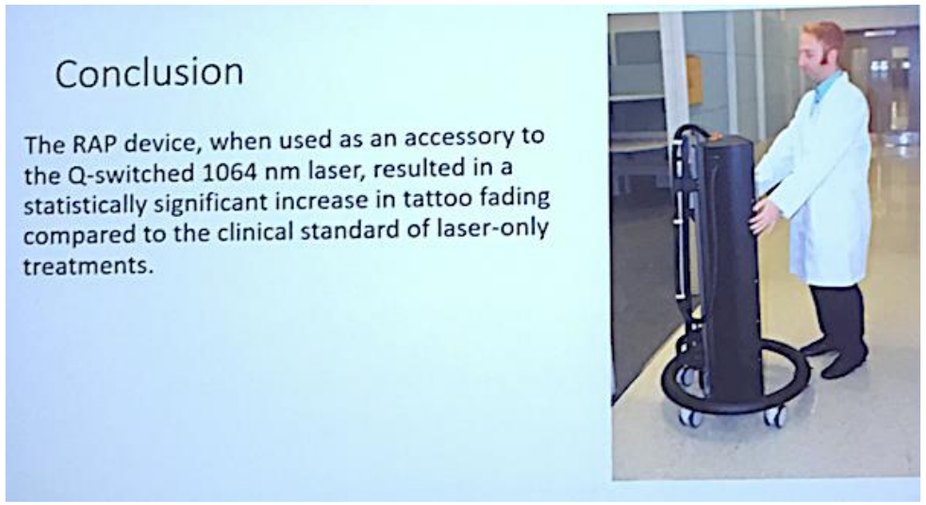


Figure 5: Tattoo before treatment (top) compared to 3 months (middle) and 6 months (bottom) after the third treatment, using "Laser Only" (A) versus "Laser+RAP" (B) with the QS Nd:YAG laser.







Encore un nouvel investissement à faire …

oliton's RAP (Rapid Acoustic Pulse)

TREATMENT RESISTANT PORT WINE STAINS SUCCESSFULLY TREATED WITH SHORT-PULSE Nd:YAG LASER

Mark B. Taylor, DiAnne S. Davis | Gateway Aesthetic Institute & Laser Center, Salt Lake City, UT

Study Design/Materials and Method: 47 patients treatment resistant or pulse-dye-laser treatment failures were treated using an Nd:YAG laser with a short 0.6 to 2.0ms pulse, a 2 to 4mm spot size and 130 to 300+ J/cm2 in a factional mode, with skin cooling. All patients received a series of treatments spaced at least 4 weeks apart.

Results: All patients, including patients who had failed numerous pulsed dye laser treatments, achieved a 50% or greater response. Occasional minimal scarring was noted in some patients.

Conclusion: With proper pulsing technology, fractional treatments, high energy, short pulse, small spot size Nd:YAG lasers can be used successfully and safety in the treatment of pulsed dye laser treatment failures and also inherently difficult lesions.

Toujours le problème des angiomes plans résistants
On peut utiliser le laser Nd.yag long pulse mais avec
des paramètres très doux (petits spots, durée de pulse très courte)

Important Parameters

- Small spot size 2-4mm
- Short Pulse 1-2ms
- Fluence range 130 to 300/cm^2 (Average 170j/cm^2)
- Never Stack pulses
- Stop if you see whitening or greying of the skin!
- Factional, not solid, treatment and multiple treatments
- Cooling with air cooling or Ice on a stick
- Most Nd:YAG lasers do not have the capability to generate a 1-2ms pulse with sufficient fluence to provide selective photothermolysis of vessels in a port wine stain.

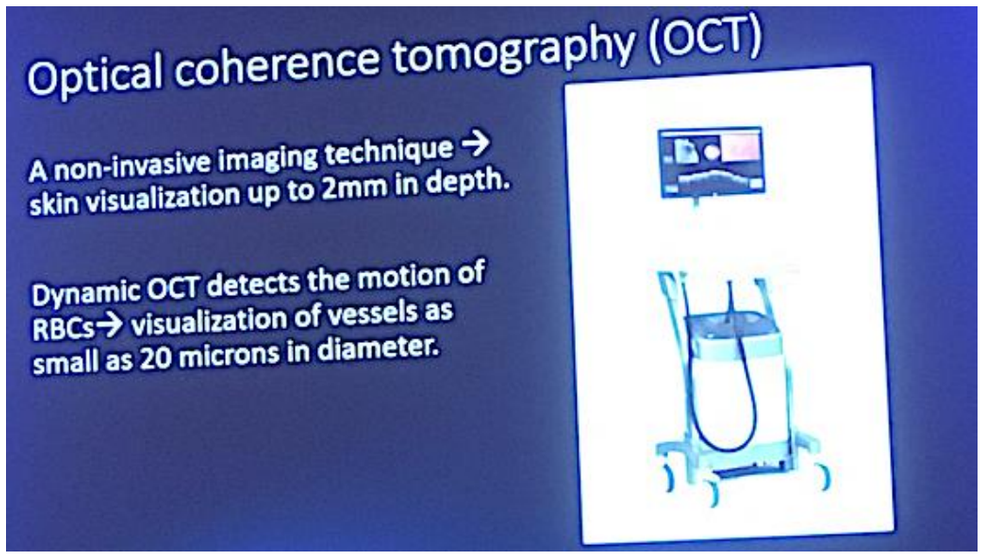
TREATING CHALLENGING CUTANEOUS CAPILLARY MALFORMATIONS WITH A 595nm LASER AIDED BY DYNAMIC OPTICAL COHERENCE TOMOGRAPHY

Mitalee P. Christman, Hao Feng, Jon Holmes, Roy G. Geronemus | Laser & Skin Surgery Center of New York, New York, NY; Michelson Diagnostics Ltd, Maidstone, Kent, United Kingdom

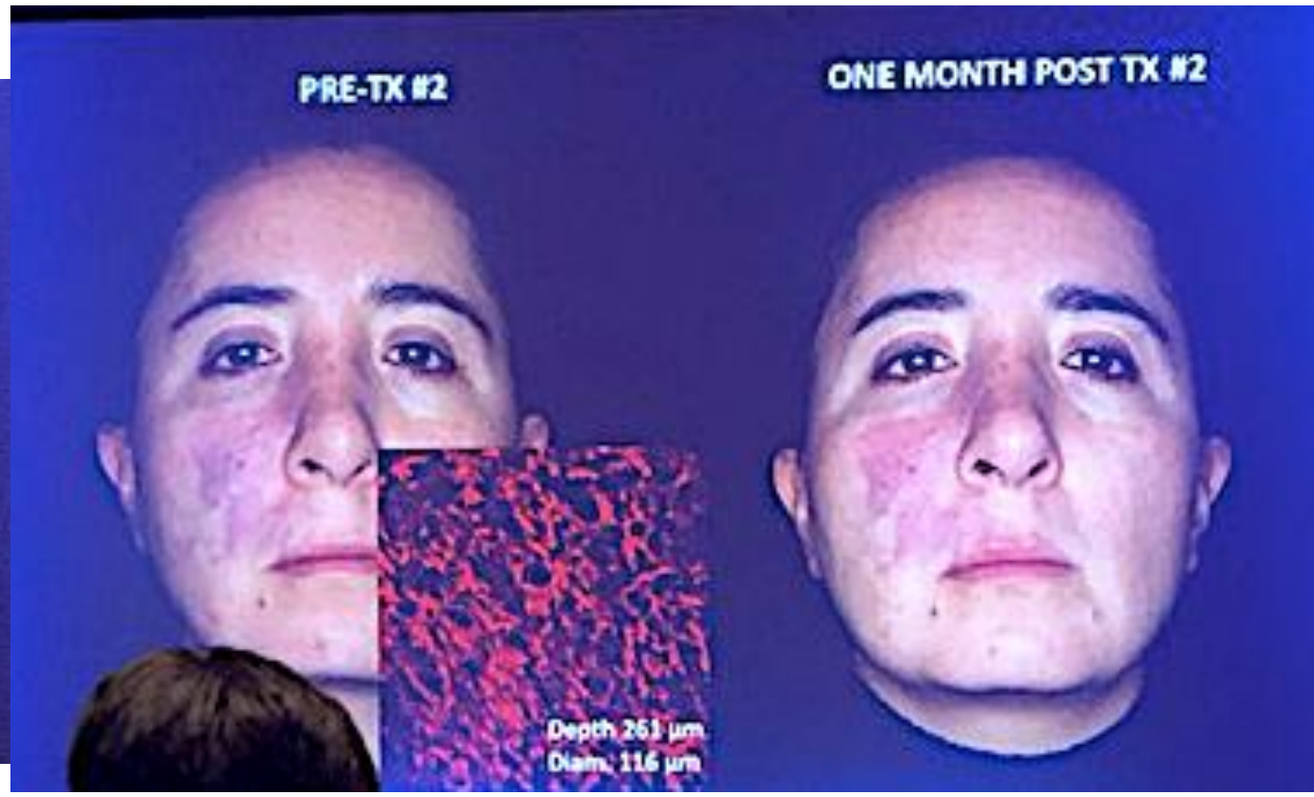
Results: In total, 52 lesional areas in two adult patients with large CMs were imaged at the bedside using dynamic OCT. For the patient who showed clinical blanching of CM from treatment, OCT imaging revealed most vessels were of diameter 70 to 100 microns at depth 0.15mm+, and reduced blood flow post-treatment. However, for the patient who failed to respond, OCT imaging revealed that by contrast, most vessels were of diameter 200 microns or more at a greater depth of 0.3mm+, and had not been coagulated, suggesting that the lack of response was due to inadequate combination of pulse duration and fluence. More assertive settings were therefore indicated.

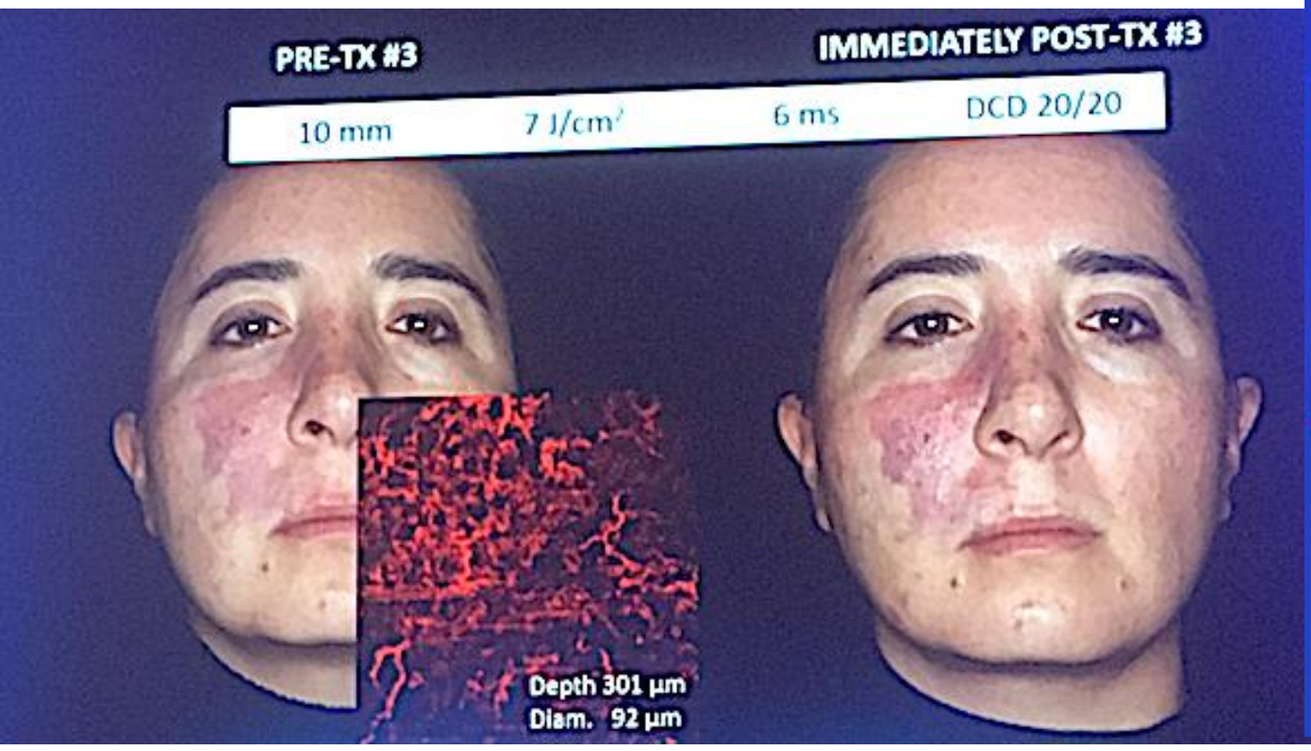
Conclusion: For challenging CM cases, dynamic OCT may be used as a tool to non-invasively determine lesional vessel diameters and depths at the bedside. This allows more precise matching of pulse duration and fluence to vessel size, enabling real time application of the theory of selective photothermolysis.

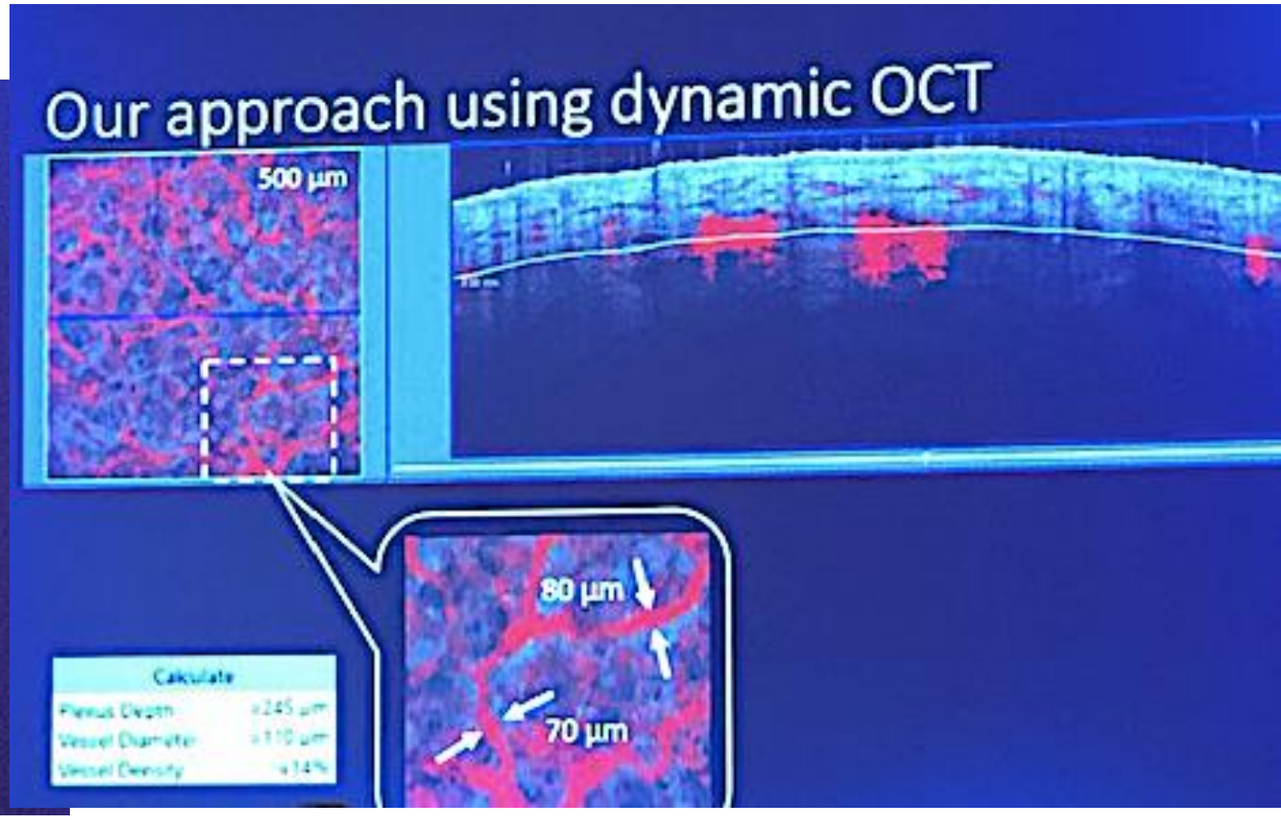
Comment améliorer les paramètres du laser à colorant pulsé : en se servant de l'OCT qui va calculer la taille des vaisseaux sous jacents ce qui permet d'ajuster la durée du pulse
Vrai pour l'adulte, sans doute pas pour un jeune enfant
Problème du prix de l'OCT




BASELINE
IMMEDIATELY POST TX #1
7 mm
9 J/cm²
10 ms
DCD 30/20
Depth 291 µm


PRE-TX #2
ONE MONTH POST TX #2
Depth 261 µm
Diam. 116 µm


PRE-TX #3
IMMEDIATELY POST-TX #3
10 mm
7 J/cm²
6 ms
DCD 20/20
Depth 301 µm
Diam. 92 µm


Our approach using dynamic OCT
500 µm
80 µm
70 µm
Calculate

Change in vessel diameter measured by device

Estimated Vessel Diameter / µm	Scan Area 1	Scan Area 2	Scan Area 3	Scan Area 4	Average of 4 scan areas
Baseline	135	145	170	137	147
Pre Tx2	130	132	114	175	138
Pre Tx3	135	123	121	161	135
Pre Tx4	123	105	105	105	110

Tableau de valeurs à respecter ??

WORK IN PROGRESS - SETTINGS TO BE VALIDATED!

Increasing vessel diameter

	Diam < 50 µm	50 – 100 µm	101-160 µm	161-250 µm	> 250 µm
PULSE DURATION:	1 ms	6 ms	10 ms	20 ms	40 ms
Super-shallow < 0.2 mm COOLING: LOW	4 J/cm²	6 J/cm²	8 J/cm²	9 J/cm²	10 J/cm²
Shallow 0.2 mm COOLING: LOW	4 J/cm²	6 J/cm²	8 J/cm²	9J/cm²	10 J/cm²
Mid 0.3 mm COOLING: MID	6 J/cm²	7 J/cm²	8 J/cm²	10 J/cm²	11 J/cm²
Deep 0.4 mm COOLING: HIGH	7 J/cm²	8 J/cm²	10 J/cm²	11 J/cm²	11 J/cm²
Very Deep >0.4 mm COOLING: HIGH	8 J/cm²	10 J/cm²	12 J/cm²	12 J/cm²	12 J/cm²

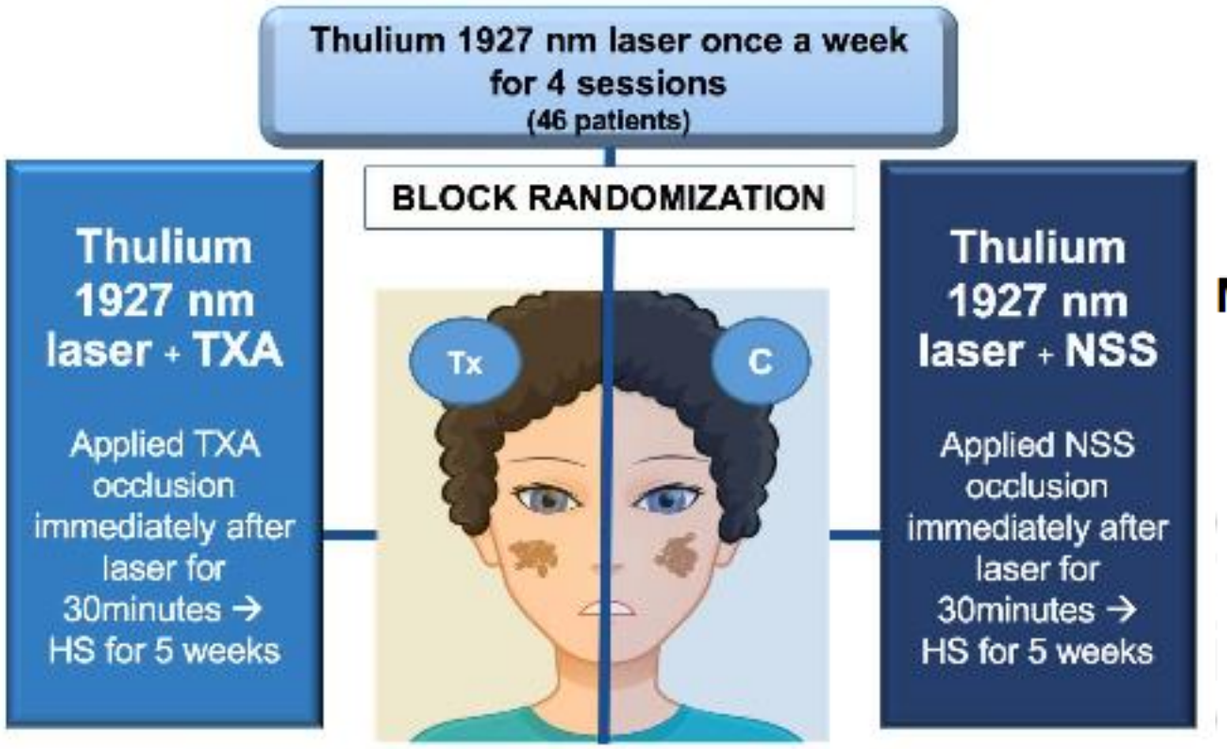
THE EFFICACY IN TREATMENT OF FACIAL MELASMA WITH THULIUM 1927nm FRACTIONAL LASER-ASSISTED TOPICAL TRANEXAMIC ACID DELIVERY: A SPLIT-FACE, DOUBLE-BLIND, RANDOMIZED CONTROLLED PILOT STUDY

Francesca Mari S. Sy-Alvarado, Rungsima Wanitphakdeedecha, Woraphong Manuskiatti, Sasima Eimpunth, Thanya Techapichetvanich, Poramin Patthamalai | Siriraj Hospital, Mahidol University, Bangkok, Thailand

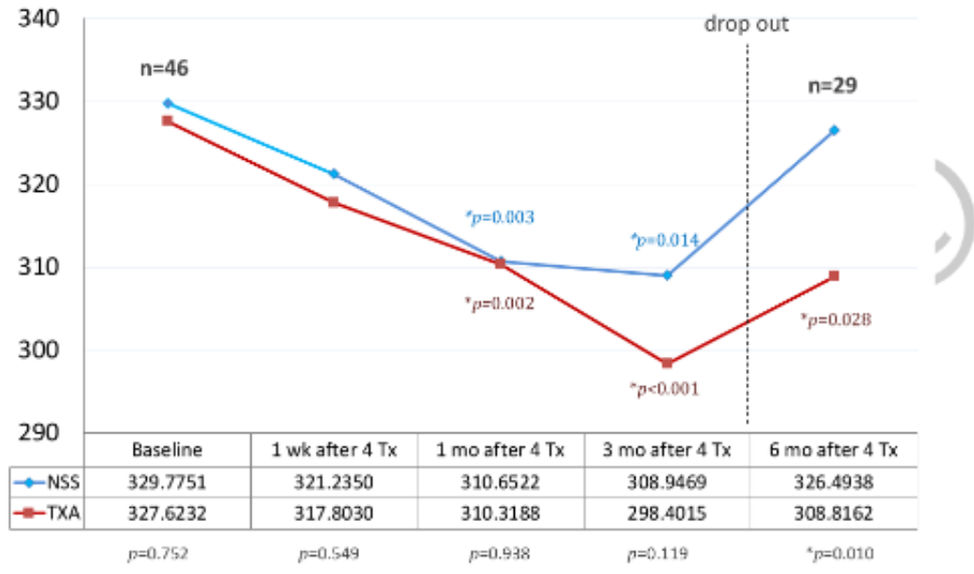
Results: Majority of participants (93.9%, n=31) were female and two (6.1%) were male, with a mean age of 47.3 + 10.1. Most participants (90.9%) were Fitzpatrick skin type IV. While significant decrease in mMASI scores from baseline were noted in both groups only after third treatment, statistically significant improvement was already noted in the group with laser-assisted TXA delivery after second treatment (p=0.028). There was also a significant difference between mMASI scores between the two groups 3 months after the fourth treatment (p=0.023) and in decrease in average melanin from baseline at 3 months after the fourth treatment (p=0.024). Results with more number of subjects and longer-term of follow-up at 6 months will also be presented.

Conclusion: This study shows that thulium 1927nm fractional laser-assisted topical TXA delivery decreases the duration of melasma treatment compared to laser alone.

Acide tranexamique local plutôt que par voie orale ?
associé au laser Thulium qui reste très superficiel
ça récidive assez rapidement…



Melanin Index



	Baseline	1 wk after 4 Tx	1 mo after 4 Tx	3 mo after 4 Tx	6 mo after 4 Tx
NSS	329.7751	321.2350	310.6522	308.9469	326.4938
TXA	327.6232	317.8030	310.3188	298.4015	308.8162
	p=0.752	p=0.549	p=0.938	p=0.119	*p=0.010

A HISTOLOGICAL EVALUATION OF SEBACEOUS GLAND DAMAGE WITH A 1726nm LASER

Emil A. Tanghetti, R. Rox Anderson, Fernanda H. Sakamoto | Center for Dermatology & Laser Surgery, Sacramento, CA; Massachusetts General Hospital, Boston, MA

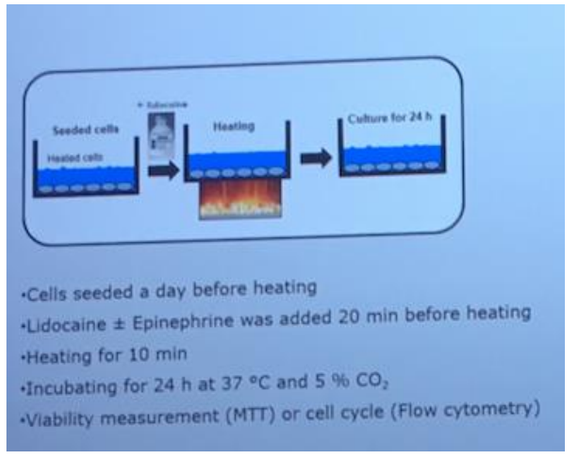
Results: Clinically, small papules were noted in the treatment areas immediately, 24 hours and 72 hours after treatment. Histologically at 24 and 72 hours, destruction of sebaceous glands was noted in the dermis characterized by loss of the definition of the sebocytes, and eosinophilic changes of the basal cell layer of these glands. The collagen surrounding the gland appeared to be preserved with occasional small clots observed in the adjacent blood vessels. The epidermis was preserved and undamaged in all specimens.

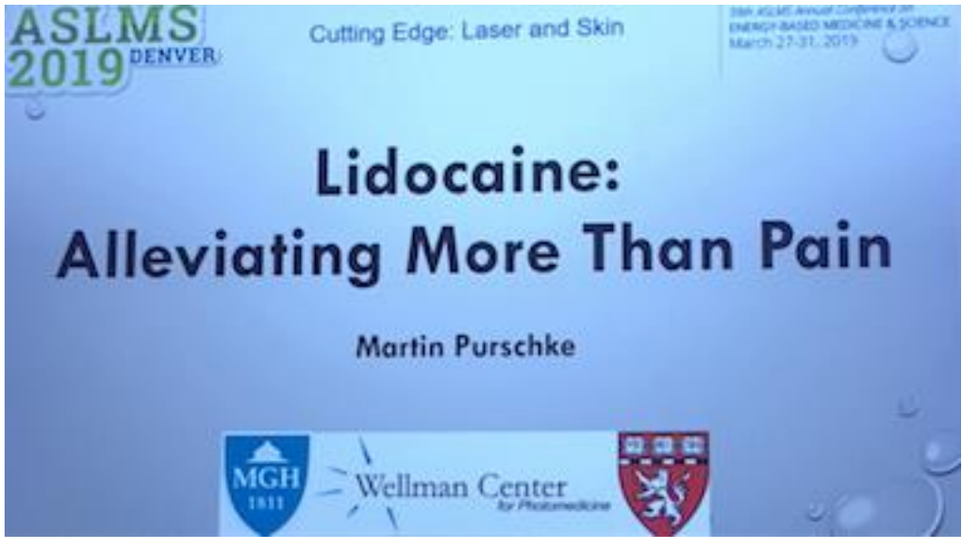
Conclusion: We have demonstrated a treatment of acne that takes advantage of native chromophores in the sebaceous glands. Using 1726nm laser radiation and highly controlled air cooling histological evaluation has demonstrated selective damage to the sebaceous glands. This required a multiple pulse strategy to slowly but preferentially heat these glands over the surrounding dermis. The real time thermal imaging with use of air-cooling was a guide to successful treatments and could also be used to actively monitor and possibly control future treatments.

Where are we at with this 1726nm laser?

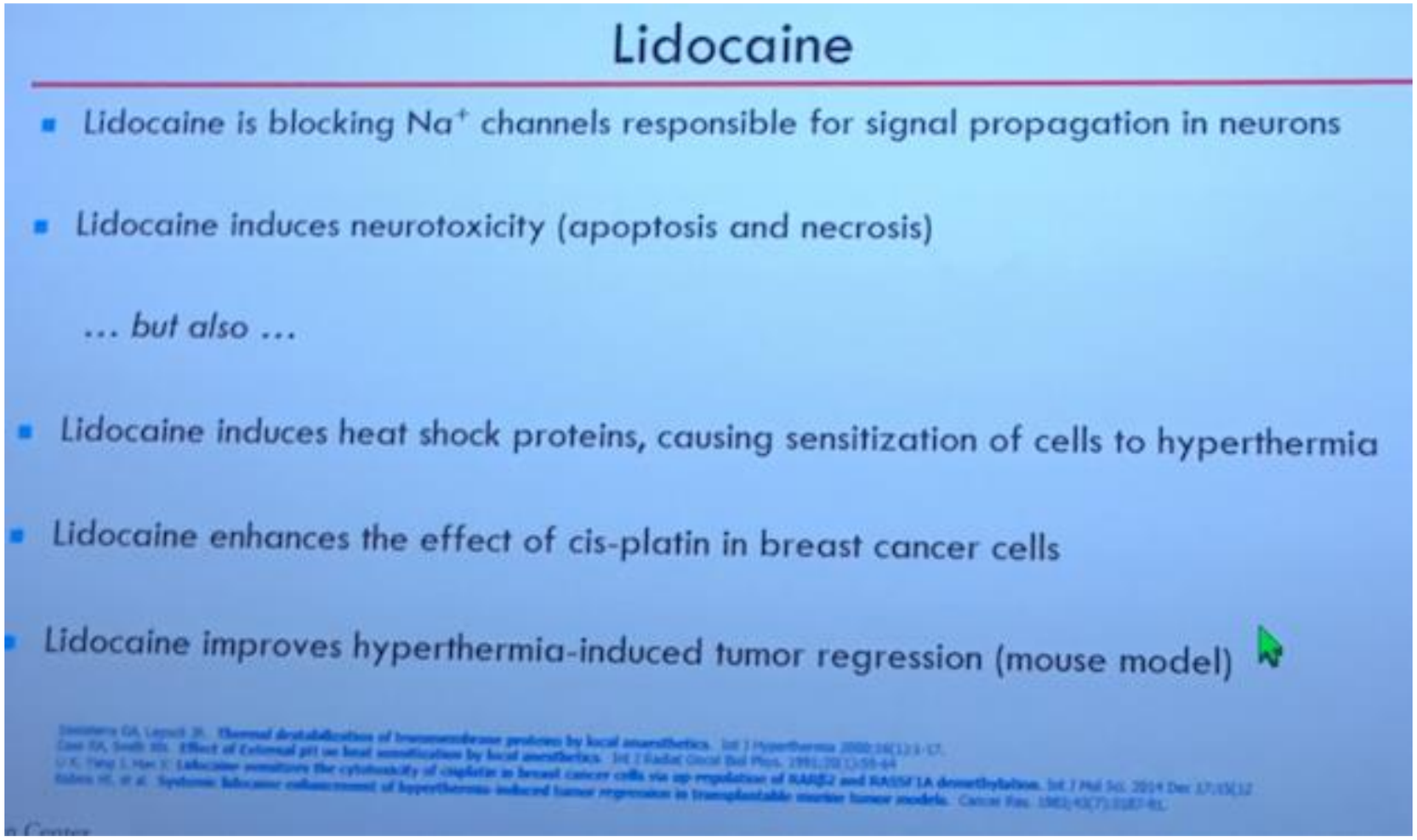
- With this "cutting edgel" device we can selectively target sebaceous glands without damaging the surrounding dermis
- We have a unique cooling system, which is robust and controllable
- We have developed a model which permits us to predict safe and effect treatment parameters
- We implemented real time monitoring with precise delivery of the laser emissions which I believe will be used for other thermal based device procedures
- We're in the process of studying acne and fine tuning the device

On attend donc avec impatience les résultats sur grande série chez l'homme
Il semble qu'avec le froid et les multipulses on arrive à une photo destruction élective des glandes sébacées, à suivre





"Can lidocaine be used to sensitize proliferating cells to thermal damage?"



La lidocaine aurait un role inhibiteur sur la prolifération de cellules cancéreuses en culture (in vitro) lorsqu'elles sont chauffées à 42°

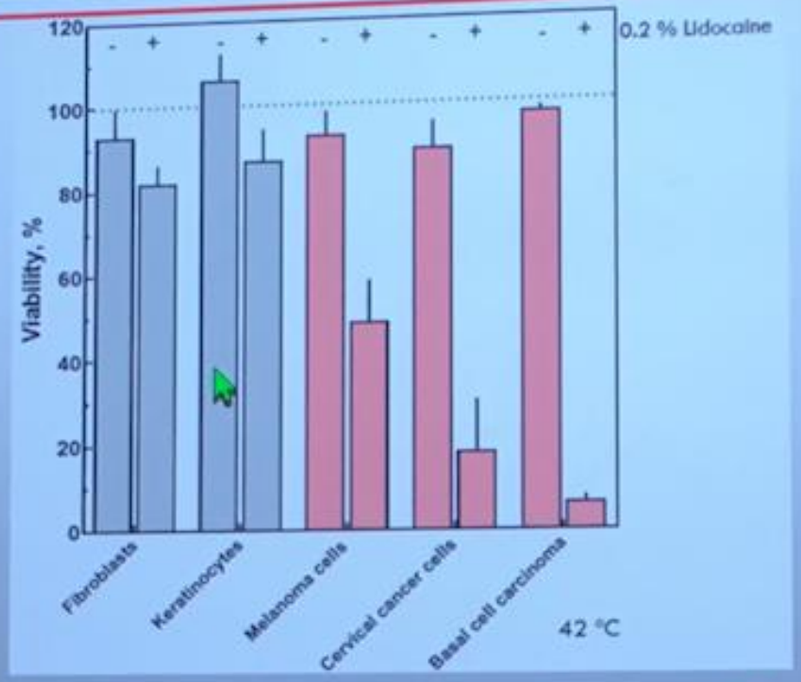
- Moderate hyperthermia (42 °C) causes minimal cell death (5-10%)
- Lidocaine significantly enhances cell toxicity of moderate hyperthermia (up to 90%
- Cancer cells are more sensitive to the combined treatment
- Cell cycle activity (S phase) correlates with cytotoxicity of combined treatment
- Potential new treatment for fast/actively growing lesions such as cancer or warts

Cell cycle analysis of normal and cancer cells

Cells	G1 Phase, %	S Phase, %	G2 Phase, %
Fibroblasts	73.1	13.3	14.8
Keratinocytes	78.2	19.2	10.8
Melanoma	45.2	39.0	16.4
Cervical Cancer	63.4	28.5	6.22
Basal Cell Carcinoma	29.6	56.1	9.72

Normal skin cells have about 75 % of the cell population in G1
40-60% of cancer cell population is active in the cell cycle (high S-phase)

Viability at 42 °C ± lidocaine



Cancer cells are more susceptible for the combined treatment of heat and lidocain

A essayer lorsqu'on veut détruire un carcinome basocellulaire par une technique qui va chauffer le tissu (PDT, laser Nd;Yag…)
Donc anesthésie locale avec la lidocaïne mais sans vasoconstricteur

BOTULINUM TOXIN *VS* MICROWAVE TREATMENT FOR HYPERHIDROSIS

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Background: The aim of this work is to summarize our pilot experience with two methods for the treatment of hyperhidrosis and excessive sweating (subjectively perceived).

It is a dermatosurgical microwave treatment (MWT) that aims to be the permanent solution of the problem and treatment with botulinum toxin (BTX), which is effective for about 48 weeks.

Study Design/Materials and Method: 32 patients previously treated with BTX (dilution 200 U/ml, 100–200 U of BTX per axilla, 10 U per point) treated with MWT (Miradry, 2–3 Tx 1 Mo apart).

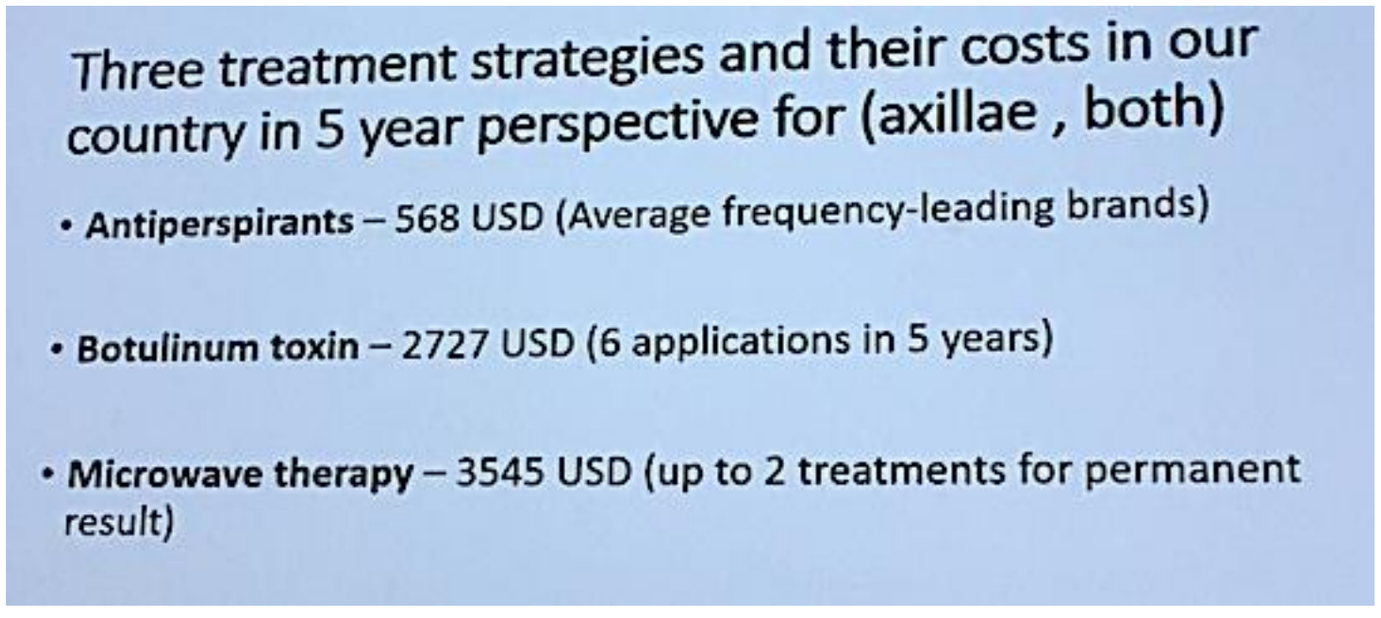
Subjective and objective evaluation of results.

Results: 24 from 32 will prefer BTX next time (75%), 6 from 7 will prefer BTX in the case of hyperhidrosis; up to 10 Mo paresthesia (1 case) in MWT group with 3 cases up to 2 Mo;

skin texture changes and superinfection (1 case) in MWT group. No side-effect for BTX group. Only 22 from 32 patient had very significant or full permanent therapeutical effect after MWT.

Conclusion: Higher satisfaction and no side-effects with BTX treatment event if it is not permanent. Need of repetitive treatment with MWT

but even after some treatment we have some non-responders or partial responders



A l'année prochaine
à Phoenix