

2nd Edition

A Handbook of **VITILIGO & Color Atlas**



SK Punshi

Foreword
James J Nordlund



**A Handbook of
Vitiligo and Color Atlas**

Jaypee Brothers

Author of

- ❑ Vitiligo Diagnosis and Treatment (*Kothari Book Dept—1971*)
- ❑ Vitiligo and Placental Extract
- ❑ Vitiligo (*Quarterly Medical Review—Raptokos and Brett Co. Ltd.: Mumbai—1979*)
- ❑ Recent Advances in Vitiligo (*Quarterly Medical Review—Raptokos and Brett Co. Ltd.: Mumbai—1999*)
- ❑ Handbook of Leprosy
- ❑ A Handbook of Scabbies
- ❑ Dermatology for General Practitioners
- ❑ Placental Extract Therapy in Vitiligo (*Ch-Growth Disorders of Pigment: Churchill Livingstone FE—1996; Eds. Bhanu Iyanger and Avantika Singh*)
- ❑ Incidence of Vitiligo (*Ch-Quoted in Vitiligo and Other Hypomelanosis of Hair and Skin: Plenum Medical Company, New York, London; Eds. Jean Paul Ortanne, David B Mosher, Thomas Fitzpatrick*)
- ❑ He has 125 papers/articles in various National, International and regional journals.

Conferences

Attended most of the National and International conferences including:

- ❑ International symposium on pigmentary disorders
- ❑ 12th World Leprosy Congress
- ❑ First World Congress on Sexology
- ❑ VIIth International Congress of Dermatology

Guest speaker

All India Seminar on Vitiligo

- ❑ Research Institute, Hyderabad
- ❑ Kothari Research Institute, Kolkata
- ❑ Bose Institute, Kolkata

Radio and TV

- ❑ Dr Punshi talked on *Leukoderma and Society* on All India Nagpur Station
- ❑ He was also interviewed by Bombay Doordarshan in the afternoon National Hindi Programme on the subject of *Leukoderma and Vitiligo* about his research on placental extract in Vitiligo

A Handbook of Vitiligo and Color Atlas

Second Edition

SK Punshi MBBS DDV FIMS FDS

Senior Consultant Dermatologist
Rajkamal Chowk, Amravati
Maharashtra, India

Foreword

James J Nordlund



The Health Sciences Publisher

New Delhi | London | Panama



Jaypee Brothers Medical Publishers (P) Ltd

Headquarters

Jaypee Brothers Medical Publishers (P) Ltd
4838/24, Ansari Road, Daryaganj
New Delhi 110 002, India
Phone: +91-11-43574357
Fax: +91-11-43574314
Email: jaypee@jaypeebrothers.com

Overseas Offices

J.P. Medical Ltd
83 Victoria Street, London
SW1H 0HW (UK)
Phone: +44 20 3170 8910
Fax: +44 (0)20 3008 6180
Email: info@jpmedpub.com

Jaypee Brothers Medical Publishers (P) Ltd
17/1-B Babar Road, Block-B, Shaymali
Mohammadpur, Dhaka-1207
Bangladesh
Mobile: +08801912003485
Email: jaypeedhaka@gmail.com

Website: www.jaypeebrothers.com
Website: www.jaypeedigital.com

© 2017, Jaypee Brothers Medical Publishers

The views and opinions expressed in this book are solely those of the original contributor(s)/author(s) and do not necessarily represent those of editor(s) of the book.

All rights reserved. No part of this publication may be reproduced, stored or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission in writing of the publishers.

All brand names and product names used in this book are trade names, service marks, trademarks or registered trademarks of their respective owners. The publisher is not associated with any product or vendor mentioned in this book.

Medical knowledge and practice change constantly. This book is designed to provide accurate, authoritative information about the subject matter in question. However, readers are advised to check the most current information available on procedures included and check information from the manufacturer of each product to be administered, to verify the recommended dose, formula, method and duration of administration, adverse effects and contraindications. It is the responsibility of the practitioner to take all appropriate safety precautions. Neither the publisher nor the author(s)/editor(s) assume any liability for any injury and/or damage to persons or property arising from or related to use of material in this book.

This book is sold on the understanding that the publisher is not engaged in providing professional medical services. If such advice or services are required, the services of a competent medical professional should be sought.

Every effort has been made where necessary to contact holders of copyright to obtain permission to reproduce copyright material. If any have been inadvertently overlooked, the publisher will be pleased to make the necessary arrangements at the first opportunity.

Inquiries for bulk sales may be solicited at: jaypee@jaypeebrothers.com

A Handbook of Vitiligo and Color Atlas

First Edition: 2003

Second Edition: **2017**

ISBN: 978-93-5270-150-6

Printed at

Jaypee-Highlights Medical Publishers Inc
City of Knowledge, Bld. 235, 2nd Floor, Clayton
Panama City, Panama
Phone: +1 507-301-0496
Fax: +1 507-301-0499
Email: cservice@jphmedical.com

Jaypee Brothers Medical Publishers (P) Ltd
Bhotahity, Kathmandu
Nepal
Phone: +977-9741283608
Email: kathmandu@jaypeebrothers.com

Inspiration



This book *A Handbook of Vitiligo and Color Atlas* was presented by the author to Dr APJ Kalam, Former President of India. It is wonder and historical fact that the Dr APJ Kalam was impressed and inspired after reading the book. He requested DRDO to work on the Indian plants for the treatment of vitiligo and I heard that some herbal medicine tried in vitiligo. Dr APJ Kalam many times visited to BK Headquarters at Mount Abu, Rajasthan. He was also inspired by the method of meditation and collaborated with the doctors of global hospital in Mount Abu. And the doctors they advocated the meditation, change of life style and diet in coronary heart patients. This meditation with they call as Rajyoga meditation, bring rays of cosmic energy which enters into the coronary arteries and opens the blocks. This work was presented at the world cardiologist conference Gyan Mansarovar, Mount Abu. This is admiration of the scientific mind of Late Dr. APJ Kalam. Hence I dedicate this book to the great son of soil Dr APJ Kalam.

Foreword

Dr Punshi introduces this book with the sagacious comment of Stephen Rothman that “Some diseases do not take life, but they just ruin it”. What better thought might introduce a book on vitiligo or any pigmentary disorder for that matter. The personal pain and sorrow suffered by those afflicted by vitiligo is great. Who could not be disappointed to see themselves disfigured by leukoderma? And society imposes additional, almost greater burdens on those who have vitiligo. Successful marriages and employment can be difficult to achieve because of vitiligo. The impact of vitiligo was highlighted by Jawaharlal Nehru, then Prime Minister of India from 1947 to 1962, when he noted that vitiligo imposed a heavy burden on the development of India. For these and other reasons, many workers throughout the world studied vitiligo and other forms of leukoderma but the cases and optimal treatment for these disorders have been defied their very best attempts.

Dr Punshi has compiled in this book an enormous amount of data about vitiligo and pigmentation in general. He has included extensive data on the basic science surrounding leukoderma, pigmentation and pigmentary disorders. In addition he includes information for the clinician caring for those afflicted. Approaches to evaluation and treatment are included. In addition to standard medical therapies, he includes information about new therapy, he has devised, use of lasers, surgery, tattooing and other treatments.

One of the important sections is on the etiology of vitiligo. Possibly some young dermatologists when reading this section will be inspired to investigate leukoderma and will find the causes of vitiligo. If just one young reader is motivated to pursue a career studying pigmentation and its disorders, this book will be a complete success.

James J Nordlund MD
Department of Dermatology
University of Cincinnati
College of Medicine
Cincinnati, Ohio, USA

Preface to the Second Edition

I am very much delighted and pleased to write preface of my book, *A Handbook of Vitiligo and Color Atlas* which is going for the second edition. That gives me inner happiness. Vitiligo is not only a cosmetic problem, but also a social and psychological problems in dark-skinned people throughout the globe. It is a real disease as Prof Aaaron B. Lerner, authority on vitiligo says and advocates that vitiligo is a disorder important to both patients and dermatologists. It is still interesting/fascinating disorder to the pigment cell biologists, immunologists, and dermatologists.

Vitiligo is a really challenge to the physician, to the dermatologists and to the cosmetic dermatologists. Cosmetic dermatology is evolving science which 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 especially 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—Lawrence Charles Parish, Jeniffer Parish, 2017.

Vitiligo today is being treated both by dermatologist and cosmetic dermatologist where skin grafting, melanocyte transplant and laser therapy is a new armaments and tools in the hands of cosmetic surgeon with new type of innovations. In the second edition, new photographs, new flowcharts and new theories of causation of vitiligo and new modes and modalities of treatments and managements have been added. This second edition of my book is humble presentation to the treating physician, dermatologists and students and interns as a simple guide. It will provide great benefit to the vitiligo patients and thereby a service to the humanity.

I am thankful to the vitiligo patients who helped me in getting the clinical photographs. All this book is dedicated to the vitiligo patients and to the lord as he said "Thou has right to act and not to opt for the fruit of action"—Geeta

SK Punshi

Preface to the First Edition

Vitiligo is not only a cosmetic problem, but also a social and psychological problems in dark-skinned people throughout the globe. It is a real disease as Prof Aaron B. Lerner, authority on vitiligo says and advocates that vitiligo is a disorder important to both patients and dermatologists. It is still an interesting/fascinating disorder to the pigment cell biologists, immunologists, and dermatologists.

I have made as humble attempt to collect few gems of knowledge on the subject of vitiligo which shall interest the treating physicians and dermatologists, ultimately it will prove to the benefit of vitiligo patients and thereby a service to the suffering humanity at large.

SK Punshi

Historical Letters

ABDEL MONEM EL-MOFTY, M.D.
PROFESSOR OF DERMATOLOGY
KASR EL AINI FACULTY OF MEDICINE
CAIRO UNIVERSITY
71, HUBAR STREET - FALAKY SQUARE
CAIRO EGYPT U. A. R.

Cairo, 19th May, 1969.

Dr. S.K. Punshi,
Consultant in Skin, V.D.,
Ambika-Nagar
Rajkomal Chook,
Amrovati (M.S.),
India.

Dear Dr. Punshi,

I acknowledge the receipt of your letter dated 8.5.1969.

Regarding my articles on Vitiligo, all of them are included and discussed in my book "Vitiligo and Psoralens", published by Messrs. Pergamon Press, Headington Hill Hall, Oxford, U.K.

The book is obtainable every where and you will find it quite interesting.

With my best regards and excellent wishes, I remain,

Sincerely yours,

Abdel Monem El Mofly, M.D.

HARVARD MEDICAL SCHOOL
DEPARTMENT OF DERMATOLOGY

THOMAS B. FITZPATRICK, M.D.
Edward Wigglesworth Professor of Dermatology

*Massachusetts General Hospital
Boston 14, Massachusetts
Telephone: LAfayette 3-8200*

14 February 1966

Dr. S. K. Punshi
Ambika-Nagar
@ Amravati
Maharashtra, India

Dear Dr. Punshi:

In reply to your letter dated 4 January 1966, the subject of vitiligo can be read in the following journals and books.

- Biochemistry of melanin formation. Lerner, A. B. and Fitzpatrick, T. B. *Physiol. Rev.* 30: 91-126, 1950.
- Melanin pigmentation. Fitzpatrick, T. B. et. al. *New England J. Med.* 265: 328, 1961.
- Vitiligo. Pinkus, H. *J. Invest. Derm.*, 32: 281, 1959.
- Vitiligo. Lerner, A. B. *J. Invest. Derm.*, 32: 285, 1959.
- Albinism. The metabolic basis of inherited disease. Edited by J. B. Stanbury, J. B. Wyngaarden and D. S. Fredrickson. The Blakiston Division of McGraw-Hill Book Company, Inc., New York, 1960. pp. 428-448.
- Lorincz, A. L. *The Medical Clinic of North America*. Vol. 43, May, 1959.
- Lerner, A. B. *J. Invest. Derm.*, 20: 299, 1953.
- Lerner, A. B. *J. Clin. Endocrinol.* 14: 1463, 1964.
- New Eng. J. Med.*, 270: 239, 1964.
- Billingham and Silvers. *J. Invest. Derm.*, 42: 9, 1964.
- Quart. Rev. Biol.*, 35: 1, 1960.
- Birbeck, et. al. *J. Invest. Derm.*, 37: 51, 1961.
- Breathnach, A. S. *Journal of Anatomy*, 98: 265, 1964 and also in *J. Invest. Derm.*, 40: 279, 1963.
- Zelickson, et. al. *J. Invest. Derm.*, 44: 201, 1965.
- Imbric, B. S., et. al. *J. Invest. Derm.*, 32: 331, 1959.

A review article by me and my associates on "Hydroquinone and Peoraleins in the Therapy of Melanin Pigmentary Disorders," is shortly due to appear in the *A. M. A. Archives of Dermatology*. It may take some time to get reprints of this article, but if you write to us around May; we should be happy to send you a reprint of this article.

S. K. Punshi

-2-

14 February 1966

Tripsoralen and Methoxsalen for clinical trials can be obtained from Paul B. Elder Co., Bryan, Ohio. The mode of treatment is well described in this literature accompanying the medication.

Unfortunately, we do not have any position vacant to offer you for training in dermatology.

Sincerely yours,



T. B. Fitzpatrick, M.D.

TBF/jas

Jaypee Brothers



Skin Institute &
School of Dermatology
N. Greater Kailash, New Delhi-48
Phone : 6447409, 6414349, 6412350, 6428718

12th February, 1994


Dr. S.K. Punshi,
Consultant Dermatologist
Rajkamal Chouk,
Amravati-444 601.

Dear Dr. Punshi,

After 6 months' hard labour, the journal, "Asian Clinics in Dermatology" has taken its final shape. You will be glad to know that its first Edition is on **Vitiligo Update**. You have been honoured to be its **Guest Editor** due to your dedication in this field. I am pleased to enclose a copy of the journal for your perusal and record. Please send me your valuable remarks on the same. I will keenly look forward for this journal's review by you in the prestigious Indian Journal of Dermatology, Venereology and Leprology. The next issue of the journal will be incorporating **Allergic Skin Disorders and Cutaneous Surgery**. Do send your original research articles or reviews of clinical interest on the same. Once again many thanks for keeping in touch with us.

With warm personal regards and best wishes,

Sincerely yours,


Prof. P.N. Behl, FRCP
Editor-in-Chief
Asian Journal of Dermatology

Phone: 274581

SKIN INSTITUTE

DEDICATED TO SERVICE OF PATIENTS WITH SKIN DISEASES

Director:
Dr. Prof. P. N. BEHL
F. R. C. P.

13, DARYAGANJ,
(Behind Employment Exchange)
DELHI-6

September 3, 1969

Dear Dr. Punshi,

Thank you very much for your letter dated 2.8.69. I am sorry for the delay in attending to it as I was out of the country for about a month.

I appreciate your efforts in writing a book on 'Vitiligo'. I am sending the reprint of one of my papers on 'New Therapeutic Approach in Vitiligo'. You will find all other references in the same paper. *I am sorry I have no other references.*

I will be glad to write the foreword for your book but I would like to go through the manuscript as it is essential that the foreword should reflect an impartial opinion of the forwording person.

Also it would be my privilege to offer all sorts of help in this direction.

Wishing you all success,

Yours sincerely,

P. N. Behl

(P.N. Behl)



September 4, 2002

DR S K PUNSHI
TREATMENT AND RESEARCH CENTRE
DR PUNSHI'S BANGLOW
SACHIDANAND COLONY
BEHIND STATE BANK OF INDIA
CHHATRI TALAO ROAD
AMRAVATI 444606

Dear Dr. Punshi,

Thank you very much for your gracious invitation to contribute a chapter to your book on Vitiligo.

I have not done any original work in this field for some years now and my contributions and observations have been fully reviewed in the recent chapter I wrote with Dr. Mills for the text *Vitiligo: A Monograph on the Basic and Clinical Science* edited by Hann and Nordlund. I must therefore decline your invitation.

Again many thanks for your kind invitation.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. M. Albert'.

Daniel M. Albert, MD, MS
Chair Emeritus
F.A. Davis Professor and
Lorenz E. Zimmerman Professor

DMA:nf

Department of Sociology
Bryn Mawr College
101 North Merion Avenue
Bryn Mawr, PA 19010-2899
610 536-1395
FAX: 610 536-7475

B R Y N M A W R

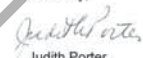
August 6, 2002

Dr. S.K. Punshi
Consultant Dermatologist
Rajkamal Square
Amravati-444601 (MS)
India

Dear Dr. Punshi,

Thank you for inviting me to contribute a chapter in your book on vitiligo. Although I am now involved in other research commitments and cannot contribute a chapter, I am sending you some of my papers for reference and follow up, as well as a pamphlet I wrote for the vitiligo foundation. I hope you find these helpful.

Sincerely,


Judith Porter
Professor



JAMES J. NORDLUND, M.D.

3279 Principia Ave.
Uverimont, OH 43290-4228
Tele (614) 871-4168
Fax (614) 871-6214
Email jjnordlund@jpsa.net

Dr. S. K. Purishi
Treatment and Research Center
Dr. Purishi's Bangalore, Sachidanand Colony
Behind State Bank of India
Chhatra Talao Road
AMRAVATI 444606
India

July 25, 2002

Dear Dr. Purishi,

Thank you for the opportunity to work with you on a book. I must decline the offer at this time since I have too many other obligations at this time. I certainly am willing to read the final manuscript and provide you some help with the book. If you desire, I will write a Foreword to the book.

I wish you the very best in your endeavors and know that you will be successful.

Sincerely,

James J. Nordlund, M.D.

Jaypee Brothers

Dr. A.K. Dutta

MD (Gen-Ped), Ph.D (Med), MRMS, DTM & H.D. DERMAT

SFD -
Dial (Residence) : 350 2610 (10:00 p.m. to 11:00 p.m.)
Except Sunday & ThursdayHon. Professor of Dermatology, Child Health Institute, Calcutta
Fellow Member : Indian College of Allergy & Immunology
Indian Association of Leprology
International Medical Science Academy

1.12.77

Dear Dr. Lanchis

I feel happy to have received a letter from you after a long gap of time. At the same time I feel sad to learn that your cardiac functioning is not so vigorous. However, for you are not doing so well. With certain important limitations a few routine medicines - B₁, B₆, iron, selenium, Potash, your good study habits in a stable form.

"I am writing to you in regard to your proposed project 'bringing out a book on 'Vitamin - Deficiency' - first of all I express my readiness to co-operate in the endeavor. But I like to see clarifications - on the above points, such as -

(i) whether you propose to edit the book with Gantakha for several chapters - chapters will!

(ii) whether your idea is to present a text book style monograph. If so, I will have my suggestions. As you know I have, along with my younger colleague S.K. Dutta, contributed a text book style chapter on Pigmentary Disorders with which I included a detailed section on vitiligo in the first edition of our

CONSULTATION FOR SKIN DISEASES & LEPROSY ONLY BY PRIOR APPOINTMENT AT CLINICS

MON. WED. FRI
2 p.m. to 5 p.m.
ARHAM CLINICS
70, C.R. Avenue, Calcutta - 12
Phone : 237 1383 / 2217317

MON. WED. FRI
7 p.m. to 8 p.m.
HARLEM POINT CLINICS
56, J.L. Nehru Road, Cal - 71
Phone : 282 2608, 3573

TUE. & SAT.
5.00 p.m. to 6.30 p.m.
MAA DURGA CLINIC
P-42, CIT Scheme VI (M), Cal - 54
Phone : 355 8534 (5 p.m. 8 p.m.)

PLEASE BRING ALL OLD PRESCRIPTIONS EACH TIME
Mailing address : 352, A.P.C. Road, Calcutta - 700006

TABLE Contents. This year we have already
sent our revised manuscript with 2nd edition,
~~some minor all together~~ offer such a reader
availability. So it will be feasible to bring our such
presentation. Do you agree?

(iii) If you think of presenting the matter - ~~with~~
Research observations - maybe controversial among
the generally accepted - then I would suggest
a different format which ~~will~~ be based
on diff. interaction - ~~like~~ - Genetic aspect,
Anatomical/Physiological aspect, Histopathol
aspect, Biochemical aspect, Etiology
aspect & all present status of Research -
followed by clinical variation, their
significance, therapy - medical & surgical
etc. etc. In this case we can have
contribution from very selected person -
Medical person & Non-medical Scientist - to
readily them recollect other problem -
discuss. Each sub-section should present the
matter with critical analysis. This brings
personal feeling. I believe, this might
be appreciated by certain readers.

I just wanted to few of my feelings. On looking for
you I shall like to further discuss with you - about your
contemplations & ideas. Please do not underestimate what
I am saying & be logical & judgmental.

I do appreciate your written and love for academic
pursuit. Let me stop here today - wishing you
once again good a new health status. and please
convey my warm regards to your family & god with love & faith
members. Warm regards, Srinivasan (Calle)

Acknowledgments

It is my pleasure and privilege to acknowledge great indebtedness to the following: Dr James J Nordlund for graciously consenting to write Foreword. Dr Porter, Dr SJ Yawalkar, Dr Behl, Dr Saraf, Dr AK Bajaj, Dr Agrawal, Prof. Hachiro Tagami, Dr RG Valia, Dr AK Dutta, Dr Bhanu Iyengar, Dr Taywade, Dr Marfatia, Dr Bose, Dr Pranav Sheth and so many for sending clinical photographs and sending quite good pieces of advice and best wishes for the publication of this book.

Dr Rakesh and Dr Rekha for arranging photographs and secretarial help. Sandip Dawande for computerized typesetting of the manuscript. Thanks to various surgical companies for the photographs of appliances and instrument for the vitiligo-surgery and derma-surgery.

I thank Shri Jitendar P Vij (Group Chairman), Mr Ankit Vij (Group President), Ms Ritu Sharma (Director-Publishing) and the editorial staff of M/s Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, India, who have done a great job "to put an icing on the cake" by way of their professional expertise to make my work reader-friendly and reach it to your desk.

I am also grateful to my patients who allowed me to take clinical photographs during my 35 years of clinical dermatology practice.

Contents

1. Introduction	1
<i>Definition of vitiligo</i>	1
<i>Origin of the word vitiligo</i>	1
2. Historical Background	3
3. Clinical Aspects of Vitiligo	5
<i>Characteristics of vitiligo lesions</i>	5
<i>Clinical types of vitiligo</i>	6
<i>Course of vitiligo</i>	7
<i>Factors affecting progression of vitiligo</i>	8
<i>Clinical manifestations</i>	8
<i>Behaviorism of vitiligo</i>	9
<i>Factors affecting progression of vitiligo</i>	9
4. Genetic Susceptibility in Vitiligo and Familial Aggregation of Vitiligo	10
5. The Psychosocial Impacts of Vitiligo	12
6. Vitiligo with Disorders of Other Systems	14
<i>Vitiligo and endocrine dysfunction</i>	14
7. Incidence of Vitiligo	16
<i>Genetics and familial inheritance prevalence in vitiligo</i>	17
<i>Epidemiology</i>	17
8. Classification	20
<i>Clinical classification of vitiligo: discussion and clarification</i>	21
<i>Classification of vitiligo depending on the activity of disease</i>	22
9. Etiology of Vitiligo	23
<i>Role of vitamin C</i>	23
<i>Discussion</i>	25
10. Color of the Skin	26
<i>Classification of melanin pigments</i>	26

<i>Melanin pigmentary pathway</i>	26
<i>Stages in the development of melanin granules</i>	31
11. Hypothesis in the Causation of Vitiligo	35
<i>Emergence of few new hypotheses</i>	38
12. Diagnosis and Differential Diagnosis of Vitiligo	41
<i>Diagnosis</i>	41
<i>Differential diagnosis of vitiligo</i>	43
13. Chemically-induced Leukoderma	46
<i>Modes</i>	46
<i>Selected chemicals associated with chemical leukoderma</i>	47
<i>Treatment</i>	47
<i>Course and prognosis</i>	48
14. Investigations for Vitiligo	49
<i>Histology</i>	49
<i>Electron microscopy</i>	49
<i>Immunocytochemistry</i>	49
15. Treatment of Vitiligo	51
<i>General measure</i>	51
<i>Medical</i>	51
<i>General consideration</i>	55
<i>Topical PUVA</i>	59
<i>PUVA therapy</i>	60
<i>Photochemotherapy</i>	60
<i>PUVASOL</i>	62
<i>Oral treatment</i>	62
<i>Specific instruction for local/topical treatment</i>	63
<i>Options for ultraviolet-based therapy</i>	64
<i>Surgical</i>	64
<i>Tattooing in vitiligo</i>	67
<i>Dermabrasion in vitiligo</i>	67
<i>Laser therapy for vitiligo</i>	67
<i>Local chemical irritation/counter irritations in vitiligo</i>	68
<i>Local photosensitizers in vitiligo</i>	68
<i>Placental extracts in vitiligo</i>	68
<i>Alternatives</i>	68
<i>Psychology counseling</i>	68
<i>Social aspects in vitiligo</i>	68

<i>No treatment advice</i>	69
<i>Mini pulse therapy for vitiligo</i>	69
<i>Levamisole in vitiligo</i>	69
<i>Cyclophosphamide in vitiligo</i>	69
<i>Rational and scientific approach</i>	69
<i>Summary of treatment strategy of vitiligo</i>	69

16. Recent Knowledge	71
17. Vitiligo in Children	75
<i>Differential diagnosis</i>	75
<i>Treatment</i>	75
18. Conclusion	77
<i>Bibliography</i>	79
<i>Color Atlas</i>	87
<i>Index</i>	109

Introductory Note

About 40 years ago, I came in contact with Dr SK Punshi for the first time. He had been my postgraduate student in the skin department of GT hospital, Grant Medical College, Mumbai. I was impressed by his keen interest in the skin diseases in general and especially in vitiligo and leprosy. He used to be very kind to patients and treated them as his near and dear relatives. After successfully completing his training in Mumbai, he has dedicated his whole life for the welfare of his patients in Vidarbha.

Due to his sincere and devoted service to the community, the citizens had honoured him in a grand function in Amravati in 1994. He has participated in National and International symposiums and seminars in vitiligo, and he was the winner of the "Ambady Oration Award" in 1986. He had introduced placental extract therapy in the treatment of vitiligo and had received All India Award from the Skin Institute, Delhi, in 1977. He was the Vice-president of the Indian Association of Dermatologists, Venereologists and Leprologists.

Dr Punshi is a modest person with scientific vision and religious mission. He knows very well that the medical science prolongs and improves life but the religion deepens it.

He is the author of many books on medical and religious topics. Dermatology for General Practitioners, Handbook of Leprosy, Vitiligo-diagnosis and Treatment are his famous medical books. He had also received International Lions Club Award for his book on helping eradication of leprosy.

It gives me great pleasure in writing the introductory note for Dr Punshi's Handbook of Vitiligo and Color Atlas. This book incorporates his many years clinical and research experience in vitiligo. It includes 18 well written chapters and many color figures. Bibliography have been given to help further reading. In my opinion, this book would be very useful to medical practitioners and skin specialists in treating patients with vitiligo. I sincerely hope that this book will help to create better understanding about this disease. In spite of its harmlessness, vitiligo unfortunately shares the same prejudices as leprosy in some countries. This book should be available in all medical college libraries in India and abroad.

I wish the author every possible success for its wide distribution.

SJ Yawalkar

MD (Munich) DVD (Mumbai)

Formerly Dermatologist, Medical Department

Ciba-Geigy Ltd., Basle, Switzerland

Head, Skin Department, GT Hospital

Hon. Professor of Dermatology

Grant Medical College, Mumbai

CHAPTER

3

Clinical Aspects of Vitiligo

CHARACTERISTICS OF VITILIGO LESIONS (FLOWCHARTS 1 AND 2)

The disease is characterized by well-defined, variously-sized macules of milky white appearance due to complete absence of melanin.

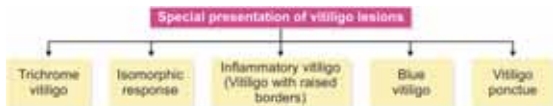
The following are the characteristics of vitiligo lesions:

- Localized or widespread.
- Scattered or confluent.
- Small-size macules, oval, round and irregular in shape and sometime in streaks and sheets.
- The lesions may be unilateral, mostly bilateral and not always symmetrical.
- The color of vitiligo lesion may be milky-white, dead-white or chalky-white.
- The lesion may enlarge peripherally and may coalesce to form extensive patches, and occasionally, the pigmentation become general (Pseudo-albinos).
- Rarely, the patches show slight erythema, but as rule they show only depigmentation and sensitivity to light, e.g. in the summer session, lesions become more conspicuous because of increased pigmentation of the surrounding normal pigmented skin.
- In young women and ladies during menstrual cycle, the white color of the

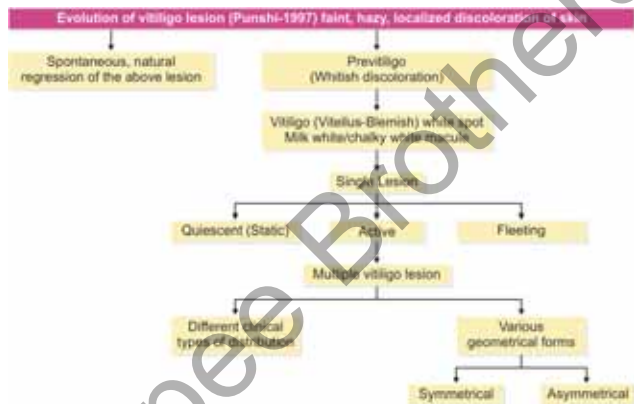
vitiligo patches turn to pink red and after menstrual period is over, they turn to the original white color every month (Punshi's sign).

- The lesions of vitiligo may or may not have hyperpigmented borders.
- Vitiligo with raised borders has been reported by Shukla, et al.
- The hair may be white or black in that particular lesion when hairy areas are involved, the process often, but by no means always involves the follicular melanocytes with resulting loss of hair pigment (leukotrichia or achromotrichia).
- Skin, hair and mucous membranes are affected in this disease.
- Sweat reaction in vitiligo—in the year 1959, Lerner reported increased sweating in the vitiligo affected skin, as evidenced by electrical resistance tests.
- Blood vessels in vitiliginous skin—Some authors feel that there is vasoconstriction in the vitiliginous patch.
- Sensation in the vitiliginous skin—Pinkus showed a slight hypoesthesia in the affected skin.
- Different shapes of vitiligo:
 - Quadrichrome
 - Pentachrome
 - Cockade-like vitiligo

Flowchart 1: Special presentation of vitiligo lesions



Flowchart 2: Evolution of vitiligo lesion



- Linear vitiligo
 - Vitiligo of the follicles on the scalp usually presents as scattered white hairs—the appearance of the scalp: salt and paper color.
 - Confetti type vitiligo or vitiligo fulminans.
- Reaction to sun light—with regard to reaction to sunlight vitiliginous macules are less tolerant to sun than normal skin.
- Vitiligo classification based on clinical manifestation (Koga's classification):
- Type A more common, symmetric
 - Type B - mainly segmental occurs in childhood

CLINICAL TYPES OF VITILIGO (Flowchart 3)

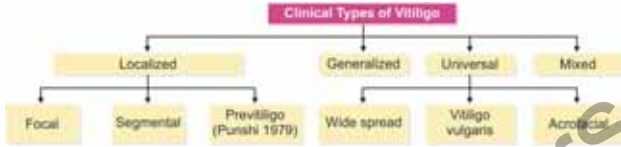
Description

Localized

Focal: One or more macules in one area, but not clearly in a segmental or zosteriform distribution.

Segmental: One or more macules involving a unilateral segment of the body, i.e. part of the face, part of the trunk and extremity or one extremity. The lesions stop abruptly at the midline of the affected segment.

Flowchart 3: Clinical types of vitiligo



Mucosal: Vitiligo of the mouth and mucous membranes, vitiligo on the genitalia.

Generalized

Acrofacial: Distal part of the extremities and face.

Vulgaris: Scattered macules.

Mixed: Acrofacial and vulgaris, or segmental and acrofacial and/or vulgaris.

Universal

Complete or nearly complete depigmentation. The incidence of each type of vitiligo using this classification varies from study to study.

Table 1: Non-dermatomal and dermatomal type of vitiligo

	Type A	Type B
Distribution	Non-dermatomal	Dermatomal (Zosteriform)
Ratio	3	1
Onset	Any age (50% Before 20 year)	Young
Activity	Life-long	Rapid spread 1 year
Associated with:		
Halo naevus	Yes	No
Immunologic diseases	Yes	No
Koebner's phenomenon	Yes	No

COURSE OF VITILIGO

The course of vitiligo is often unpredictable. The natural course of the disease is usually one of slow progression, but it may stabilize or exacerbate rapidly. Vitiligo spreads either by appearance of new depigmented macules, by centrifugal enlargement of pre-existing lesions or both.

Focal or generalized vitiligo spreads progressively to involve small or large portions of the integument on any part of the body without any predictable pattern.

Table 2: Initial sites and progression rates of nonsegmental vitiligo

Initial site	Incidence (%)
Face	39
Neck	10
Anterior	23
Posterior trunk	9
Genitalia	2
Upper extremity	3
Lower extremity	6
Hands	6
Feet	1

FACTORS AFFECTING PROGRESSION OF VITILIGO

Factors that are claimed to aggravate vitiligo include emotional shock, physical illness, sunburn, and pregnancy. These subjective experiences vary from one patient to another and cannot be used with certainty by the dermatologist to advise patients. Objective clinical characteristics such as gender, family history, clinical type, onset age, duration, Koebner's phenomenon, leukotrichia, and mucous membrane involvement may be important. Various clinical characteristics and their significance in the progression of vitiligo.

The duration of the disease is important in evaluating the progression of vitiligo.

CONCLUSION

Segmental vitiligo has clinical features that are different from those of bilateral vitiligo. Understanding these characteristics can give us valuable information in differentiating segmental vitiligo from nonsegmental vitiligo, in treating vitiligo with the proper methods and in predicting the prognosis of vitiligo.

CLINICAL MANIFESTATIONS

The typical vitiligo macules have a well-defined light-tan border and are chalky or snow white (trichrome vitiligo), fourth color being the

dark brown macules of repigmentation, which are usually perifollicular (Quadrichrome vitiligo). Sometimes there may also be a hyperpigmented border or a red halo (inflammatory vitiligo).

Distribution may include the dorsa of hands, the face, body folds including axillae and genitalia lesions are common around body opening such as eyes, nostrils, mouth, nipples, umbilicus and anus. Vitiligo also occurs at sites of trauma (Koebner's phenomenon) such as, around elbows, knees and digits and an amelanotic lesion conforming to the area of injury, burns, excoriations, and friction site as shoulder strap areas, waistband and collar region, may be seen after two to four weeks, being delayed from six to ninety-six months.

Segmental vitiligo presents in dermatomal, multidermatomal, quasi dermatomal being arranged unilaterally. Most of such patients do not develop lesions elsewhere. Vitiligo of distant digits and the lips produces the lip-tip syndrome. Bilateral lesions may be symmetrical or asymmetrical. Palms and soles are commonly involved. Mucosal depigmentation, including gingiva, genitalia, lips and nipples. Leukotrichia-depigmented hair is common in vitiligo patched. Achromotrichia has been reported in 9-45 percent of vitiligo patients. Depigmentation of scalp hair occurs with or without an underlying vitiligo patch and it will have poorer repigmentation response.

There are some changes observed in ears and eyes in vitiligo:

Ears: Some audiologic abnormalities, sensorineural hypoacusis, which may be related to involvement of the inner ear melanocytes.

Eyes: Discrete area of depigmentation with associated pigment hyperplasia involving

Table 3: Dermatomeal distribution of segmental vitiligo

Dermatome	Male(%)	Female(%)
Trigeminal	54	51
Cervical	13	20
Thoracic	21	24
Lumber	11	3
Sacral	1	2

choroid and retinal pigment epithelium as well as acute uveitis. Absence of melanocytes from the epidermis at birth is called piebaldism, term that means white stripped.

BEHAVIORISM OF VITILIGO

The vitiligo lesions behave in a very queer way. Some of the lesions remain static for many years. Some of the lesions spread very fast. In some cases lesions appear in one place and then fleet to some other area. It depends on various factors. The vitiligo lesions should be studied according to their presentation like segmental, non-segmental, vitiligo in

children and vitiligo vulgaris. They all behave and present differently.

FACTORS AFFECTING PROGRESSION OF VITILIGO

Factors that are claimed to aggravate vitiligo include emotional shock, physical illness, sunburn, and pregnancy. Objective clinical characteristics such as gender, family history, clinical type, onset age, duration, Koebner's phenomenon, leukotrichia, and mucous membrane involvement may be important.

Accordingly the vitiligo is classified as progressive and non-progressive, etc.