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Pastelle®

Clinical Paper Summary



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Contents

Clinical Paper Summary

- 1 **A Pilot Study for Triple Combination Therapy with a Low-Fluence 1064nm Q-Switched Nd:YAG Laser, Hydroquinone Cream and Oral Tranexamic Acid for Recalcitrant Riel’s Melanosis** 5

Low-Fluence 1064 nm Q-Switched Nd:YAG Laser, Hydroquinone Cream,
 경구용 Tranexamic Acid의 트리플 적용을 통한
 치료 저항성 릴 흑피증(recalcitrant Riel’s Melanosis)의 탐색 임상 연구
J Dermatolog Treat, Vol. 28(2), 155-159, 2017

- 2 **Synergistic Effect of High-Intensity Focused Ultrasound and Low-Fluence Q-Switched Nd:YAG Laser In the Treatment of the Aging Neck and Décolletage** 10

고강도집속초음파(HIFU) 및 Low-Fluence Q-Switched Nd:YAG Laser 복합적용을 통한
 목 주름 및 Décolletage 치료의 시너지 효과
Lasers Med Sci, Vol. 32(1), 109-116, 2017



Contents

Clinical Paper Summary

- 3 **Beneficial Effect of Early Treatment of Aberrant Mongolian Spots with 1,064-nm Q-Switched Neodymium-Doped Yttrium-Aluminum-Garnet Laser** 15
 | 1,064-nm Q-Switched Nd:YAG Laser를 이용한 비특이적 몽고반점 조기 치료의 이점
Med Laser, Vol. 6(2), 99-101, 2017

- 4 **Treatment of Melasma with the Photoacoustic Twin Pulse Mode of Low-Fluence 1064-nm Q-Switched Nd:YAG Laser** 20
 | Low-fluence 1,064 nm Q-Switched Nd:YAG Laser의
 | Photoacoustic Twin Pulse Mode를 사용한 기미 치료
Ann Dermatol, Vol. 28(3), 290-296, 2016

- 5 **Objective Evaluation of the Effect of Q-Switched Nd:YAG (532 nm) Laser on Solar Lentigo by Using a Colorimeter** 25
 | 532 nm 파장의 Q-Switched Nd:YAG Laser를 이용한
 | 일광 흑자 치료 효과의 객관적 평가
Ann Dermatol, Vol. 27(3), 326-328, 2015



Contents

Clinical Paper Summary

- 6 **Influence of Pulse Type on Subcellular Selective Photothermolysis of Melanosomes in Adult Zebrafish Skin Following 1,064 nm, Q-Switched, Nd:YAG Laser Irradiation: A Pilot Study** 28
- | Zebrafish의 세포 내 멜라노솜의 선택적 광열응해에
| 1,064 nm, Q-Switched, Nd:YAG Laser의 Pulse type이 미치는 영향
Ann Dermatol, Vol. 27(2), 230-232, 2015



**1. A Pilot Study for Triple Combination Therapy
with a Low-Fluence 1064 nm Q-Switched Nd:YAG Laser,
Hydroquinone Cream and Oral Tranexamic Acid
for Recalcitrant Riehl's Melanosis**

치료 저항성 릴 흑피증(Riehl's Melanosis) 치료를 위한

Low-Fluence 1064 nm Q-Switched Nd:YAG Laser, Hydroquinone Cream,
경구용 Tranexamic Acid의 트리플 적용에 따른 탐색 임상 시험

J Dermatolog Treat, Vol. 28(2), 155-159, 2017

A Pilot Study for Triple Combination Therapy with a Low-Fluence 1064 nm Q-Switched Nd:YAG Laser, Hydroquinone Cream and Oral Tranexamic Acid for Recalcitrant Riehl's Melanosis

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Background: Riehl's melanosis presents as a diffuse gray-brown to black hyperpigmentation around face. The treatment of this disease is challenging and quite limited despite patients' excessive psychological stresses.

Objective: In this prospective pilot study, we evaluated the efficacy and safety for a novel combination therapy based on low-fluence Q-switched 1064 nm Nd:YAG laser, hydroquinone cream and oral tranexamic acid for recalcitrant Riehl's melanosis.

Methods: Totally eight patients with Riehl's melanosis who had failed improvements previously received multiple sessions (10-18 times) of combination treatment regimen. The primary endpoint was clinical score by the physician and the secondary endpoints were clinical score by the patients, instrumental analysis using melanin and erythema values, and histopathological score.

Results: Among eight patients, three received "Almost clear" grade, the other five patients received "Marked improvement" grade at final visits. No serious adverse events and post-treatment downtime was observed. Mean Melanin and Erythema Indexes also showed significant decreases compared with baseline. Histopathologic examination confirmed a significantly greater reduction of melanin content in melanophages.

Conclusion: This combination method can be a viable option for Asian patients having Riehl's melanosis with high risk of post-inflammatory hyperpigmentation, maintaining low-dose laser irradiation.

A Pilot Study for the Triple Combination Therapy with a Low-Fluence 1064 nm Q-Switched Nd:YAG Laser, Hydroquinone Cream and Oral Tranexamic Acid for Recalcitrant Riehl's Melanosis

[*Pastelle*[®], Paper 1]
J dermatolog Treat, Vol. 28(2), 155-159, 2017

「치료 저항성 림 흑피증(Riehl's Melanosis) 치료를 위한 Low-Fluence 1064 nm Q-Switched Nd:YAG Laser, Hydroquinone Cream, 경구용 Tranexamic Acid의 트리플 적용에 따른 탐색 임상 시험」

1. Key words

1064nm, QSNY, HQ, TNA, Triple Combination Therapy, Riehl's Melanosis, Pastelle[®]

2. Key points

- 1) **8 patients with Riehl's melanosis**
- 2) **Triple combination of LQSNY laser, hydroquinone cream and oral tranexamic acid**
- 3) **Multiple sessions (10-18 times) of combination treatment regimen**
- 4) **About 63% of the subjects showed marked improvement**
- 5) **About 37% of the subjects showed almost clear**
- 6) **No serious adverse events and post-treatment downtime**

*QSNY: Q-Switched Nd:YAG Laser

*HQ: Hydroquinone Cream

TNA: Tranexamic Acid

A Pilot Study for the Triple Combination Therapy with a Low-Fluence 1064 nm Q-Switched Nd:YAG Laser, Hydroquinone Cream and Oral Tranexamic Acid for Recalcitrant Riehl's Melanosis

[Pastelle[®], Paper 1]
J dermatolog Treat, Vol. 28(2), 155-159, 2017

「치료 저항성 릴 흑피증(Riehl's Melanosis) 치료를 위한 Low-Fluence 1064 nm Q-Switched Nd:YAG Laser, Hydroquinone Cream, 경구용 Tranexamic Acid의 트리플 적용에 따른 탐색 임상 시험」

3-1. Result

[Before]

[After]



4-1. Parameter - QSNY

- multiple sessions (10-15 times)
- 3-week interval
- 10 mm spot size
- 1.1-1.3 J/cm² fluence
- 2-3 passes

4-2. Parameter – HQ Cream

- 4% HQ cream
- during every night

4-3. Parameter – oral TNA

- 250 mg/day

A Pilot Study for the Triple Combination Therapy with a Low-Fluence 1064 nm Q-Switched Nd:YAG Laser, Hydroquinone Cream and Oral Tranexamic Acid for Recalcitrant Riehl's Melanosis

[Pastelle[®], Paper 1]
J dermatolog Treat, Vol. 28(2), 155-159, 2017

「치료 저항성 릴 흑피증(Riehl's Melanosis) 치료를 위한 Low-Fluence 1064 nm Q-Switched Nd:YAG Laser, Hydroquinone Cream, 경구용 Tranexamic Acid의 트리플 적용에 따른 탐색 임상 시험」

3-2. Result

[Before]

[After]



4-1. Parameter - QSNY

- multiple sessions (10-15 times)
- 3-week interval
- 10 mm spot size
- 1.1-1.3 J/cm² fluence
- 2-3 passes

4-2. Parameter – HQ Cream

- 4% HQ cream
- during every night

4-3. Parameter – oral TNA

- 250 mg/day



2. Synergistic Effect of High-Intensity Focused Ultrasound and Low-Fluence Q-Switched Nd:YAG Laser In the Treatment of the Aging Neck and Décolletage

고강도집속초음파(HIFU) 및 Low-Fluence Q-Switched Nd:YAG Laser 복합적용을 통한 목 주름 및 Décolletage 치료의 시너지 효과

Lasers Med Sci, Vol. 32(1), 109-116, 2017

Synergistic Effect of High-Intensity Focused Ultrasound and Low-Fluence Q-Switched Nd:YAG Laser in the Treatment of the Aging Neck and Décolletage

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High-intensity focused ultrasound (HIFU) is regarded as an effective skin-lifting device; however, literature regarding treatment of the aging neck and décolletage with HIFU is scarce. Our study aimed to evaluate the efficacy of combination with HIFU and low-fluence Q-switched Nd:YAG (LQSNY) laser on the aging neck and décolletage. Nineteen women were assessed. HIFU at two visits and LQSNY laser at six visits were used to irradiate the neck and chest. At week 16, improvements were rated using the Dedo classification, Fabi/Bolton Chest Wrinkle Scale (FBCWS), and Global Aesthetic Improvement Scales (GAIS). Erythema and melanin indices (EMIs) and cervicomenal angle were measured. Subject GAIS and satisfaction were evaluated at follow-up visits. At week 16, neck sagging and chest rhytides were improved on Dedo classification and FBCWS, respectively. Pigmentation and rhytides of the neck and chest were rated as improved in 30 % or more of the subjects by physician GAIS and in approximately 80 % of the subjects by subject GAIS. The above differences seemed to be attributable to the initial expectation level and mild severity pertaining to dress custom in Korea. Eighty-four percent of subjects were satisfied with treatment outcomes. EMIs were decreased on the chest. The combination of HIFU and LQSNY is an effective treatment option to mitigate rhytides and pigmentation of the neck and décolletage.



「고강도집속초음파(HIFU) 및 low-fluence Q-switched Nd:YAG Laser 복합적용을 통한 목 주름 및 décolletage 치료의 시너지 효과」

1. Key words

LQSNY, HIFU, Aging neck, Décolletage, Body rejuvenation, Pastelle[®] and Ultraskin[®]

2. Key points

- 1) **19** Korean women with **aging neck and décolletage**
- 2) **Combination of LQSNY laser and HIFU**
- 3) **6 sessions of LQSNY laser treatment and 2 sessions of HIFU**
- 4) **After week 16**
- 5) **Over 78%** of the subjects showed **improvement** in **pigmentation**
- 6) **About 84%** of the subjects expressed **significant improvement** in **neck sagging**
- 7) **Over 80%** of the subjects showed **improvement** in **chest wrinkles**
- 8) **No major adverse events**

*LQSNY: Low-Fluence Q-Switched Nd:YAG

*HIFU: High-intensity focused ultrasound



「고강도집속초음파(HIFU) 및 low-fluence Q-switched Nd:YAG Laser 복합적용을 통한 목 주름 및 décolletage 치료의 시너지 효과」

3-1. Result

{ Before }

{ After }



4-1. Parameter - LQSNY

- PTP & conventional mode
- 7 mm spot size
- 3.0J/cm² for the PTP mode
- Total of lines; 2,250 lines
 - ① neck with 1,500 lines
 - ② chest with 750 lines
- entire treatment time; 10 min

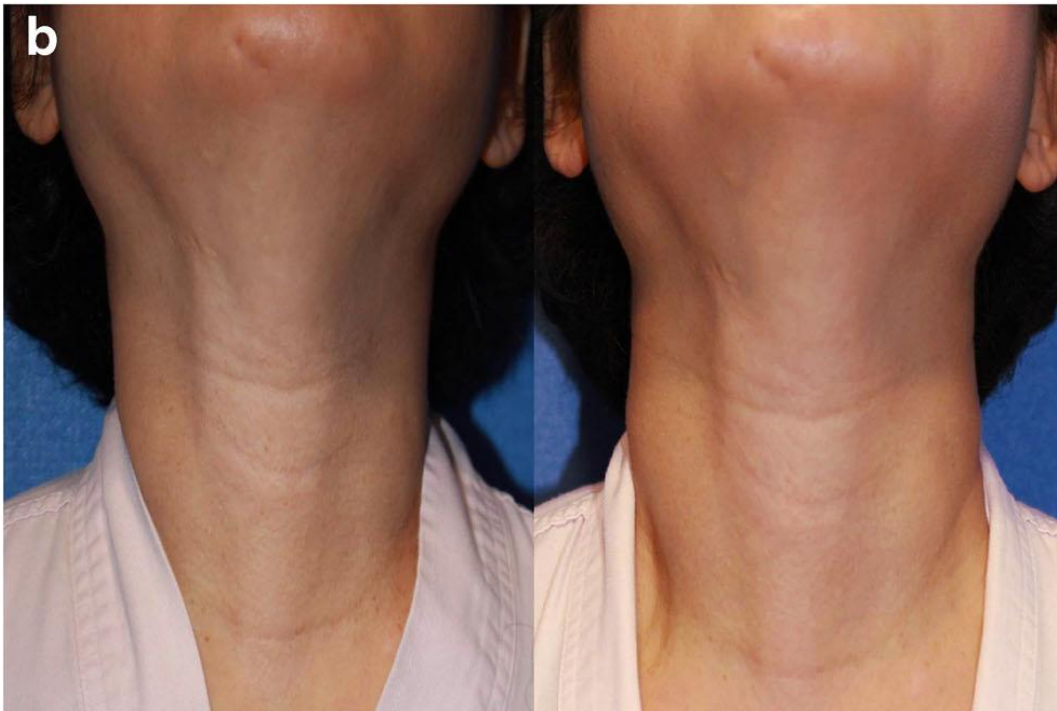


「고강도집속초음파(HIFU) 및 low-fluence Q-switched Nd:YAG Laser 복합적용을 통한 목 주름 및 décolletage 치료의 시너지 효과」

3-2. Result

[Before]

[After]



4-2. Parameter - HIFU

- 2 kinds of cartridges
 - ① 4.0MHz, 4.5mm depth, 0.8J/cm²
 - ② 7.0MHz, 3.0mm depth, 1.2J/cm²
- 1.2 mm spacing
- 25 mm length
- Total of lines; 770 lines
 - ① neck with 530 lines
 - ② chest with 240 lines
- Without overlapping areas
- entire treatment time; 1h



3. Beneficial Effect of Early Treatment of Aberrant Mongolian Spots with 1,064-nm Q-Switched Neodymium-Doped Yttrium-Aluminum-Garnet Laser

1,064-nm Q-Switched Nd:YAG Laser를 이용한 비특이적 몽고반점 조기 치료의 이점
Med Laser, Vol. 6(2), 99-101, 2017

Beneficial Effect of Early Treatment of Aberrant Mongolian Spots with 1,064-nm Q-Switched Neodymium-Doped Yttrium-Aluminum-Garnet Laser

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Aberrant Mongolian spots are a benign cutaneous pigmentary disorder, which in contrast to sacral Mongolian spots, have tendency to persist without regression. Two young children with aberrant Mongolian spot were treated using Q-switched neodymium:yttrium-aluminum-garnet (Nd:YAG) laser under local anesthetic cream. In both cases, Q-switched Nd:YAG laser treatment was quite safe and effective. Early laser treatment may be a recommended treatment for aberrant Mongolian spots.

「1,064-nm Q-Switched Nd:YAG Laser를 이용한 비특이적 몽고반점 조기 치료의 이점」

1. Key words

1064nm, QSNY, Aberrant Mongolian Spot, Pastelle[®]

2. Key points

- 1) 2 patients **under 3 years old** with **well demarcated bluish spot**
- 2) **3 to 5 sessions** of 1,064-nm Q-Switched Nd:YAG laser treatment
- 3) **All young patients** expressed **excellent** clinical **improvement**
- 4) **No adverse events**

*QSNY: Q-Switched Nd:YAG Laser

Beneficial Effect of Early Treatment of Aberrant Mongolian Spots with 1,064-nm Q-Switched Neodymium-Doped Yttrium-Aluminum-Garnet Laser

「1,064-nm Q-Switched Nd:YAG Laser를 이용한 비특이적 몽고반점 조기 치료의 이점」

3-1. Result

{ Before }



{ After }



4-1. Parameter

- A 3-year old female
- on the right thigh
- 7 mm spot size
- 1.5-2.0 J/cm² fluence
- 10 Hz
- 5 sessions
- 3 months interval

Beneficial Effect of Early Treatment of Aberrant Mongolian Spots with 1,064-nm Q-Switched Neodymium-Doped Yttrium-Aluminum-Garnet Laser

「1,064-nm Q-Switched Nd:YAG Laser를 이용한 비특이적 몽고반점 조기 치료의 이점」

3-2. Result

{ Before }



{ After }



4-2. Parameter

- A 2-year old female
- on the right knee
- 7 mm spot size
- 1.5-2.0 J/cm² fluence
- 10 Hz
- 3 sessions



4. Treatment of Melasma with the Photoacoustic Twin Pulse Mode of Low-Fluence 1064-nm Q-Switched Nd:YAG Laser

Low-fluence 1,064 nm Q-Switched Nd:YAG Laser의
Photoacoustic Twin Pulse Mode를 사용한 기미 치료
Ann Dermatol, Vol. 28(3), 290-296, 2016

Objective Evaluation of the Effect of Q-Switched Nd:YAG (532 nm) Laser on Solar Lentigo by Using a Colorimeter

Ji Seok Kim, Chan Hee Nam, Jee Young Kim, Ji Won Gye, Seung Phil Hong, Myung Hwa Kim, Byung Cheol Park

Department of Dermatology, Dankook University College of Medicine, Cheonan, Korea

Background: Low-fluence 1,064 nm Q-switched Nd:YAG laser has been widely used for the treatment of melasma. Although new Q-switched Nd:YAG lasers with photo-acoustic twin pulse (PTP) mode have been recently developed for high-efficiency, there is limited information available for the new technique.

Objective: This study was designed to investigate the efficacy and adverse effects after few sessions of repeated low fluence 1,064 nm Q-switched Nd:YAG laser treatment with PTP mode in Asian women with melasma.

Methods: Twenty-two Korean women were treated with a total of five sessions of low-fluence PTP mode Nd:YAG laser treatment (*Pastelle*[®]) at 2 weeks interval. Responses to treatments were evaluated by using Melasma Area and Severity Index (MASI) scoring, colorimeter measurement, and the investigators' and patients' overall assessments. Adverse events were recorded at each visit.

Results: Investigators' and patients' overall assessment showed that 'significantly improved' was assessed by 13 (59.1%) and 19 of 22 patients (86.4%), respectively. MASI scores were significantly reduced by 20.4%. The lightness, measured by using a colorimeter, was significantly increased by 1.3 point. Notable adverse events were not observed.

Conclusion: After 5 sessions of laser therapy alone, about 60% of the subjects showed significant improvement. Few sessions of repeated laser toning treatment using the PTP mode is a safe and effective way to treat facial melasma.



「Low-Fluence 1,064nm Q-Switched Nd:YAG Laser의
Photoacoustic Twin Pulse Mode를 사용한 기미 치료」

1. Key words

Laser toning, Melasma, 1064nm, Nd:YAG laser, Photoacoustic twin pulse, *Pastelle*[®]

2. Key points

- 1) 22 Korean women with **facial melasma**
- 2) **Low fluence 1,064 nm Q-switched PTP mode** Nd:YAG laser therapy
- 3) **After 5 sessions** of laser therapy alone
- 4) **About 60%** of the subjects showed **significant improvement**
- 5) **No notable adverse events**



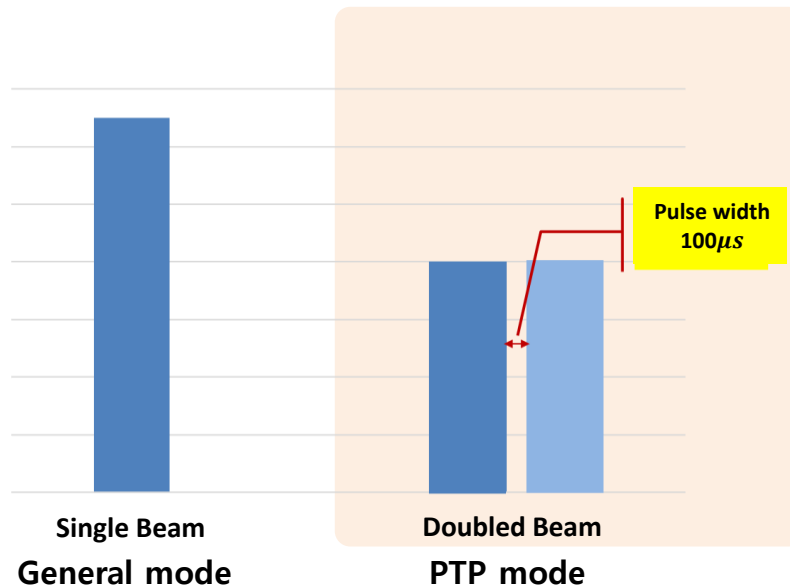
「Low-Fluence 1,064nm Q-Switched Nd:YAG Laser의 Photoacoustic Twin Pulse Mode를 사용한 기미 치료」

2. Key points

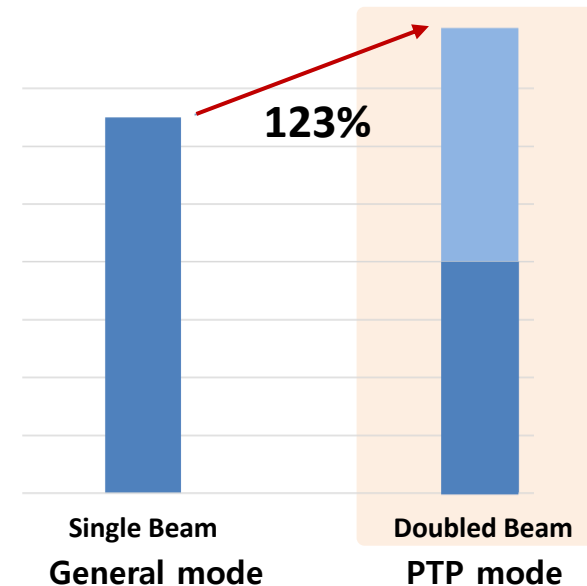
6) Photoacoustic Twin Pulse (PTP) Mode

- ; successive two beams are emitted at very short intervals (about 100 μ s)
- ; synergistically produce higher peak power than a single beam (123%)

[Pulse type]



[Power depending on pulse type]



Treatment of Melasma with the Photoacoustic Twin Pulse Mode of Low-Fluence 1,064 nm Q-Switched Nd:YAG Laser



「Low-Fluence 1,064nm Q-Switched Nd:YAG Laser의 Photoacoustic Twin Pulse Mode를 사용한 기미 치료」

3. Result

{ Before }



{ After }



4. Parameter

- 7 mm spot size
- 2.5 J/cm² fluence
- 5 – 7 passes
- Laser shots;
2,194.02 ± 696.24/session
- 5 sessions
- 2 weeks interval



5. Objective Evaluation of the Effect of Q-Switched Nd:YAG (532 nm) Laser on Solar Lentigo by Using a Colorimeter

532 nm 파장의 Q-Switched Nd:YAG Laser를 이용한
일광 흑자 치료 효과의 객관적 평가

Ann Dermatol, Vol. 27(3), 326-328, 2015

Objective Evaluation of the Effect of Q-Switched Nd:YAG (532 nm) Laser on Solar Lentigo by Using a Colorimeter

「532nm 파장의 Q-Switched Nd:YAG Laser를 이용한 일광흑자 치료 효과의 객관적 평가」

1. Key words

Solar lentigo, 532nm, Q-Switched Nd:YAG laser, Photoacoustic twin pulse, Colorimeter evaluation, Pastelle[®]

2. Key points

- 1) **20** Koreans with **solar lentiginos** on the face
- 2) **Low fluence 532 nm Q-switched Nd:YAG** laser therapy
- 3) **Excellent response after 2 sessions** of laser therapy alone
- 4) **72.25%** of the subjects showed **excellent improvement in pigmentation**
- 5) 75% of the subjects reported mild to moderate pain
- 6) **No notable adverse events**

Objective Evaluation of the Effect of Q-Switched Nd:YAG (532 nm) Laser on Solar Lentigo by Using a Colorimeter

「532nm 파장의 Q-Switched Nd:YAG Laser를 이용한 일광흑자 치료 효과의 객관적 평가」

3. Result

[Before]



[After]



4. Parameter

	Wavelength(nm)	Spot size(mm)	Fluence(J/cm ²)	Sessions	Intervals
Solar lentigo	532	3-4	0.7-0.8	2	4 weeks



6. Influence of Pulse Type on Subcellular Selective Photothermolysis of Melanosomes in Adult Zebrafish Skin Following 1,064 nm, Q-Switched, Nd:YAG Laser Irradiation: A Pilot Study

Zebrafish의 세포 내 멜라노솜의 선택적 광열용해에

1,064 nm, Q-Switched, Nd:YAG Laser의 Pulse type이 미치는 영향

Ann Dermatol, Vol. 27(2), 230-232, 2015

Influence of Pulse Type on Subcellular Selective Photothermolysis of Melanosomes in Adult Zebrafish Skin Following 1,064-nm, Q-Switched, Nd:YAG Laser Irradiation: A Pilot Study

[*Pastelle*[®], Paper 6]
Ann Dermatol, Vol. 27(2), 230-232, 2015

「Zebrafish의 세포 내 멜라노솜의 선택적 광열용해에
1,064 nm, Q-Switched, Nd:YAG Laser의 pulse type이 미치는 영향」

1. Key words

Melanosome, Laser toning, 1064nm, Q-switched Nd:YAG, Fluence, PTP mode, Pastelle[®]

2. Key points

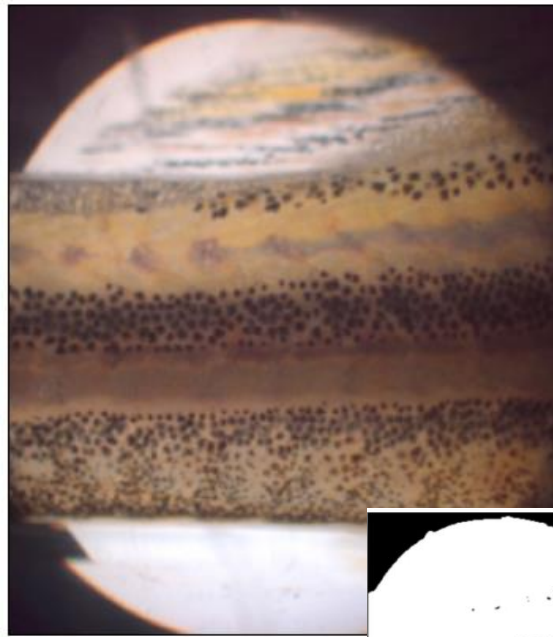
- 1) **Adult Zebrafish skin** tissue with **melanosomes**
- 2) **low fluence(0.5 J/cm²) 1064 nm Q-switched Nd:YAG laser therapy**
- 3) **After 1 week** of laser irradiation
- 4) **All** of the pigment debris **had disappeared**
- 5) **Dual-pulse laser(PTP mode) destroys melanosomes** with a **sub-threshold peak power**

Influence of Pulse Type on Subcellular Selective Photothermolysis of Melanosomes in Adult Zebrafish Skin Following 1,064-nm, Q-Switched, Nd:YAG Laser Irradiation: A Pilot Study

「Zebrafish의 세포 내 멜라노솜의 선택적 광열용해에 1,064 nm, Q-Switched, Nd:YAG Laser의 pulse type이 미치는 영향」

3. Result

[Before]

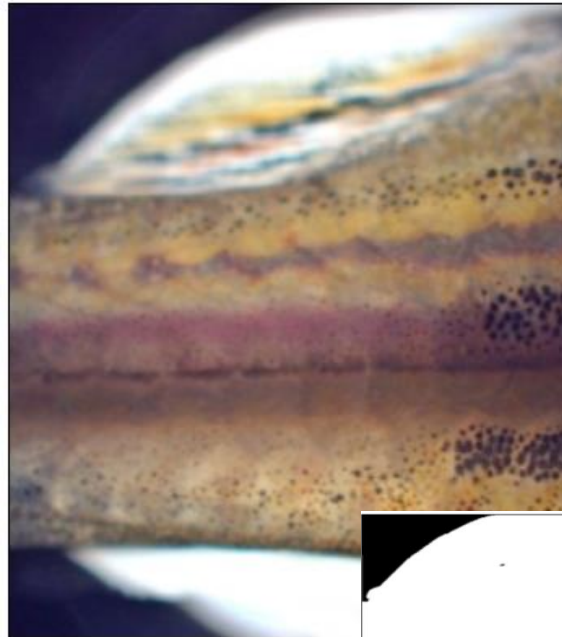


Microscopic image(x12.5)

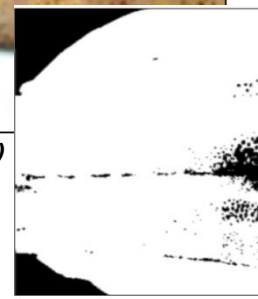


Binary image

[After]



Microscopic image(x12.5)



Binary image

4. Parameter

- Dual pulse type
- 7 mm spot size
- 0.5 J/cm² fluence
- 1 week after



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