



12<sup>th</sup> World Congress of  
**Cosmetic  
Dermatology**

2017 BENGALURU  
Joint meeting of IACD & ACS(I)



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## Programme Guide

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**Dates :**  
4<sup>th</sup> to 6<sup>th</sup> May, 2017

**Venue :**  
Dr. Babu Rajendra Prasad  
International Convention Centre (GKVK)  
Bengaluru, India

[www.wcocdbengaluru.com](http://www.wcocdbengaluru.com)

Cosmetic Dermatology  
Global Perspectives



## MESSAGE FROM WCOCD PRESIDENT

World congress of cosmetic Dermatology - on Indian mission, with a global vision

Dear Delegates,

I am happy that the World Congress of Cosmetic Dermatology 2017 has turned out precisely to be what we thought it would be- A mega event, with about 4000 registrations, 70 international faculties, 6 International society sessions, and over 300 national faculties, 50 industry stalls- arguably the largest ever congress on this subject this year. The program is all encompassing- 96 hours of symposia, 10 master classes, 6 workshops, 6 video instructional courses, and sponsored sessions. Over 500 scholarships have been given to deserving delegates. This Congress will thus see a true convergence of novel ideas, skills and practices in the field of Aesthetics and Cosmetic Dermatology. An academic bonanza awaits you.

The conference will highlight advances in the fields of Laser surgery, Aesthetic treatments, skin cancer and Dermatotomy, such as hair transplantation, liposuction and fat transfer, vitiligo surgery etc. *Some unique sessions are planned- Feminine rejuvenation, injection lipolysis, cryolipolysis, body contouring techniques. A unique innovations session including talks on Internet of medical things, 3D printing and wearable technologies.* Another novel feature is a leadership session which includes a panel discussion with world leaders in dermatology - their stories will serve as inspiration to young dermatologists. We are also delighted by the presence of 6 sister society sessions- Philippines, Iran, Indonesia, South Africa, world Health academy and a unique Gender dermatology session by IACD. This is in tune with the theme of the "Cosmetic Dermatology – Global Perspectives".

The conference will not only educate but also entertain. Social programs will showcase all that is unique about India and Bengaluru, in music, dance, art, culture and cuisine, in events that have been carefully planned to showcase the richness and wonder that is in India. Social responsibility is executed through several community programs such as cycle rally, tree plantation etc. We have also strived to make the congress a digital congress, using "less paper".

The organizing team has strived hard to make this congress unique and grand, educational, entertaining and enthralling; in short it will give you a taste of unique Indian hospitality. On behalf of the organizing committee I welcome you all, in the true Indian way.

**AthaSwagatham, Shubha Surwagatham,**

**Dr Venkataram Mysore, MD DNB DipRCPath (Leed) FRCP (Glasgow) FISHD**

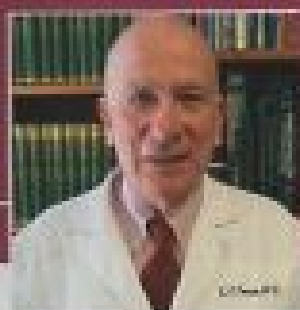
**Dr Chandrashekhara B S, Dr R Raghunatha Reddy**

**Dr Saechidanand S, Dr Rajendran S C, Dr D A Satish, Dr. T S Nagaraju, Dr Umashankar N,**

**Dr Shashi Kumar BM, Dr P Jagdish, Dr Savitha AS, Dr Madura C**

**and entire scientific and organizing committee-TEAM BENGALURU**

## WELCOME LETTER FROM IACD PRESIDENT



The International Academy of Cosmetic Dermatology (IACD) is delighted to be holding its XII World Congress in Bengaluru in collaboration with the Association of Cutaneous Surgeons of India (ACSI). From its inception two decades ago, IACD has been privileged to conduct its Congresses on every continent, so we are particularly pleased to have joined in organizing the XII World Congress in India.

The IACD continues its role as a major force in the rapidly expanding field of cosmetic dermatology and to foster the cooperation of physicians interested in the aesthetic aspects of medicine with the members of the pharmaceutical and cosmetic industries. This has placed the IACD on a strong foothold in the sphere of cosmetic dermatology.

Cosmetic dermatology should be considered as that part of the practice of dermatology that focuses on "looking-good." While cutaneous medicine and surgery have emphasized the diagnosis, treatment, and prevention of skin disease, there is also a significant aspect of the specialty directed towards improving the patient's appearance, an idea that has been integral to dermatology since its inception as a specialty in the nineteenth century.

The organizers have created a stellar program on a wide variety of cosmetic concepts, while the speakers include experts from around the world. On behalf of the IACD, let me welcome you to Bengaluru.

**Lawrence Charles Parish, MD, MD (Hon),**  
President, International Academy of Cosmetic Dermatology (IACD)

**Jennifer Parish**  
International Program Chair – WCCD  
Board Member, IACD



## WELCOME LETTER FROM ACS(I) PRESIDENT

It is a privilege for me to write this message as President of ACS(I) on the momentous occasion of the 12<sup>th</sup> World Congress of Cosmetic Dermatology along with ACSICON 2017, the 15<sup>th</sup> National conference of the Association of Cutaneous Surgeons (I). The scientific programme of this conference is unique in several ways and this programme book, I am sure, would be referred to in years to come as a watershed in the conduct of scientific meetings not only in India, but in several ways, around the world. I laud the scientific committee who have innovated and experimented boldly to serve us on a platter, a feast of a sequence of events during the days of the congress, fit for the kings and queens of aesthetic and procedural dermatology. This has been, without doubt, a journey that has scaled hitherto considered unachievable heights in the meticulous planning and execution of a scientific conference.

Herein, connoisseurs as well as beginners would find material and information to savour for a long period to come. The brief of the deliberations would not only act as the template of this conference but would provide the bedrock for future meetings on similar subjects.

The faculty for this conference have been chosen with a close eye on their areas of expertise rendering this conference a degree of versatility never before seen in the dermatology firmament in our country. The sheer multifaceted canvas of this congress would ensure that the legacy of the organisation and scientific teams would be indelibly imprinted on the minds of all those who attend or are touched by the deliberations of this conference. It is very reasonable to expect that future organisers would strive to emulate what would be one of the landmark meetings not only in Dermatology, but in the entire field of biomedical science.

I wish the conference the very best.

Jai Hind.

Dr Col Manas Chatterjee, President ACS(I)



## WELCOME LETTER FROM THE SECRETARY GENERAL, WCOCD 2017

Message from the Secretary General WCOCD 2017!!!

Dear Delegates and esteemed faculty,

It gives me great honour, privilege and pleasure to welcome you all to 12<sup>th</sup> World Congress of Cosmetic Dermatology 2017 (WCOCD) at Bengaluru - Silicon Valley of India from May 4<sup>th</sup> to 6<sup>th</sup> 2017. The conference is being organized jointly by Association of cutaneous surgeons of India ACS(I) and International Academy of Cosmetic Dermatology (IACD).

On behalf of organizing committee of WCOCD I promise you a unique, well-structured, meticulously planned congress of truly international standard. This congress unfolds many first of it's kind features in every aspect such as scientific, venue structuring, industry exhibition and cuisine.

Pre congress events such as cycle rally and media briefing are organized to spread awareness among public about skin care, steroid abuse, Vitiligo etc.

The scientific sessions run parallel in 10 Halls which is unique for any congress so far in India. The scientific Committee has put in enormous efforts in designing the content which comprehensively covers each and every aspect of Dermatotomy and Cosmetology. The faculty chosen from across the globe are doyens and stalwarts in their respective fields.

The venue Dr. Babu Rajendra Prasad International convention centre located in the campus of University of Agricultural sciences – SKVK is mesmerizing with its lush green environment and contemporary style auditorium. It is easily commutable from airport and city centre.

The social programs involve musical nights from internationally renowned artists including performance from visually challenged children. Dermatalent exhibition from our own delegates showcases poetry, photography, painting and cultural events. The details of these programs can be found in social program book.

The mouth-watering cuisine offers you continental, Indian, regional and local flavours. Refreshments are provided round the corner during conference hours keeping in mind the requirements of the summer season.

The industry exhibition is strategically planned to keep it clean, environment friendly and noiseless.

Keep expecting much more surprises, innovations and grandeur.

Come, join us in Bengaluru!

Bengaluru beckons you for a congress to be remembered and cherished for life time.

With best regards  
Yours Sincerely

Dr. B.S. Chandrashekar  
Secretary General  
WCOCD 2017

## 12TH WORLD CONGRESS OF COSMETIC DERMATOLOGY COMMITTEES

### Organizing Committee

- Dr. Venkataram Mysore, Congress President – 9845363520
- Dr. B.S. Chandrashekar, Secretary General / C.E.O – 9740091155
- Prof. R. Raghunatha Reddy, Organizing Chair – 9845007154
- Dr. T.S Nagaraju, Treasurer - 9845201525
- Dr. S. C. Rajendran, Vice President (Workshop) – 9845700112
- Dr. S. Sacchidanand, Vice President (Organizing) – 9341218715
- Dr. D.A. Satish, Vice President (Scientific) – 9845006668

### Patrons

- Dr. Ganesh S. Pai – 9845082129
- Dr. S. D. N. Gupta - 9845824744
- Dr. K Srinivasa Murthy - 9448487213
- Dr. N. Patwardhan -9822057712

### Joint Secretaries

- Dr. Umashankar Nagaraju - 9448151468
- Dr. B. M. Shashikumar - 9886197902
- Dr. P. Jagadish - 9480493999

### Advisors

- Dr. C. R Srinivas – 9894625702
- Dr. Somesh Gupta - 9868899120
- Dr. Koushik Lahiri - 9830036112
- Dr. Rashmi Sarkar - 9818244340
- Dr. Arun C Inamdar - 94481 02920
- Dr. Anil Abraham - 9901998146
- Dr. Ramesh Bhat - 9840031223
- Dr. P. M. Sangoli -9945684806
- Dr. Davinder Parsad - 98760 60361
- Dr. M. Ramesh - 9880858573
- Dr. Suresh Talwar - 9335917611
- Dr. Narendra Kamath - 9845744368

### International Ambassadors

- Dr. Jayakar Thomas - 9841038484
- Dr. Shyam Verma - 922 710 6000
- Dr. Hema Jerajani - 98200 31483
- Dr. Suresh P. Joshipura - 9978912740
- Dr. D. D. Benodkar - 9699843940

## SCIENTIFIC COMMITTEE

Scientific Secretaries	Members
<ul style="list-style-type: none"> <li>• Dr. A. S. Savitha (Symposium) - 9880512166</li> <li>• Dr. C. Madura (Workshop) - 9632741998</li> <li>• Dr. Umashankar Nagaraju (Video Courses) - 9448151468</li> <li>• Dr. B. M. Shashikumar (Master Classes) - 9886197902</li> <li>• Dr. Vani Yepuri (Sister Societies) - 7760672615</li> </ul>	<ul style="list-style-type: none"> <li>• Dr. K.C. Nischal - 9945519923</li> <li>• Dr. Urmila Nischal - 9945139923</li> <li>• Dr. Samipa S. Mukherjee - 8951255465</li> <li>• Dr. Kavya - 9480118228</li> <li>• Dr. T. S. Nagesh - 9844578068</li> <li>• Dr. K. Shilpa - 9886553646</li> <li>• Dr. L. Eshwari - 9845935375</li> <li>• Dr. Raghunatha S - 09886520848</li> <li>• Dr. Sujala S Aradhya - 9900280192</li> <li>• Dr. Aniketh Venkataram - 9845580871</li> </ul>
Website	
<ul style="list-style-type: none"> <li>• Dr. Rasya Dixit - 9449404645</li> </ul>	
Catering Committee	Registration committee
<ul style="list-style-type: none"> <li>• Dr. S. D. N. Gupta - 9845824744</li> <li>• Dr. P. Jagadish - 9480493999</li> <li>• Dr. M. A. Sandeep - 9886060510</li> <li>• Dr. M. Mahesh - 9980558998</li> <li>• Dr. M. R. Harish - 9448323157</li> <li>• Dr. T. S. Nagesh - 9844578068</li> </ul>	<ul style="list-style-type: none"> <li>• Dr. Prabhakar Sangoli - 919945684806</li> <li>• Dr.M. Ramesh - 9880858573</li> <li>• Dr.R. Pavan Raj - 8971331292</li> <li>• Dr. Harikishan Kumar - 9902066568</li> </ul>
Social Program Committee	Reception Committee
<ul style="list-style-type: none"> <li>• Dr. Samipa S. Mukherjee - 8951255465</li> <li>• Dr. M. S. Suresh - 9036826984</li> <li>• Dr. Govind Mittal - 9844479263</li> <li>• Dr. Sujala S Aradhya - 9900280192</li> </ul>	<ul style="list-style-type: none"> <li>• Dr. A. S. Nandini - 9886829579</li> <li>• Dr. Nirmala Markandeya - 7406630046</li> <li>• Dr. M. Ramesh - 9880858573</li> <li>• Dr. M. S. Suresh - 9036826984</li> </ul>
Travel & Accommodation Committee	Venue Committee
<ul style="list-style-type: none"> <li>• Dr. T. S. Nagaraju - 9845201525</li> <li>• Dr. Chandrakanth Morabad - 9845365571</li> <li>• Dr. Madan Mohan - 9845074316</li> <li>• Dr. Keshav - 9844453175</li> </ul>	<ul style="list-style-type: none"> <li>• Dr. Umashankar Nagaraju - 9448151468</li> <li>• Dr. B. M. Shashikumar - 9886197902</li> <li>• Dr. P. Jagadish - 9480493999</li> <li>• Dr. Keshav - 9844453175</li> <li>• Dr. Govinda Mittal - 9844479263</li> </ul>

## Social & Cultural Events Committee

- |  |  |
|--|--|
| • Dr. K. Srinivasa Murthy (Chairperson) – 9448487213 | • Dr. Poorva Shah - 9890188699         |
| • Dr. T. S. Vidya (Co Chairperson) – 9901902304      | • Dr. Vaishalee Kirane - 9822597585    |
| • Dr. Urmila Nischal (Convener) – 9945139923         | • Dr. Namitha Chethra - 9740203000     |
| • Dr. Manish Gautam - 9821012573                     | • Dr. Govinda Mittal - 9844479263      |
| • Dr. Madhulika Mhatre - 9819023420                  | • Dr. Sampsa S. Mukherjee - 8951255465 |
| • Dr. Rohith Batra - 9911200050                      | • Dr. Anil Ganjoo - 9811066584         |
| • Dr. Jayashree Sharad - 9820058598                  | • Dr. Manjunath Shenoy - 9845009976    |
|  | • Dr. Ramesh Bhat - 9840031223         |
|  | • Dr. Anil Abraham - 9901998145        |
|  | • Dr. Nirmla Markandeya - 7406630046   |



Bucheshwara temple in Kovvur, said to be built in 1173AD, is dedicated to Bucheshwara(a form of lord Shiva). The main shrine has the Linga(Bucheshwara), along with Saptamathrike(7 forms of goddess durga), Sharada, Ganapati (the actual idol was said to be stolen few months back and presently there is a small idol kept in its place), and other deities. Facing the main deity is the shrine of Suryanarayana, the only idol of the deity in whole Karnataka.



# PROGRAM AT A GLANCE

SEMESTER	COURSE	DATE	SCHEDULE	MODULES	LEARNING OBJECTIVES	ASSESSMENT	TEACHING METHODS	INSTRUCTIONAL MEDIA	REFERENCE
SEMESTER I	WCOE 101 - General English	01/08 to 02/08	01/08 to 02/08	Module 1: Introduction to English Language	1. Understand the importance of English language in the global world. 2. Identify the basic structure of English sentences.	Written Test	Classroom Instruction	PowerPoint, Audio, Video	1. English Grammar for Dummies by Jeffrey McQuay 2. English Grammar for Dummies by Jeffrey McQuay
		03/08 to 04/08	03/08 to 04/08	Module 2: Reading Comprehension	1. Develop reading skills to understand the main idea and details of a passage. 2. Identify the author's purpose and tone.	Written Test	Classroom Instruction	PowerPoint, Audio, Video	1. English Grammar for Dummies by Jeffrey McQuay 2. English Grammar for Dummies by Jeffrey McQuay
		05/08 to 06/08	05/08 to 06/08	Module 3: Writing Skills	1. Develop writing skills to compose a paragraph and an essay. 2. Identify the structure of a paragraph and an essay.	Written Test	Classroom Instruction	PowerPoint, Audio, Video	1. English Grammar for Dummies by Jeffrey McQuay 2. English Grammar for Dummies by Jeffrey McQuay
		07/08 to 08/08	07/08 to 08/08	Module 4: Grammar	1. Understand the basic grammar rules of English. 2. Identify the parts of speech and their functions.	Written Test	Classroom Instruction	PowerPoint, Audio, Video	1. English Grammar for Dummies by Jeffrey McQuay 2. English Grammar for Dummies by Jeffrey McQuay
SEMESTER II	WCOE 102 - Business Communication	01/08 to 02/08	01/08 to 02/08	Module 1: Business Communication	1. Understand the importance of business communication in the organization. 2. Identify the basic structure of a business communication.	Written Test	Classroom Instruction	PowerPoint, Audio, Video	1. Business Communication for Dummies by Jeffrey McQuay 2. Business Communication for Dummies by Jeffrey McQuay
		03/08 to 04/08	03/08 to 04/08	Module 2: Business Writing	1. Develop writing skills to compose a business letter and a business report. 2. Identify the structure of a business letter and a business report.	Written Test	Classroom Instruction	PowerPoint, Audio, Video	1. Business Communication for Dummies by Jeffrey McQuay 2. Business Communication for Dummies by Jeffrey McQuay
		05/08 to 06/08	05/08 to 06/08	Module 3: Business Presentation	1. Develop presentation skills to deliver a business presentation. 2. Identify the structure of a business presentation.	Written Test	Classroom Instruction	PowerPoint, Audio, Video	1. Business Communication for Dummies by Jeffrey McQuay 2. Business Communication for Dummies by Jeffrey McQuay
		07/08 to 08/08	07/08 to 08/08	Module 4: Business Negotiation	1. Understand the basic principles of business negotiation. 2. Identify the basic structure of a business negotiation.	Written Test	Classroom Instruction	PowerPoint, Audio, Video	1. Business Communication for Dummies by Jeffrey McQuay 2. Business Communication for Dummies by Jeffrey McQuay
SEMESTER III	WCOE 103 - Human Resource Management	01/08 to 02/08	01/08 to 02/08	Module 1: Introduction to HRM	1. Understand the importance of HRM in the organization. 2. Identify the basic structure of HRM.	Written Test	Classroom Instruction	PowerPoint, Audio, Video	1. HRM for Dummies by Jeffrey McQuay 2. HRM for Dummies by Jeffrey McQuay
		03/08 to 04/08	03/08 to 04/08	Module 2: Recruitment and Selection	1. Develop skills to identify the right candidate for a job. 2. Identify the basic structure of a recruitment and selection process.	Written Test	Classroom Instruction	PowerPoint, Audio, Video	1. HRM for Dummies by Jeffrey McQuay 2. HRM for Dummies by Jeffrey McQuay
		05/08 to 06/08	05/08 to 06/08	Module 3: Training and Development	1. Develop skills to design and deliver a training program. 2. Identify the basic structure of a training and development program.	Written Test	Classroom Instruction	PowerPoint, Audio, Video	1. HRM for Dummies by Jeffrey McQuay 2. HRM for Dummies by Jeffrey McQuay
		07/08 to 08/08	07/08 to 08/08	Module 4: Compensation and Benefits	1. Understand the basic principles of compensation and benefits. 2. Identify the basic structure of a compensation and benefits program.	Written Test	Classroom Instruction	PowerPoint, Audio, Video	1. HRM for Dummies by Jeffrey McQuay 2. HRM for Dummies by Jeffrey McQuay
SEMESTER IV	WCOE 104 - Project Management	01/08 to 02/08	01/08 to 02/08	Module 1: Introduction to Project Management	1. Understand the importance of project management in the organization. 2. Identify the basic structure of a project management process.	Written Test	Classroom Instruction	PowerPoint, Audio, Video	1. Project Management for Dummies by Jeffrey McQuay 2. Project Management for Dummies by Jeffrey McQuay
		03/08 to 04/08	03/08 to 04/08	Module 2: Project Planning	1. Develop skills to plan a project. 2. Identify the basic structure of a project planning process.	Written Test	Classroom Instruction	PowerPoint, Audio, Video	1. Project Management for Dummies by Jeffrey McQuay 2. Project Management for Dummies by Jeffrey McQuay
		05/08 to 06/08	05/08 to 06/08	Module 3: Project Execution	1. Develop skills to execute a project. 2. Identify the basic structure of a project execution process.	Written Test	Classroom Instruction	PowerPoint, Audio, Video	1. Project Management for Dummies by Jeffrey McQuay 2. Project Management for Dummies by Jeffrey McQuay
		07/08 to 08/08	07/08 to 08/08	Module 4: Project Closure	1. Develop skills to close a project. 2. Identify the basic structure of a project closure process.	Written Test	Classroom Instruction	PowerPoint, Audio, Video	1. Project Management for Dummies by Jeffrey McQuay 2. Project Management for Dummies by Jeffrey McQuay

START TIME	END TIME	SECTION TITLE / DETAILS
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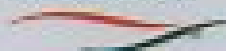
## DAY 2 – 5th May 2017 - HALL 4

### Hall 4 Day 2 (Congress Symposium – included in conference registration)

09:30	11:00	<b>Plenary Session In Hall 1</b>
11:00	12:00	<b>Philippine Academy for Dermatologic Surgery Foundation Inc (PADSFI) Session</b> <b>Chairperson: Teresito S. Ferraris MD (PADSFI President), Co-Chair: Jonathan A. Diaz</b> 1. Melasma and PIH: News and Review - <i>Evangelina Hardog</i> 2. Laser Management of Hyperpigmentation Problems... My Personal Approach - <i>Wendie Villarica - Mayano</i> 3. Non Invasive Periorbital Rejuvenation: How I Do It - <i>Clarissa K. Celisora</i> 4. Mid - cheek augmentation in people of brown skin: A South East Asian perspective - <i>Jonathan A. Diaz</i> 5. Trends in lip augmentation using dermal fillers - <i>Jennie Francisco-Diaz</i> 6. Toxins for body rejuvenation - <i>Marla Cristina Payat</i>
12:00	13:15	<b>Free paper 3</b> <b>Chairpersons: Kalleppa, Rejab Gagol, Anand Kumar Mittapalle</b> 1. Platelet-rich membrane and its advantage in healing of facial injuries - <i>Shubhangaeni Sharma</i> 2. Many modalities for xanthelasma treatment - <i>Mahesh Ural</i> 3. Outcome of Intra-operative Injected Platelet Rich Plasma Therapy During Follicular Unit Extraction Hair Transplant: A Prospective Randomized Study in Forty Patients - <i>Saruchi Gang</i> 4. Tattoos Are Beautiful, Reactions Are Ugly. High-frequency ultrasound imaging of tattoo reactions with histopathology as a comparative method - <i>Usha Naraindas Khemani</i> 5. Ethics and Aesthetics - can they be Partners in Practice - <i>K H Satyanarayana Rao</i> 6. Superiority of dutasteride over finasteride in hair regrowth and reversal of miniaturization in men with androgenetic alopecia – a randomized controlled study - <i>Sujit Shanshanwal</i> 7. Autologous Platelet Rich Fibrin in the treatment of chronic non healing leg ulcers - A study of 30 cases - <i>Amira Asfiya M Iqbal</i> 8. Micropigmentation: A versatile tool for dermatologist - <i>Amit Shivaji Kerure</i> 9. Dermatoscopic evaluation for correct diagnosis of melasma - a cross-sectional study - <i>Sujala S Anandhya</i>
13:15	14:00	<b>Lunch Break</b>
14:00	15:00	<b>Indonesian society</b> <b>Chair: Sri Lestari K. Setyaningsih, Co-Chair: R.W. Nanda Dewi</b> 1. Liposuction for axillary hyperhidrosis, my way - <i>Sri Lestari K. Setyaningsih</i> 2. Treatment of acne scars using combination of subcision and subablative RF - <i>R.W. Nanda Dewi</i> 3. Fetal and adipose mesenchymal stem cells derived secretome in skin Rejuvenation - <i>Indah Julianto</i> 4. O-Z rotation flap in nodular pigmented BCC - <i>Yulia Farida Yahya</i>

START TIME	END TIME	SECTION TITLE / DETAILS
		5. My way to correct the complication of nasal silicon injection - <i>Ago Harim</i>
		6. Long pulse Nd YAG Laser for treatment of nail diseases - <i>Natalia Mohyud</i>
15:00 (H4/D2/54)	16:30	<b>South Africa Session</b> Chairman: <i>Rajendra Kumar Singh</i> , Co-Chair: <i>Imraan Jhetam and Radhika Singh</i>
		1. Introduction to cosmetic dermatology – a South African perspective - <i>Rajendra Kumar Singh</i>
		2. Neonatal skin diseases - <i>Radhika Singh</i>
		3. Treatment of keloids using radiotherapy - <i>Imraan Jhetam</i>
		4. A new approach to scarring - <i>Unus Omer</i>
		5. Recent update on acne treatment - <i>Ayesha Omer</i>
		6. Tumescant anaesthetic and its uses - <i>Rajendra Kumar Singh</i>
		7. Laser Liposuction with video demonstration - <i>Rajendra Kumar Singh</i>
		8. Update on cellulite - <i>Susan Johnson</i>
		9. Why Topical Vitamin A is essential today? - <i>Denmand Fernandes</i>
16:30 (H5/D2/55)	17:30	<b>Free paper 4 Aesthetics</b> Chairpersons: <i>Hemanth Kumar Reddy, Pratap Dasiga, Samsundar S</i>
7 Minutes Each		1. Comparative study of Oral Tranexemic acid versus intradermal Tranexemic acid in Treatment of Melasma - <i>Harshavardhan Gowda H</i>
		2. Chemical peels in difficult indications - in pigmented skin types - <i>Rinky Kapoor</i>
		3. Treatment of Androgenetic Alopecia: Platelet Rich Plasma and Topical Minoxidil V/S Platelet Rich Plasma Alone V/S Minoxidil Alone – <i>Gaurav Doshi</i>
		4. Investigation of The Efficacy and Safety of QR678 Injections in Enhancing Human Hair Growth – A Pilot Study. - <i>Rinky Kapoor</i>
		5. Aquafilling -A novel technique for face and breast augmentation - <i>Vijay.L. Awani</i>
		6. Innovative techniques in intralesional cryo for keloids - <i>Byregowda T S</i>
		7. Non-Surgical Rhinoplasty: A Novel Approach - <i>Amal Shalbh</i>
		8. Mace sign- A definitive trichoscopic sign in trichotillomania - <i>Somipo Mukherjee</i>
		9. Novel use of variable pulsed Er: YAG for treatment of acne scar – A study on south Indian population - <i>Narmtha Chitra</i>
		10. Epidermal micrografting in Vitiligo - <i>Sandeep Agarwal</i>
		11. To study hair cycle dynamics in men with androgenetic alopecia - <i>AV Chitalla</i>
18:00		<i>Note: Coaches will leave the congress venue from 18:00 to 19:30hrs. Delegates are advised to proceed directly from the conference venue to the banquet. Kindly note, that rush-hour traffic may delay you inordinately if you go back to the hotel.</i>

12<sup>th</sup> World Congress of  
**Cosmetic  
Dermatology**  
2019 - 2020  
Joint meeting of IAD & ASD



**FACULTY**

**AGO HARLIM**



Preferred Partner



# World Congress of Cosmetic Dermatology 2017

12<sup>th</sup> World Congress of IACD & ACSICON 2017

15<sup>th</sup> National Conference of Association of Cutaneous Surgeons (India)

4<sup>th</sup> - 6<sup>th</sup> May 2017

Dr Babu Rajendra Prasad International Convention Center, GKVK, Bengaluru, India

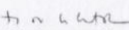
## Certificate


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
**Dr. Ago Harlim, Md, Mha, Phd**


has presented an e-poster titled **Dermatosurgery**




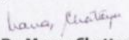
  
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Congress President


  
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Organizing Chair

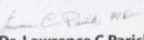
  
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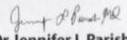
  
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Abstract Number : ABS-0166  
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Topic : My Way To Correct The Complication Of Silicone Nasal Injection

### Introduction and Aims:

Silicone liquid injection have been used for cosmetic for more than 40 years. Through the years many complications have been reported such as granulomatous, inflammatory responses, migration, and discoloration of the tissue. In 1992, the FDA has banned silicone liquid injection for cosmetic uses. However, silicone injection is still being practiced illegally. Because of economic issues and the rarity of medical grade silicone, various developing countries use industrial silicone, which results in even more complications. Patients with liquid silicone injected to their nose usually come to visit a doctor after experiencing complications such as granuloma, edema, redness with telangiectasia. Usually the patients want to remove the silicone and treat the complication. Unfortunately, silicone can not be removed and already absorbed to the skin.

### Materials and methods:

Some complications are difficult to treat. To treat it, the doctors have to put special design of nose implant, curettage to remove the silicone and granuloma, do some laser and steroid injection. Laser used for reducing the redness is long pulse NDYag 1064nm, 59 joule, frequency 1.0Hz, pulse 5ms, spot size 4mm. For the telangiectasia we use long pulse NDYag 1064nm, 180 joule, frequency 1.0Hz, pulse 15ms, spot size 2mm. Steroid injection using triamcinolon 10mg/ml for the granuloma and fibrosis.

**Laser Long Pulse Ndyag  
1064 nm , 59 joule**  
- Frequency 1.0 Hz  
- Pulse 5 ms  
- Spot size 4

**Granuloma/ Fibrosis (-)  
1064 nm, 180 joule**  
- Frequency 1.0 Hz  
- Pulse 15 ms  
- Spot size 2



Steroid injection with triamcinolon 10mg/ml

### Results:

Granuloma nodule will be smaller after curettation and steroid injection, The redness and telangiectasia become lighter after 5 time long pulse Nd Yang, and shape of the nasal become slim and straight up after implantation



### Conclusions:

To correct the complication of silicone nasal injection we need several device or ways such as operation, curettation, implant, laser and steroid injections.

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# My Way to Correct The Complication of Nasal Injection

Bengaluru, India 4-6 Mei 2017

## Introduction

Silicone injection has been used since 40 years ago and at that time, many problems occurred such as migration, inflammation, and granuloma. In 1992, FDA prohibited silicone injection for cosmetic use.<sup>1</sup> In addition to injection silicone may be introduced into our body or skin through food intake and cosmetic. Silicone has been widely used in daily cosmetics. Nowadays, due to technology advances, topical drugs can pass through skin barrier and can be penetrated into the skin, which has become a great concern as it may induce granuloma formation. There are relatively very few studies have been done on silicone concentration in normal skin.

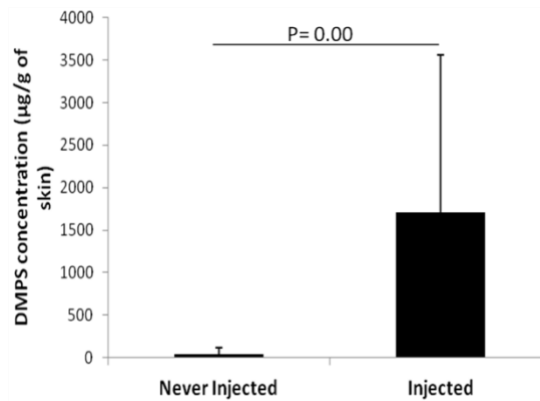
A study conducted by A Harlim in 2018 found that normal skin contained silicone. The study was performed by taking skin samples from normal subjects and those with face-lift procedure and subsequently compared those samples using the same criteria with the control group, which included skin samples of subjects that had received silicone injection and the study found granuloma formation. The study found an average amount of silicone level of  $44.07 \pm 75.86 \mu\text{g/g}$  in patients with normal skin; while in patients with granuloma, they found 38 times greater silicone level ( $1709.21 \pm 1851.72 \mu\text{g/g}$ ).<sup>2</sup>

## Silicone

Injectable-grade silicone for medical use has been manufactured widely since the element has been known for its stable and inert characteristics.<sup>5,6</sup> It includes the use of silicone oil, which has been utilized in the treatment of complicated retinal detachment and heavy silicone oil tamponade. The treatment seems to offer promising results, particularly on improving visual acuity as well as great results on some anatomical parameters; however, there are some concerns as it may cause several complications such as cataract, increased ocular pressure, heavy silicon oil emulsification and mild inflammatory reaction.<sup>7-9</sup>

Injectable-grade silicone has also been widely used in the form of silicone oil injection. Some studies have suggested that it may have an essential role in reducing the risk of developing diabetic foot ulcer due to its pressure-reducing properties; therefore, it can maintain plantar tissue thickness and alleviate symptoms of diabetic foot ulcer, which may be associated with foot biomechanics.<sup>10,13</sup>

Although it brings advantages, silicone injection may still develop some complications, either local or systemic complications. Local complications may include formation of palpable nodule surrounding injection site, arthralgia, fatigue, electrical neuropathy and electrical sensation;<sup>14</sup> while systemic complications may also occur in the form of lymphadenopathy, renal disease and hepatic disease. It indicates that the injected silicone can migrate from injection site to other organ causing local and systemic complications. An animal experimental study in mice model may explain the pathogenesis of such complications. The study has demonstrated that macrophage of skin tissue may engulf the injected silicone and the silicone may be distributed through lymphatic circulation and ultimately causing accumulation in lymph nodes, adrenal glands, kidney, liver and spleen as well as granuloma formation in the skin.<sup>15</sup> Complications due to silicone injection, particularly the granuloma formation may be dose-dependent. A study by A Harlim has demonstrated that granuloma formation could be developed when there is a large amount of silicone exposure as the study only found a low level of silicone without any granuloma formation in normal skin.<sup>2</sup>



**Figure 1.** The level of silicon (Si) in normal subjects who had never received silicone injection (never injected) and in subjects with granuloma who had received silicone injection (injected)

Cultural changes have been encouraging people to pursue their passion on beauty and youth; therefore, cosmetology has been rapidly growing. With technological advances, more mixed drug ingredients have been added to cosmetic products in order to beautify their customers. Thus, it may indirectly increase the use of topical cosmetics that usually contain silicone; therefore, it will lead to increase silicone uptake to the skin. It has raised a concern that prolonged and continuous use of cosmetics will cause granuloma formation and other chronic inflammatory effects.

### **Dietary intake and silicon**

Aside from medical use, silicon has also been used in food industry, cosmetics and pharmaceutical industries. Our data shows that the silicon levels in gastrointestinal medications (e.g. antacids), mineral water and soda drinks are 44.1, 25.6, 2.91 µg/g, respectively. It can be said that there are many routes for administering silicon into our body. The average daily intake of silicon for European and North American populations is 20-50 mg/day. In China and India, the daily intake of silicon is larger that may reach as many as 140-200 mg/day, in which wheats, fruits and vegetables are the greatest producers.<sup>3</sup>

A research institution of healthy aging and nutrition in U.K. has recently reported a strong correlation between silicon in dietary intake and the health of bone and connective tissue. Therefore, it can be assumed that the correlation is associated with collagen synthesis and/or stabilization of mineral matrix, i.e. silicone intake may affect bone density.<sup>4</sup>

Another study, which is an animal experimental study, has demonstrated that there is no evidence of silicon accumulation in silicon consumption. Silicon can be eliminated through digestion process and can be found feces (93-97%), urine (0.001-0.22%) and expired air (0.01-0.02%).<sup>5</sup> It indicates that silicon is a stable element and at certain degree it can be resistant to digestive enzymes including gastric acid; therefore, it seems that silicon is not accumulated in the gastrointestinal system.

### **Silicon in Cosmetics**

Beauty products for face, hair, and cosmetics may have high silicon content, in which it will be accumulated in the skin tissue. When a topical beauty product containing silicon is applied to the skin, the elastometric particles of silicon will absorb various liquids including emollient and oil; therefore, silicon is used in skin care product as vehicle (carrier) of active ingredient for the skin or as oil control product of the skin.<sup>6,7</sup>

- Types of silicone that are commonly used in cosmetic products
- Dimethicone – clear, inert, liquid solubility depends on the length of polymer backbone ranging in thickness from watery consistency to thick.
- Dimethicone Copolyol – silicone that contains an –OH group; therefore it is more water soluble resulting in easier incorporation into water-based formulations and also reduces the “slip effect” of the silicone



- Cyclomethicone – the shortest cyclic molecule, which has many similarities with dimethicone except it can evaporate; while dimethicone can not.
- Cyclo-Dimethicone – a combination of dimethicone dan cyclomethicones.

The great use of silicones in cosmetic product may increase the risk of accumulation of the substance in our body, particularly in facial skin. No clear evidence has been found on the bioavailability and concentration of accumulated silicone in topical uses.

**Granuloma: Definition**

Granuloma is a foreign body reaction against foreign substances that enter the skin. Granuloma occurs due to continuous or chronic inflammation against foreign substances. Silicone is a foreign substance in the body, which will be encapsulated by the body. Datia cells (giant cells) will encapsulate silicone material and therefore; inflammatory mediators can not perform phagocytosis, which result in continuous inflammation and causes side effect. The encapsulated material has poor vascularization; therefore it may potentially induce infections.<sup>8</sup>

**Classification and Etiology**

There are many kinds of granuloma classification; however, the common classifications are those which have been adjusted to the etiologies.<sup>9,10</sup> Granuloma formation may occur due to various factors such as biologic, chemical and physical irritative agents.<sup>9</sup> Classification based on clinical, ethiological, histopathological features can be categorized further into infection, vasculitis, immunological aberration, leukocyte oxidation deficiency, hypersensitivity, chemicals or neoplasma.<sup>11,12</sup> Table 2.2 presents classification of granuloma based on etiology.<sup>10</sup>

**Table 1** Classification of granulomatous disorders (Cited from: James DG, Wiliams WL).<sup>10</sup>

=====	
=====	
Infections	Immunological aberrasion
=====	=====
=====	
<b>Fungi</b>	Sarcoidosis
Histoplasma	Crohn’s disease
Coccidioides	Phimary billiary cirrhoris
Blastomyces	Glant cell arteritis
Sporothrix	Peyronie’s disease
Aspergillus	Hypogammagiobulinaemia
Cryptococcus	Langerhans’ granulomatosis
	Hepatic granulomatous disease
<b>Protozoa</b>	
Interferon-8-receptor deficiency	Immune complex disease
Toxoplasma	
Leishmania	
<b>Metazoa</b>	<b>Vasculitic granulomatosis</b>
Toxocara	Wegener’s
Schistosoma	Necrotizing sarcoidal
	Churg-Strauss
	Lymphomatoid
	Polyarteritis nodosa
<b>Spiriochaetes</b>	Bronchocentric
<i>T.Pailidum</i>	Systemic lupus
<i>T.carateum</i>	
<i>T.pertunue</i>	
	<b>Leukocyte cocidase defect</b>
<b>Mycobacteria</b>	Chonic granulomatous

*M. tuberculosis*  
*M. leprae*  
*M. kansasii*  
*M. marinum*  
*M. avian*  
*BOG vaccine*

### **Bacteria**

Brucella  
Yersinia

### **Other infections**

Cat-scratch  
Lymphogranuloma

### **Neoplasia**

Carcinoma  
Reticulosis  
Pinealoma  
Dysgerminoma  
Seminoma  
Reticulum cell sarcoma  
Reticulum cell sarcoma  
Malignant nasal granuloma

### **Chemicals**

Beryllium  
Zirconium  
Silica  
Starch

disease of childhood

### **Hypersensitivity pneumonitis**

Farmers' lung  
Bird fanciers'  
Mushroom workers'  
Suberosis (cork dust)  
Bagassosis  
Marple bark strippers'  
Paprika splitters'  
Coffee bean  
Spatlese lung

### **Other**

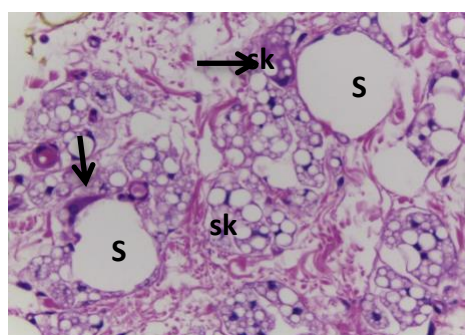
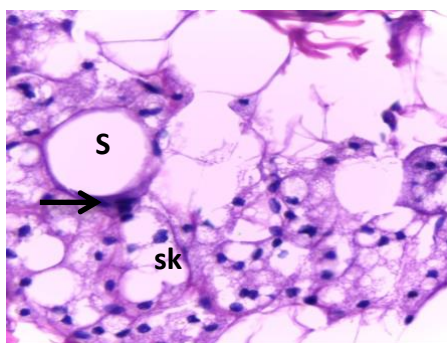
Fibrosing alveolitis  
Whipple's disease  
Pyrexia of unknown origin  
Radiotherapy  
Cancer chemotherapy  
Panniculitis  
Chalazion  
Sebaceous cyst  
Dermoid  
Sea urchin spine injury  
Tattoo  
Malakoplakia  
Blau's syndrome

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## **Silicone granuloma**

Silicone granuloma is a foreign-body granuloma, which is characterized by the presence of multinuclear giant cells and macrophages surrounded by lymphocytes and infiltrates of neutrophils. The granulomatous histological lesion caused by silicone varies depending on the type of silicone.

Tissue reactions to silicone gel or liquids is characterized by the formation of silicone granuloma with cystic space containing foreign body.<sup>13</sup> The irregular surface of silicone can not be phagocytosed completely by macrophage. Giant cells are formed due to "frustrated" macrophages. Microspheres in the size of less than 15 microns will be phagocytosed and transferred to lymph node; while those with big size and non-absorbable polymer will be encapsulated by fibrotic tissue.<sup>14</sup>



**Figure 2.** Results of histopathological examination (HE 400x magnification) in one of study subject. There is a datia cell (arrow), which is phagocytosing silicone (S) and is trying to destruct it into smaller pieces (sk).<sup>1</sup>

Datia cell is essential in tissue response to silicone as seen in figure 2, in which the datia cell is phagocytosing the silicone. It appears that although the datia cell can not eliminate the silicone, but it would produce fragmented silicone into smaller pieces. Within a month, the silicone will be in the size of 20-100 microns.<sup>15</sup> However, it still can not be completely phagocytosed and ultimately it will be encapsulated by fibrotic tissue.

In general, silicone granuloma can be categorized into 3 phases according to the natural history of our immune response, which are mild inflammatory phase, i.e. stage 1; inflammation with datia cells, i.e. stage 2, 3, 4, 5 and tolerance phase with fibrosis, i.e. stage 6 and 7.

According to A Harlim in 2018, histopathological features of silicone granuloma can be categorized into 7 stages, which are:<sup>15</sup>

Stadium 1, Moderate reaction with a few inflammatory cells

Stadium 2, Inflammatory cells with one or two datia cell(s)

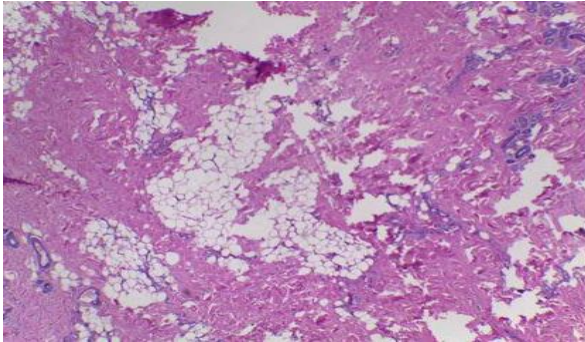
Stadium 3, Inflammatory cells with more than two datia cells and < 50% fibrotic area

Stadium 4, Inflammatory cells with more than two datia cells and > 50% fibrotic area

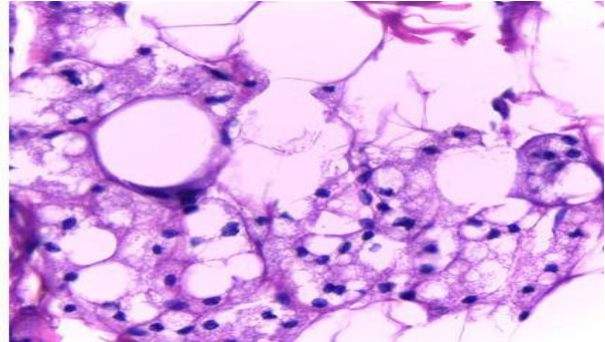
Stadium 5, Inflammatory cells with one datia cell and > 50% fibrotic area

Stadium 6, < 50% fibrotic area with no datia cell

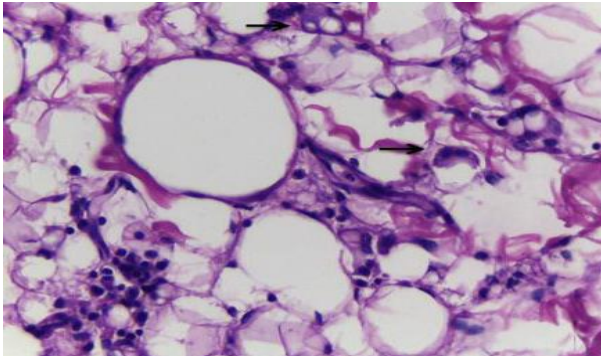
Stadium 7, > 50% fibrotic area with no datia cell



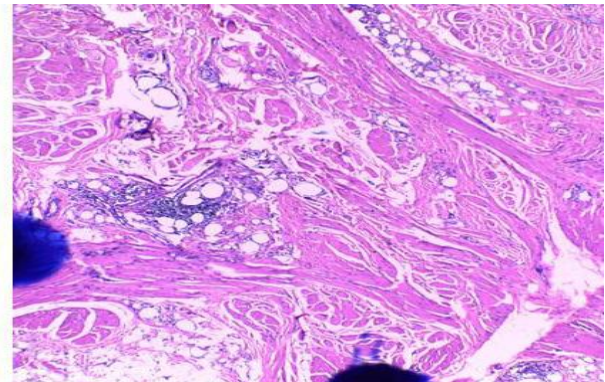
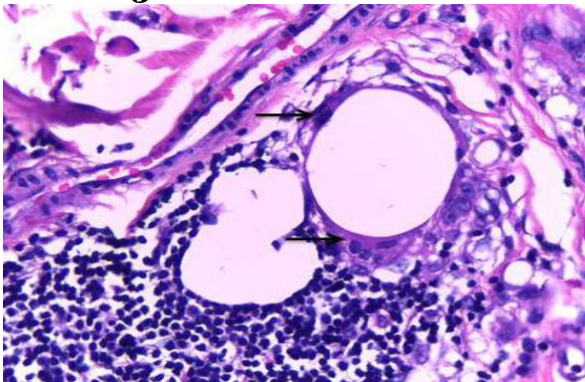
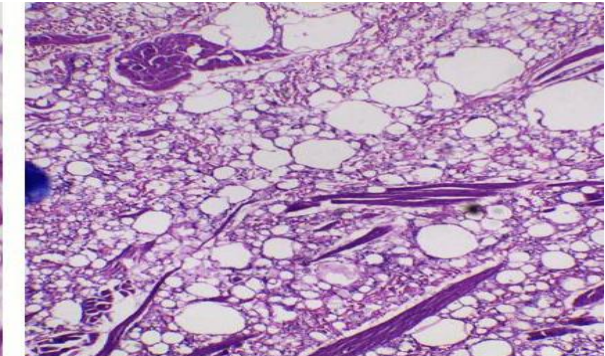
**Stadium 1**



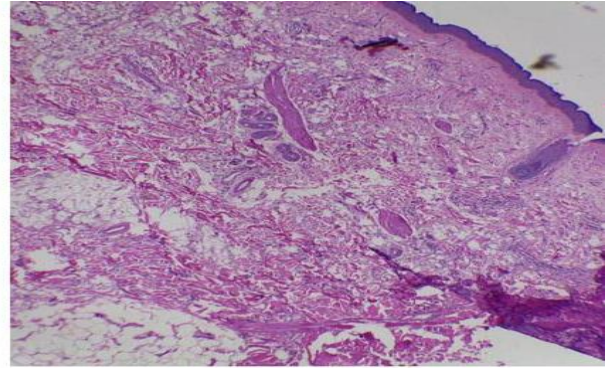
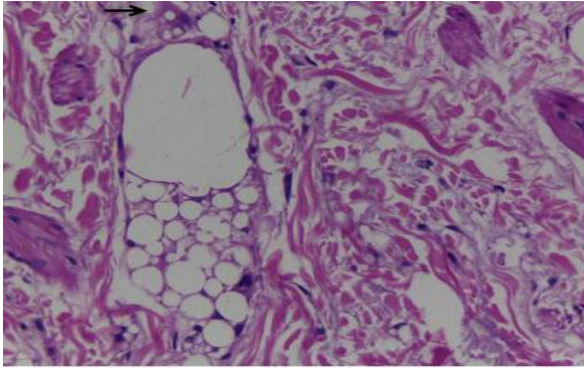
**Stadium 2**



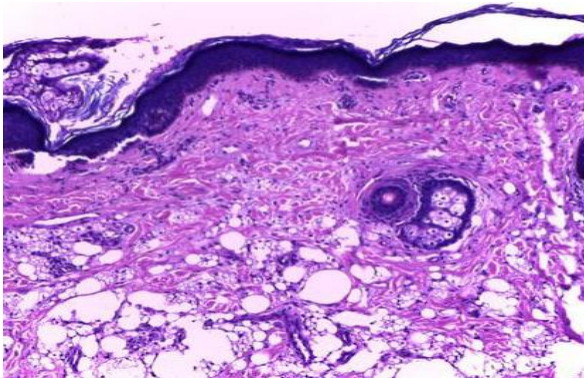
**Stadium 3**



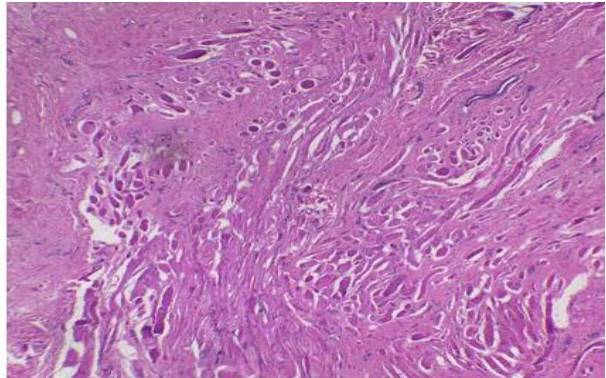
Stadium 4



Stadium 5



Stadium 6



Stadium 7

**Figure 3.** Stadium 1, Moderate reaction with a few inflammatory cells. Stadium 2, Inflammatory cells with one or two datia cell(s). Stadium 3, Inflammatory cells with more than two datia cells and < 50% fibrotic area. Stadium 4, Inflammatory cells with more than two datia cells and > 50% fibrotic area. Stadium 5, Inflammatory cells with one datia cell and > 50% fibrotic area. Stadium 6, < 50% fibrotic area with no datia cell. Stadium 7, > 50% fibrotic area with no datia cell.

## Diagnosis

Granuloma is a form of localized nodular inflammation, which is found in tissues.<sup>9</sup> On examination, there is a tumor-like mass or node of granulation tissue with active fibroblast growth and capillaries that contain epithelial-like macrophages surrounded by mononuclear cells, lymphocytes, and sometime multinucleated datia cells present at the central core of granuloma.<sup>16</sup>

On clinical point of view, silicone granuloma is characterized by the presence of complications of silicone. There are usually granuloma nodes, migrating silicone, wider nose and signs of inflammation such as redness and swelling depending on the stage.



**Figure 4.** Granuloma due to nasal silicone injection. On the photograph, there is granuloma node, migrating silicone, the nose becomes wider and signs of inflammation such as edema and redness.

### **Management**

The management of silicone-induced granuloma is often difficult due to migrating silicone and some of the silicone penetrates into the skin reaching epidermis. In general, the management of granuloma can be categorized into 2, i.e. surgical and pharmacological treatment. The management of nasal silicone granuloma is adjusted for the occurring complications. We must remove granuloma, which is under the skin; afterwards, we perform excision of excessive skin or implant insertion creating firmer skin and cosmetically more attractive. Remaining fibrosis or granuloma can be treated using steroid injection and laser therapy is performed for redness.

### **Recommendation for surgical care**

Granuloma formation occurs due to the presence of foreign body. Skin granuloma will cause cosmetic problem; and therefore, it should be removed.

### **Preoperative preparation**

The preoperative preparation is similar to all kinds of skin surgery. A consultation prior to surgical procedure is necessary so that the doctor can perform both physical and psychological evaluation for the candidate. The patient should be informed about surgical procedure and the result may not be perfect as clean silicone injection can never be performed and there is a possibility of swelling. Patients with extreme high expectation will file their complaints in the future.

During the consultation, we must find out about coagulation disorder, either primary or secondary, either due to medication of pharmacological treatment or supplementation. The patients are advised to avoid food or medication that may prolong the bleeding time within one or 2 weeks prior to the procedure such as anticoagulants, aspirin, ginseng, garlic, cod liver oil, anti-cholesterol agent, vitamin E, warfarin, and ginko biloba.

Curettage procedure of nasal silicone granuloma is similar to skin graft procedure, in which the covering skin must be viable. On curettage, the skin will be thinner and it can be necrotic if there is poor vascularization. Other issues that should come into our consideration are alcohol intake, smoking habit, metabolic disorder and poor nutrition. Blood pressure and diabetes mellitus must be well-controlled.<sup>17,18,19</sup>

### **Informed consent**

When a skin surgeon decides to perform a surgical procedure, both doctor and patient must consequently understand the impact, risk and advantages of the procedure. First, the doctor needs to explain the diagnosis and the procedure that will be performed. Treatment of nasal silicone injection is a combination of medical therapy and cosmetic procedure because when it is left untreated; there will be changes such as migration, granuloma and continuous inflammation. The risks and the advantages of the procedure should be emphasized. Moreover, the procedure during the surgery and the expected result after surgery need to be explained. Possible risk that may develop such as infection and its prevention including the use of antibiotics must also be explained. Patients must know other probable risks such as bleeding, crooked nose, wound scar that probably occurs, asymmetrical nostrils, an implant impression on the skin, granuloma or fibrosis that can not be clean up, persistent redness of skin color and other modality of treatment needs to be carried out after the surgical procedure. It should also be explained that the results probably may be imperfect; particularly for patients with unrealistic wish. Results of

discussion and patient's consent are written on an informed consent form, which is subsequently signed by the doctor and patient.

### **Technique and procedure**

Every granuloma in the skin that causes cosmetic problem must be removed. Granuloma at inflammatory phase must also be removed to prevent the extension of inflammation. Local or general anesthesia could be use for procedures of skin excision, granuloma curettage or installation of nasal implant. Instruments that must be prepared included minor surgery set, which can be equipped with curettage kit for cases that need curettage.

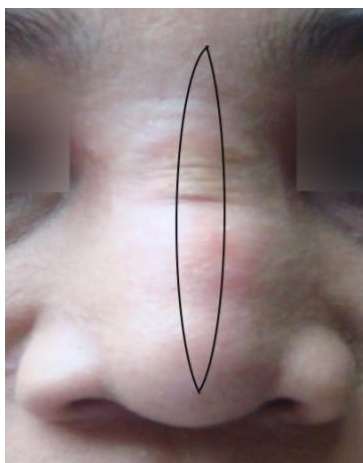
### **Preoperative Planning**

The management of silicone-induced granuloma depends on the affected area; however, basically a doctor will first make a design planning. Next, the doctor will perform procedures according to the design or images and following the plan that has been discussed with the patient.

Depending on the occurring complication, we evaluate whether we need to remove excessive skin from the nasal columella or should only perform curettage and subsequently install a nasal implant.

Mark the area that will be excised and the protruding granuloma on the dorsal of the nose; therefore, during the surgery we emphasizes on the location where the curettage will take place. If we plan to place a solid nasal implant, then we need to make a midline to ensure the implant stays straight when the swelling occurs due to anesthetic drugs.

Depending on the problem, when nasal dorsum has become wider along with inflammation and damaged skin, an elliptical vertical excision can be performed on nasal dorsum.



**Figure 5.** Elliptical excision of granuloma on the nasal skin

During silicone injection, it is common to have wider and decending skin at the area of nasal columella due to migration of silicone injection, which always run downward from the nose; therefore, a skin excision can be performed at lateral and dorsal area of the nasal columella.



**Figure 6.** Design of excision procedure to remove excessive skin at columella area

## Technique

After we have planned the management to overcome nasal problems, we subsequently transfer the plan into preoperative design images, and subsequently perform an incision or excision following the plan.

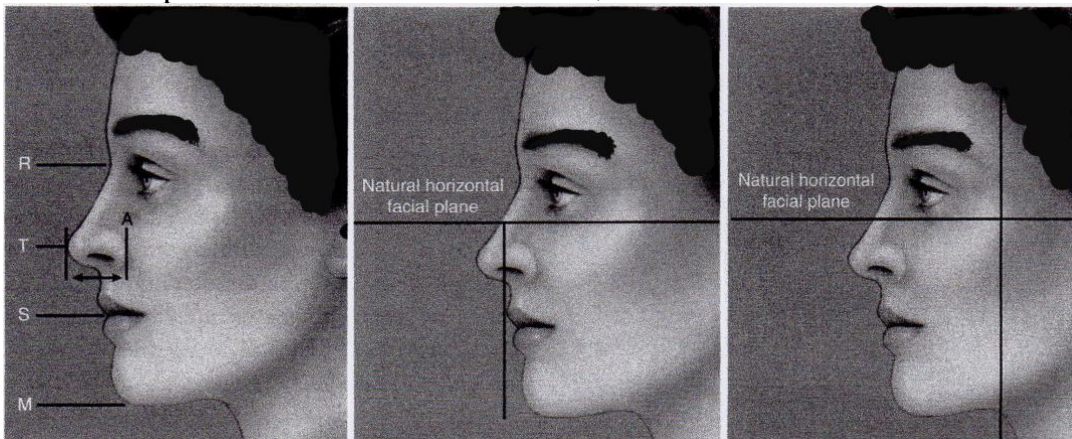
## Design of nasal implant

In some cases that require implants, the nasal implant is first carved before an excision is performed. Solid implant that has been commonly used is the L-shaped solid implant; however, other kinds of solid implant can also be used.

In making an implant, there are some guidelines on facial aesthetics and architectural balance that should be considered.

The face can be divided into 3 zones with identical width. The first includes a horizontal line from the hair line to the eyebrow; the second horizontal line is from the eyebrow to the nasal base and menton ; while the third horizontal line is the line from the nasal base to the end border of the chin

The association between the lips and chin should be evaluated. The chin projection is determined by a vertical line drawn from a point of one and a half ideal length of the nose to the part of vermillion of the upper lip. The lower lip can not be more than 2 mm posterior to this line. The position of chin varies extremely depending on sex. In women, the position is slightly posterior to the lower lips; while in men the position of the chin is in line.<sup>20,21</sup>



**Figure 7.** Guidelines on measuring facial beauty and architectural balance

The implant is carved or made prior to anesthetic procedure following the guidelines of architectural balance, problems of nasal silicone granuloma as well as the patient's preferences. For nasal silicone granuloma cases, L-shaped nasal solid implant is used and part of the nasal bridge is shaved so that it becomes slender since patients with granuloma due to silicone injection usually have wider nose and they want the nose become slender. Figure 3.

The height or the length of the implant is the midline border between eye and eyebrow up to the nose. The crus of the implant must be measured following the base of columella to the nose. Usually, the crus are made straight so that it can elevate the decending skin caused by silicone injection.



**Figure 8.** L-shaped solid silicone implant, the edge is shaved so it becomes slender.



**Figure 9.** Patient with silicone injection usually have wider columella area since liquid silicone will migrate downward due to gravity. Therefore, we have to remove the excessive skin of the lateral and the dorsal columella and place the implant to create a straight nose.

Incision is always made on a hidden area and follows the contour of Langer's line. The excision is made following preoperative design image, which is alliptical excision on nasal dorsum (figure 5) the procedure is generally performed when the condition is very severe with inflammation and the skin is wrinkle and extremely wider. The risks of the procedure are the formation of thin vertical scar line on the nasal dorsum and dog-ear phenomenon at the end of excision. An accurate calculation before surgery is essential. It is suggested that the skin removal should not be too wide to prevent dog-ear phenomenon or we can place a nasal implant so that it seems firms and create a better look. Excision can also be made on the area adjacent to excision cut in order to reduce granuloma around the lateral nose. The skin superior to the granuloma must be thick enough to maintain vascularization and viable skin. Many patients do not want any lengthy scar along their nose; therefore, the management of nasal silicone granuloma only includes curettage, placement of implant and excision of excessive skin at columella area.

After the patient received anesthetics using lidocaine or xylocaine without adrenalin, we perform a skin excision at the columella area and remove the excessive skin on the lateral and dorsal columella; afterwards, we perform undermining procedure inferior to the granuloma using a curved clamp starting from the nasal dorsum area to the nasal bridge near the glabella and lateral of nose depending on the occurring problem. Next, curettage is performed to remove the granuloma. The skin superior to it must be thick enough and well-vascularized. In cases with remaining granuloma with thick fibrosis and those with difficulty in curettage, other modalities should be performed after surgical recovery period such as steroid injection.



To create a good-shaped nose, we remove the excessive skin at the columella area and at the nasal bridge, we can place an implant so that the skin is firmer and the shape is cosmetically better. Nasal silicone implant is placed under the nasal skin at the curettage area, which has been previously occupied by silicone granuloma.

We can perform curettage to remove silicone and granuloma. In order to create a better superior nasal tip so that the nose seems straighter, we have two choices. The first choice is that we can place the implant under the skin and at the area, the curettage is performed; or we can put sutures at the lateral area of superior tip of the nose from lateral columella with opposite direction as presented in the following video.

Illustration of surgical treatment for nasal granuloma (video 1)

### **Postoperative Management**

1. Use nasal splint or gauze for a week to prevent splint displacement
2. Prescribing antibiotics for 5 to 7 days
3. Prescribing analgetics every 4 to 6 hours as necessary
4. Prescribing anti-inflammatory drugs for 5 to 7 days.
5. Normal saline solution for the nose to overcome post-surgical nasal congestion
6. To reduce swelling, apply cold compress to periorbital within the first 48 hours
7. When sleeping, the patient should keep the head elevated approximately 45 degree
8. If there is a seroma, we can remove it by suctioning using syringe during the follow-up visit.
9. Avoid any trauma for 2 weeks
10. Remove the stitches on day 10 to day 14.
11. Have a normal diet, but avoid foods that cause excess lip movement such as apples, corn on the cob for 2 weeks after surgery.

### **Adjunctive Therapy to Overcome Other Complications**

The principle of therapy in managing patients with granuloma due to silicone injection is preventing the development of inflammation as it will cause extension of damage.

Evacuation of silicone-induced granuloma should be performed since the liquid silicone in the tissue is persistent and will continuously induce immune response. Although the granuloma has been excised, but the remaining silicone, which has migrated to all direction and has been absorbed in the skin, can not be removed and therefore, it may cause recurrent granuloma. The remaining inflammation, both granuloma and fibrosis, requires further treatment.

For granuloma or fibrosis that can not be removed by surgical procedure, other modalities are required to treat the remaining fibrosis and inflammation that can still be seen on the skin, i.e. skin redness and teleangiectasis.

### **Fibrosis and remaining granuloma**

Some case reports suggest that to treat silicone-induced granuloma, intralesion injection can be used as well as topical treatment of PImetacrolimus, which is applied 2 times daily for 3 months. Topical imiquimod can be used for 8 weeks as well as minoxidil, allopurinol and oral prednisone at the dose of 30 mg/day.<sup>23,24</sup> Results of those treatment have not been satisfying although intralesion injection of triamcinolone is more significant for treating the occurring inflammation.<sup>25</sup>

Granuloma and remaining fibrosis may also be treated with subdermal injection of triamcinolone acetonide at the dose of 10 mg /ml or a combination of triamcinolone

acetamide and 5-Fluorouracil. Steroid injection can be performed at the earliest within 2 weeks after wound closure.

The injection is performed once or twice weekly as many as 5 to 7 times. The dose depends on the amount of remaining granuloma and fibrosis and usually it is at dose of 0.2 to 0.4 cc per injection.

Etanercept, which work on TNF- $\alpha$  receptor and Fc - IgG1 binding, has been reported providing good result for silicone granuloma.<sup>26,27,28</sup> The administration of this drug at the dose of 50 mg twice weekly or 25 mg of subcutaneous injection 2 times a week has offered relatively satisfying results.<sup>28</sup>

### **Redness on Nasal Skin**

When the silicone has entered into the skin, it can cause granuloma due to chronic inflammation. Although the granuloma has been removed, but the remaining inflammation e.g. redness on skin still exists. One of them is redness due to neovascularization such as teleangiectasis due to silicone block in the skin

Nasal redness and teleangiectasis can be reduced using laser treatment. To utilize laser for treatment, we need basic knowledge about the use of laser.

There are three characteristic properties of laser light: monochromatic light: the light contains only a single wave length, which is determined by the magnitude of released energy. The light has coherent characteristic and the photon move regularly as it has the same wavefront one another.

The light is highly directional. A laser light has a very tight beam that is dense, strong and concentrated. The three abovementioned characteristics can be achieved since there is a process of stimulated emission.

A light is part of the spectrum of electro-magnetic radiation with an energy known as photon; while the molecule that absorbs the light is called chromophore. The energy is transferred from photon entering into chromophore in the skin. After the energy is absorbed, the light can initiate photochemical reaction, heat up the tissue to the state of coagulation or evaporation and can destroy or detonate tissue structure through extremely rapid localized heating

Laser is an instrument that produces light beam with certain wave length or color that is very parallel and coherent. The light wave length is absorbed maximally by the component of the treated skin. When the absorption characteristics of the target tissue accurately meet the most ideal wave length, it will develop maximum specificity of laser to tissue interaction.

The mechanism of action of laser is consistent with specific chromophore with certain wave length. There are 3 major chromophore in the body, which are hemoglobin, pigment and water. For redness and teleangiectasia cases, we use laser, which mostly work on hemoglobin. The wave length of laser must be adjusted to the existing problem. Laser light enter the target area on the skin and subsequently the light is absorbed by specific blood vessel in the skin causing damage on the target blood vessel that contain hemoglobin without injuring the surrounding tissue. We need basic knowledge to perform safer use of laser.<sup>29,30</sup>

In addition to chromophore, we also need to know about **Thermal relaxation time (TRT)**. TRT is the time it takes for a target substance to cool half the temperature needed for heating the target without increasing the temperature of surrounding

tissue. In order to perform safe procedure, the fluence of a laser pulse must be high enough to heat the target and the pulse duration must be shorter than the TRT of the target. Each target has its own TRT. For blood vessel, which has TRT up to micro seconds, we need long pulse duration; therefore, we should use the long-pulse ND Yag laser instead of the QS ND yag laser, which only has pulse duration of nano seconds. QS Nd Yag is usually used for tattoo removal

**Table2. Thermal relaxation time**

Target	Thermal Time	Relaxation
200-300 um hair follicle	40-100 msec	
100 um PWS blood vessel	5 msec	
20-50 um of epidermis	0,2-1 msec	
7 um erythrocytes	20 usec	
1 um melanosome	1 usec	
0.1 um tatoo particle	10 nsec	

Laser works based on the selective photothermolysis principle. In this case, it can be used for hemoglobin to treat redness due to the silicone injection. Some laser that can also be used are vascular laser such as pulse day laser or long pulse NdYag.<sup>31,32</sup>

A previous study shows that pulse day laser (PDL) with a wavelength of 595 nm can be used for vascular disorder such as angioma, port wine stain, rosacea or other vascular disorders at the dose of 6 to 8 J /cm<sup>2</sup> every 8 weeks. To prevent side effect, cooling is always performed before laser procedure; some instruments have already had a cryo cooler. The side effects of post-PDL laser treatment are bruising, crust, post-inflammatory hyperpigmentation, particularly for skin type 3 to 6 according to Fitzpatrick classification.<sup>31</sup>

Long-pulse NdYag laser with a wave length of 1064 nm is also good for treatment of vascular disorder. For deeper vascular disorders and those abnormalities in patients with dark skin types such as the Fitzpatrick skin type 3 to 6, the instrument will give greater advantages because the 1064-nm wave length is usually used for pigment chromophore. In contrast, the instrument also has lower safety limit as poor cooling process can often burn the skin. Side effects of long-pulse NdYag laser are bullae, crust, post-inflammatory hyperpigmentation and scar.<sup>32</sup>

In utilizing the long-pulse NdYag laser, we need to set the pulse duration. In silicone-induced disorders, there will be redness on the skin and one of them is teleangiectasis that requires higher dose, but lower pulse duration.



**Figure 10.** Illustration of a patient's skin due to complication of silicone injection on nasal skin; there is erythematous skin and among them there is a teleangiectasia.

In erythematous skin cases, the long-pulse NdYag laser with a wave length of 1064 nm, at dose of approximately 100 J, spot size of 4, and pulse duration of 10ms can be used. For teleangiectasis, the power is approximately of 180 J, a spot size of 2, and pulse duration of 5ms. Sufficient cooling before and after laser procedure should be done, either by using ice pack, air cooling, cryo or other methods. The laser treatment should be started at a low dose and the dose is increased gradually for each visit until a change can be observed. The target does not diminish instantly, the color does not always change rapidly, sometimes it only becomes paler.

### **Pitfalls and the Management**

For necrotic skin, skin excision on nasal dorsum is usually done, which is followed by curettage of surrounding area. We usually clean up the necrotic area and performed wound care, open wound healing enhanced with topical medication that can induce granulation, laser diode, PRP or others. In general, the wound will heal in 2 to 3 months.

Excessive granuloma or extensive fibrotic area occurs due to hard necrotic skin, which creates difficulty in curettage. We can repeat the curettage procedure after a few months, which is followed by steroid injection. For less good-looking nose, excision procedure of the remaining skin can be repeated.

The skin can be burnt due to laser treatment for removing redness or teleangiectasis for nasal area. Sufficient cooling before and after laser procedure should be done immediately Sometime a strong topical steroid such as clobetasone propionate can be applied directly onto the skin after the laser procedure

### **Conclusion**

Treatment for silicone-induced granuloma is not easy because the silicone that enters the skin can migrate and a lot of modalities is required to treat complications. Although the use of silicone injection has been prohibited, but we still need to be cautious because there are many cosmetics contain silicone, especially with technological advances that can make the silicone readily absorbed by the skin.

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