

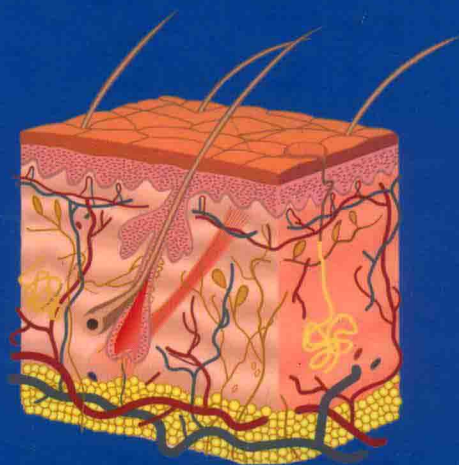
全国高等医药院校精品图书

英汉皮肤性病学

(第2版)

English-Chinese Dermatovenereology (Second Edition)

黄长征 ◎ 主编



华中科技大学出版社

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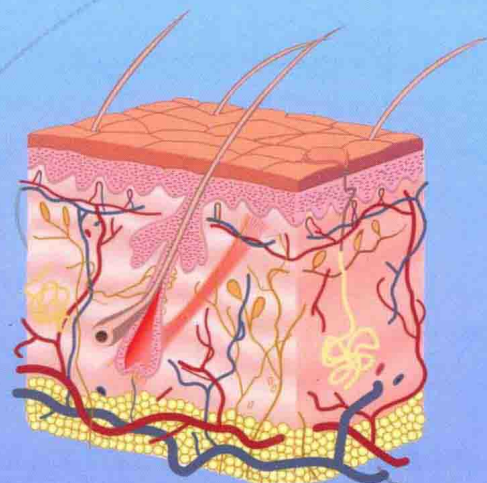
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内 容 简 介

本书为高等医药院校精品教材《英汉皮肤性病学》第2版。全书分为两部分:第一部分共4章,为皮肤性病学的基础知识、基本理论、技术和方法,包括皮肤的基本结构和功能,皮肤病的症状、体征和基本诊断方法,皮肤组织病理及皮肤性病治疗学的基本知识;第二部分共23章,介绍皮肤科常见病和多发病、部分少见疑难性皮肤病、性传播疾病,包括病因、发病机制、临床表现、诊断与鉴别诊断、预防和治疗。全书共有图片405幅,其中彩色照片396幅,彩色示意图6幅,黑白照片3幅。

本书为华中科技大学立项精品课程教材,适合五年制、六年制和八年制医学生以及来华留学生英文教学使用,也适合中文教学和皮肤科专科医师及规培生使用。

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非常感谢 Ernest Allen 对本教材中的英文用词、拼写和语法提出的宝贵意见!

序 言

近几年来,专业英语教学在我国高等医学院校中普遍开展,很多院校有全英文班或开展了全英文教学以及来华留学生专业英语教学,专业英语教学日益受到重视。2008年我们组织了国内13个单位的专家编写了《英汉皮肤性病学》教材第1版,于2009年正式出版,第1版出版后得到了广大读者的肯定和好评,同时也指出了其中的不足并提出了宝贵的意见,在此,向各位读者表示衷心的感谢!第1版全体编委及编写人员为本教材的出版付出了艰辛的劳动,特别是美国华盛顿特区乔治城大学微生物和免疫系的李冬梅教授作为本教材的英文主审所做出的巨大努力是难以想象的,在此向她深表谢意!

7年过去了,皮肤性病学领域在学科理论、疾病分类、实验技术、临床诊治方面都有了新的进展,为适应学科的发展和新世纪医学人才培养的需要,特对本教材进行修订。本次修订保持了本教材第1版的总体特色,即全书分为两部分,第一部分为皮肤性病学的基本知识,第二部分为各论,介绍皮肤科常见多发病,并根据学科的发展需要和疾病病种发病率的改变对部分章节及内容进行了增补和删减,对部分疾病进行了更合理和科学的章节归类及采用了更科学的命名:第一章更名为“皮肤的基本结构和功能”;第三章增加了“皮肤镜检查”等新的诊断方法;增加了第四章“皮肤病的外用药治疗和物理治疗”;第五章中将“鲍温样丘疹病”删除,其内容移入尖锐湿疣鉴别诊断中;第六章细菌感染性皮肤病增加了“非典型分枝杆菌所致的皮肤病”;第九章中将“化妆品皮炎”并入“接触性皮炎”一节中;第十五章新增了“原发性免疫缺陷病”;第十六章增加了“青斑样血管病”;第十八章中的“类脂质渐进性坏死”移至“非感染性肉芽肿”章节;新增第二十五章“非感染性肉芽肿”等。新概念、新理论、新技术、新的疾病分类、诊断标准及鉴别诊断和治疗的进展将体现在各章节中。同时对第1版中的绝大部分照片进行了更换或调整,多数为近几年来新拍摄的质量较好和典型的照片,如此种种读者从中可以了解。

参加第2版编写的编委及编写人员基本上都参加了第1版的编写,他们具有第1版的写作经验,并曾在国外学习或工作1年以上,具有较好的英文基础及丰富的临床经验;为加强写作力量,我们新增了7位编委:南京医科大学第一附属医院骆丹教授,浙江大学医学院附属第二医院蔡绥勋教授,西安交通大学第二附属医院耿松梅教授,华中科技大学同济医学院附属协和医院陈宏翔教授,中南大学湘雅医院施为教授,北京大学第一医院汪旻教授,福建医科大学附属第一医院纪超教授。

同时,我们再次邀请了美国华盛顿特区乔治城大学微生物和免疫系的李冬梅教授及加拿大不列颠哥伦比亚大学皮肤科的 You-wen Zhou 教授作为本教材的英文主审、加拿大不列颠哥伦比亚大学药学院的 Jia-ying Zhou 作为英文副主审,并请 Ernest Allen 先生对英文用词进行把关,以保证本教材的质量,我们希望第2版能比第1版编写得更出色。

教材中的图号两位数字分别表示章、图序号。示意图图1-1、图1-2、图1-7、图1-10、图1-11和图1-24由我院影像科的鲁永康女士制作;图17-1、图24-2由第四军医大学皮肤科提供;图2-24、图21-3、图21-5、图21-11和图21-12由北京大学第一医院皮肤科陈喜雪教授提供,其他照片由本人及各参编单位提供。在本教材的编写过程中,两位英文主审特别是李冬梅教授、英文副主审、各位副主编、编委以及编写者付出了大量的心血和辛勤劳动;同时得到华中科技大学及华中科技大学出版社有限责任公司各级领导的关心和支持,华中科技大学同济医学院附属协和医院皮肤科陶娟主任、前任主任涂亚庭教授及全体同仁给予了热情鼓励和帮助,本科室的博士和硕士研究生赵梦洁、冉艺、赖艇、孙艳虹、谢蒙、安湘杰、吴士迪以及 Abdul-fattah Bilal, Al-Muriesh Maher, Nabatanzi Amelia, Hageb Omar 等在教材的资料整理及校对工作中也付出了艰辛的劳动,在此一并表示感谢!

虽然我们尽力而为之,但是,毕竟对所有作者而言,英文都不是我们的母语,疏漏谬误之处难以避免,敬请各位同道和读者指正和谅解!

黄长征

2016年8月12日

目 录

Contents

Part One 第一部分

Chapter One Basic Structure and Function of the Skin	皮肤的基本结构和功能	(1)
Section One Basic Structure of the Skin	皮肤的基本结构	(1)
Section Two Function of the Skin	皮肤的功能	(36)
Chapter Two Basic Knowledge of Dermatopathology	皮肤组织病理学的基本知识	(46)
Section One The Role of Dermatopathologic Examination and Skin Biopsy Techniques	皮肤病理检查的作用和皮肤组织活检技术	(46)
Section Two Dermatopathology Glossary of Terms	皮肤组织病理学基本术语	(47)
Chapter Three Symptoms, Signs and Basic Diagnostic Techniques for Dermatoses	皮肤病的症状、体征和基本诊断方法	(61)
Chapter Four Topical and Physical Treatment of Skin Diseases	皮肤病的外用药治疗和物理治疗	(72)
Section One Topical Treatment of Skin Diseases	皮肤病的外用药治疗	(72)
Section Two Physical Treatment for Skin Diseases	皮肤病的物理治疗	(75)

Part Two 第二部分

Chapter Five Dermatoses Caused by Viral Infection	病毒感染性皮肤病	(80)
Section One Herpes Simplex	单纯疱疹	(80)
Section Two Varicella and Herpes Zoster	水痘和带状疱疹	(83)
Section Three Warts	疣	(88)
Section Four Molluscum Contagiosum	传染性软疣	(90)
Section Five Hand-Foot-Mouth Disease	手足口病	(92)
Chapter Six Dermatoses Caused by Bacterial Infections	细菌感染性皮肤病	(94)
Section One Impetigo	脓疱疮	(94)
Section Two Staphylococcal Scalded Skin Syndrome	葡萄球菌性烫伤样皮肤综合征	(97)
Section Three Folliculitis	毛囊炎	(98)
Section Four Erysipelas	丹毒	(100)
Section Five Tuberculosis Cutis	皮肤结核	(101)
Section Six Leprosy	麻风	(105)
Section Seven Dermatoses Caused by Atypical Mycobacteria	非典型分枝杆菌所致的皮肤病	(109)
Chapter Seven Dermatoses Caused by Fungi	真菌感染性皮肤病	(113)
Section One Tinea Capitis	头癣	(113)
Section Two Tinea Corporis and Tinea Cruris	体癣和股癣	(116)
Section Three Tinea Manus and Tinea Pedis	手癣和足癣	(118)
Section Four Onychomycosis	甲真菌病	(120)
Section Five Pityriasis Versicolor	花斑糠疹	(122)

Section Six	<i>Malassezia</i> Folliculitis	马拉色菌毛囊炎	(124)
Section Seven	Candidiasis	念珠菌病	(125)
Section Eight	Sporotrichosis	孢子丝菌病	(130)
Section Nine	Chromoblastomycosis	着色芽生菌病	(132)
Chapter Eight	Dermatoses Caused by Arthropods and Aquatic Organisms		
	节肢动物和水生生物性皮肤病		(135)
Section One	Scabies	疥疮	(135)
Section Two	<i>Paederus</i> Dermatitis	隐翅虫皮炎	(137)
Section Three	Pediculosis	虱病	(139)
Section Four	Bee and Wasp Sting	蜂蜇伤	(141)
Section Five	Microbasic Dermatitis	刺胞皮炎	(142)
Section Six	Papular Urticaria	丘疹性荨麻疹	(144)
Chapter Nine	Dermatitis and Eczema	皮炎和湿疹	(146)
Section One	Contact Dermatitis	接触性皮炎	(146)
Section Two	Eczema	湿疹	(148)
Section Three	Atopic Dermatitis	特应性皮炎	(150)
Section Four	Perioral Dermatitis	口周皮炎	(154)
Chapter Ten	Urticaria	荨麻疹	(156)
Chapter Eleven	Adverse Cutaneous Reactions to Drugs	药物的皮肤不良反应	(160)
Chapter Twelve	Pruritic and Neurogenic Dermatoses	瘙痒性和神经功能障碍性皮肤病	(173)
Section One	Psychogenic Pruritus	精神性瘙痒症	(173)
Section Two	Prurigo	痒疹	(174)
Section Three	Factitious Dermatitis	人工皮炎	(178)
Section Four	Lichen Simplex Chronicus	慢性单纯性苔藓	(179)
Chapter Thirteen	Erythematous, Papular and Squamous Dermatoses	红斑、丘疹及鳞屑性皮肤病	(181)
Section One	Erythema Multiforme	多形红斑	(181)
Section Two	Psoriasis	银屑病	(184)
Section Three	Parapsoriasis	副银屑病	(192)
Section Four	Pityriasis Rosea	玫瑰糠疹	(194)
Section Five	Pityriasis Alba	白色糠疹	(196)
Section Six	Lichen Planus	扁平苔藓	(197)
Section Seven	Pityriasis Rubra Pilaris	毛发红糠疹	(199)
Section Eight	Lichen Nitidus	光泽苔藓	(201)
Section Nine	Lichen Striatus	线状苔藓	(202)
Section Ten	Erythroderma	红皮病	(203)
Chapter Fourteen	Dermatoses Resulting from Physical Factors	物理因素引起的皮肤病	(206)
Section One	Sunburn	日晒伤	(206)
Section Two	Polymorphous Light Eruption	多形性日光疹	(207)
Section Three	Chronic Actinic Dermatitis	慢性光化性皮炎	(208)
Section Four	Miliaria	痱	(209)
Section Five	Chilblains (Perniosis)	冻疮	(210)
Section Six	Erythema Ab Igne	热激红斑	(211)
Section Seven	Clavus (Corns) and Callus	鸡眼和胼胝	(212)
Section Eight	Radiodermatitis	放射性皮炎	(213)

Section Nine	Rhagadia Manus and Pedis 手足皲裂	(214)
Chapter Fifteen	Congenital and Hereditary Dermatoses and Primary Immunodeficiency Disorders	
	先天性和遗传性皮肤病及原发性免疫缺陷病	(216)
Section One	Ichthyosis 鱼鳞病	(216)
Section Two	Keratosis Pilaris 毛发角化病	(220)
Section Three	Keratosis Follicularis (Darier's disease) 毛囊角化病(Darier 病)	(221)
Section Four	Keratosis Palmaris et Plantaris 掌跖角皮症	(222)
Section Five	Inherited Epidermolysis Bullosa 遗传性大疱性表皮松解症	(224)
Section Six	Familial Benign Chronic Pemphigus(Hailey-Hailey Disease) 家族性良性慢性天疱疮(Hailey-Hailey 病)	(230)
Section Seven	Neurofibromatosis 神经纤维瘤病	(231)
Section Eight	Incontinentia Pigmenti 色素失禁症	(234)
Section Nine	Tuberous Sclerosis 结节性硬化症	(236)
Section Ten	Primary Immunodeficiency Diseases 原发性免疫缺陷病	(239)
Chapter Sixteen	Cutaneous Vascular Diseases 皮肤血管性疾病	(246)
Section One	Allergic Purpura 过敏性紫癜	(246)
Section Two	Allergic Cutaneous Vasculitis 变应性皮肤血管炎	(248)
Section Three	Nodular Vasculitis 结节性血管炎	(249)
Section Four	Behçet's Disease 白塞病	(251)
Section Five	Pigmentary Purpuric Dermatoses 色素性紫癜性皮肤病	(254)
Section Six	Polyarteritis Nodosa 结节性多动脉炎	(257)
Section Seven	Livedoid Vasculopathy 青斑样血管病	(259)
Chapter Seventeen	Nutritional Diseases 营养性疾病	(261)
Section One	Niacin Deficiency (Pellagra) 烟酸缺乏症(糙皮病)	(261)
Section Two	Zinc Deficiency and Acrodermatitis Enteropathica 锌缺乏症与肠病性肢端皮炎	(265)
Chapter Eighteen	Metabolic Disorders and Endocrine Diseases 代谢障碍与内分泌性疾病	(269)
Section One	Xanthomatosis 黄瘤病	(269)
Section Two	Primary Cutaneous Amyloidosis 原发性皮肤淀粉样变	(271)
Section Three	Gout 痛风	(273)
Section Four	Calcinosis Cutis 皮肤钙质沉着症	(275)
Section Five	Myxedema 黏液性水肿	(277)
Section Six	Acanthosis Nigricans 黑棘皮病	(282)
Chapter Nineteen	Dermatoses Caused by Disturbances of Pigmentation 色素障碍性皮肤病	(286)
Section One	Vitiligo 白癜风	(286)
Section Two	Melasma 黄褐斑	(288)
Section Three	Freckles 雀斑	(289)
Section Four	Riehl Melanosis Riehl 黑变病	(291)
Section Five	Peutz-Jeghers Syndrome Peutz-Jeghers 综合征	(292)
Chapter Twenty	Connective Tissue Diseases 结缔组织疾病	(294)
Section One	Lupus Erythematosus 红斑狼疮	(294)
Section Two	Dermatomyositis 皮肌炎	(305)
Section Three	Scleroderma 硬皮病	(309)
Section Four	Overlap Syndrome 重叠综合征	(315)
Section Five	Mixed Connective Tissue Disease 混合性结缔组织病	(316)

Section Six	Sjögren's Syndrome	Sjögren 综合征	(318)
Section Seven	Undifferentiated Connective Tissue Disease	未分化结缔组织病	(321)
Chapter Twenty-one	Autoimmune Bullous Dermatoses	自身免疫性大疱性皮肤病	(323)
Section One	Pemphigus	天疱疮	(323)
Section Two	Bullous Pemphigoid	大疱性类天疱疮	(329)
Section Three	Dermatitis Herpetiformis	疱疹样皮炎	(332)
Section Four	Linear IgA Bullous Dermatitis	线状 IgA 大疱性皮肤病	(334)
Section Five	Epidermolysis Bullosa Acquisita	获得性大疱性表皮松解症	(336)
Chapter Twenty-two	Disorders of the Mucous Membrane	黏膜疾病	(340)
Section One	Recurrent Aphthous Stomatitis	复发性阿弗他口腔炎	(340)
Section Two	Lichen Sclerosus	硬化性苔藓	(343)
Section Three	Contact Cheilitis	接触性唇炎	(345)
Section Four	Actinic Cheilitis	光线性唇炎	(346)
Section Five	Exfoliative Cheilitis	剥脱性唇炎	(347)
Section Six	Fordyce Disease	Fordyce 病	(348)
Section Seven	Pearly Penile Papules	珍珠状阴茎丘疹	(349)
Section Eight	Balanoposthitis	包皮龟头炎	(350)
Chapter Twenty-three	Diseases of the Appendages	附属器疾病	(354)
Section One	Seborrheic Dermatitis	脂溢性皮炎	(354)
Section Two	Acne	痤疮	(356)
Section Three	Rosacea	酒渣鼻	(359)
Section Four	Alopecia Areata	斑秃	(362)
Section Five	Androgenetic Alopecia	雄激素源性脱发	(364)
Section Six	Hyperhidrosis	多汗症	(366)
Section Seven	Bromhidrosis	臭汗症	(367)
Chapter Twenty-four	Diseases of Subcutaneous Fat	皮下脂肪组织疾病	(369)
Section One	Erythema Nodosum	结节性红斑	(369)
Section Two	Cold Panniculitis	寒冷性脂膜炎	(371)
Chapter Twenty-five	Non-infectious Granulomas	非感染性肉芽肿	(373)
Section One	Sarcoidosis	结节病	(373)
Section Two	Granuloma Annulare	环状肉芽肿	(376)
Section Three	Necrobiosis Lipoidica	类脂质渐进性坏死	(378)
Chapter Twenty-six	Neoplasms of the Skin	皮肤肿瘤	(380)
Section One	Epidermal Nevi	表皮痣	(380)
Section Two	Seborrheic Keratosis	脂溢性角化病	(381)
Section Three	Actinic Keratosis	光化性角化病	(383)
Section Four	Epidermal Cysts	表皮囊肿	(385)
Section Five	Bowen's Disease	鲍温病	(386)
Section Six	Squamous Cell Carcinoma	鳞状细胞癌	(388)
Section Seven	Basal Cell Carcinoma	基底细胞癌	(390)
Section Eight	Paget's Disease	Paget 病	(392)
Section Nine	Sebaceous Nevus	皮脂腺痣	(394)
Section Ten	Syringoma	汗管瘤	(395)
Section Eleven	Dermatofibroma	皮肤纤维瘤	(396)

Section Twelve	Keloid 瘢痕疙瘩	(397)
Section Thirteen	Congenital Vascular Malformations and Hemangiomas 先天性血管畸形和血管瘤	(399)
Section Fourteen	Lipoma 脂肪瘤	(402)
Section Fifteen	Nevocytic Nevi 痣细胞痣	(404)
Section Sixteen	Malignant Melanoma 恶性黑素瘤	(406)
Section Seventeen	Granuloma Fungoides 蕈样肉芽肿	(410)
Chapter Twenty-seven	Sexually Transmitted Diseases 性传播疾病	(414)
Section One	Syphilis 梅毒	(414)
Section Two	Gonorrhea 淋病	(426)
Section Three	Chlamydial Urogenital Infection 衣原体泌尿生殖道感染	(431)
Section Four	Condyloma Acuminatum 尖锐湿疣	(433)
Section Five	Genital Herpes 生殖器疱疹	(435)
Section Six	Acquired Immunodeficiency Syndrome (AIDS) 获得性免疫缺陷综合征(艾滋病)	(438)
English-Chinese Index	英汉对照索引	(442)
References	参考文献	(447)

Part One 第一部分

Chapter One Basic Structure and Function of the Skin

第一章 皮肤的基本结构和功能

Section One Basic Structure of the Skin

第一节 皮肤的基本结构

The skin is the largest human organ and completely covers the body. It accounts for about 15 percent of a human's weight, and has an area about 0.2 m^2 for a newborn and approximately 1.6 m^2 for an adult. It performs many vital functions and is an important component of the immune system.

皮肤覆盖于人体表面,是人体最大的器官,约占总体重的 15%,成人和新生儿的皮肤总面积约分别为 1.6 m^2 和 0.2 m^2 。皮肤具有许多重要功能,是人体的重要免疫器官之一。

The entire surface of the skin is covered by alternating sets of fine grooves and ridges which are known as the *sulci cutis* and the *cristae cutis* respectively. The orientation and density of these dermal ridges and valleys varies according to the specific area of the body. The openings for the sweat pores are located exclusively in the ridges. Although it is unknown precisely how the conditions of human development determine the orientation of these ridges, it is well known that the swirled pattern on the palms and soles, also known as the "fingerprints" when it comes to modern crime analysis dramas, is not only unique to the person but also unchanging over a person's life. The terminal hairs or tiny vellus hairs also cover most parts of the body. In addition, some characteristic lines known as "Blaschko lines" can manifest themselves in cutaneous mosaicism as a symptom of certain skin diseases.

皮肤表面有呈网状深浅不一和方向不同的沟和嵴,分别称为皮沟和皮嵴。身体上不同部位的皮嵴和皮沟的起始方向不同,汗孔开口于皮嵴。虽然还不清楚人类在发育时是如何决定这些不同皮嵴的起始的,但众所周知的是,掌跖部位的皮沟和皮嵴的漩涡状形态,即现代犯罪案例分析中的指纹,不仅对每个人而言是独特的,并且终生不变。皮肤表面大多被覆有毛发和毳毛。此外,皮肤表面可有许多呈特殊分布和走向的不规则分界线,称为 Blaschko 线。某些具有镶嵌特征的皮肤病可以呈现 Blaschko 线分布。

The color of the skin depends upon race, age, gender, nutrition and environment, and even varies with specific location on the body.

皮肤的颜色因种族、年龄、性别、营养以及外在环境而异,甚至同一个人不同部位的颜色也有深浅的差别。

The skin is composed of three anatomically distinct layers. From the surface inward, these are the epidermis, dermis, and subcutaneous tissue (fat-storing cells) (Fig. 1-1).

在解剖学上,皮肤都是由表皮(epidermis)、真皮(dermis)、皮下组织(subcutaneous tissue)或皮下脂肪(subcutaneous fat)三层所组成(图 1-1)。

Epidermis

表皮

The epidermis is the outmost layer of the skin, which interacts directly with the external environment. The thickness of the epidermis varies significantly from site to site on the body, from less than 0.1 mm on the eyelids to 1.5 mm on the palms of the hands and soles of the feet. The epidermis is composed of keratinocytes, Langerhans cells, α -dendritic cells (also known as indeterminate cells), melanocytes, Merkel cells and unmyelinated neurons. It also contains the cuboidal epithelial cells that form the

表皮(epidermis)位于最外层,直接与外界接触。不同部位的皮肤其相对厚度有显著差异,掌跖部位的表皮最厚,约为 1.5 mm ,眼睑部位则不到 0.1 mm 。表皮由角质形成细胞、朗格汉斯细胞、 α -树枝状细胞(未定类细胞)、黑素细胞、Merkel 细胞及无髓鞘神经元构成。表皮中还含有形成小汗腺导管的末端螺旋汗

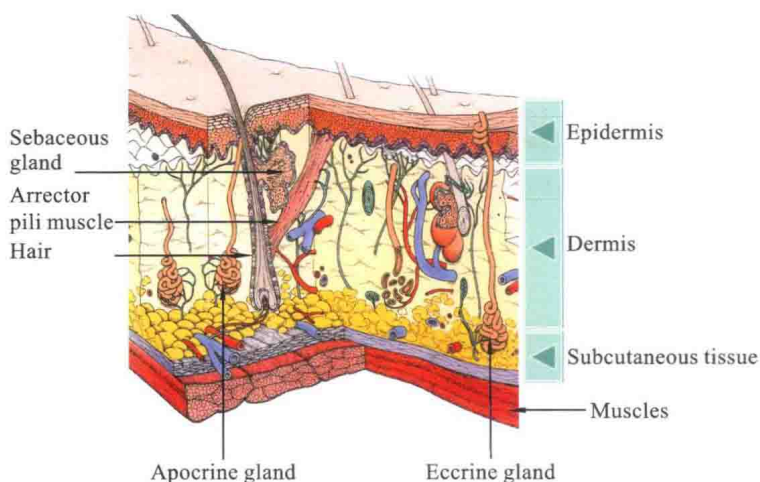


Fig. 1-1 Illustration of the skin structure(图 1-1 皮肤的组织结构示意图)

spiral acrosyringia of the eccrine sweat ducts. In about 10% of the population, the so-called Toker cells can be found in the epidermis of the nipple. Toker cells are clear cells with light staining cytoplasm, vesicular nuclei and prominent small nucleoli. These cells can express molecular markers for CK7, AE1, CAM5.2, cerB2, EMA, ER, PR, but not for P53 and CD138 in contrast to Paget's cells which do not express ER or PR but are positive for P53 and CD138 staining.

1. Keratinocytes

The epidermis is composed primarily of well-ordered cells called keratinocytes (or squamous cells). The name is derived from the fact that the basic function of such cells is to synthesize keratin. Keratinocytes account for 95% of the epidermal cell mass.

At the microscopic level, if we were to slice into the epidermis, we would see it divided into four layers. From the innermost layer to the outermost, these are known as the basal cell layer (*stratum basalis*), the prickly cell layer, or suprabasal cell layer (*stratum spinosum*), the granular cell layer (*stratum granulosum*), and the horny cell layer (*stratum corneum*) (Fig. 1-2, Fig. 1-3). Sometimes a pink layer can be found between the granular cell layer and the horny cell layer in the skin of the palms and soles. This layer is called the *stratum lucidum*.

The plane of contact between the epidermis and dermis is not smooth and flat, but is an undulant interface. The rete ridges of the epidermis grow down into the dermis and alternate with interdigitated projections of the dermal connective tissue (the latter are the so-called dermal papilla). The basement membrane zone (BMZ) is situated just between the epidermis and the dermis.

1) Basal cell layer(*stratum basalis*)

(1) Basal cells: the basal cells are also called epidermal matrix

管的立方上皮细胞;在约 10% 的个体的乳头表皮中可发现有 Toker 细胞。Toker 细胞也是一种透明细胞,呈多角形或卵圆形,胞质淡染,核呈空泡状,有显著小核仁。该细胞阳性表达 CK7、AE1、CAM5.2、cerB2、EMA、ER、PR,而不表达 P53 和 CD138,与之相反的是, Paget's 细胞则不表达 ER 和 PR,而表达 P53 和 CD138。

一、角质形成细胞

表皮主要由有规则排列的细胞即角质形成细胞(keratinocyte)(又称鳞状细胞)构成,其基本功能是合成角蛋白。表皮的细胞 95% 是角质形成细胞。

显微镜下,在二维切片中,表皮由内到外可以分为四层:基底细胞层(或基层)、棘细胞层(或基底上细胞层,或棘层)、颗粒细胞层(或颗粒层)和角质细胞层(或角质层)(图 1-2,图 1-3)。在掌跖部位,颗粒层与角质层之间尚有一粉红色的透明层。

表皮和真皮之间的接触面不是平整的,而是高低不平呈起伏状,表皮嵴伸入真皮内,并与真皮内的结缔组织呈指状突起(后者称为真皮乳头)相互交织,基膜带位于表皮与真皮之间。

(一) 基底细胞层(基层)

(1) 基底细胞 基底细胞又称为表

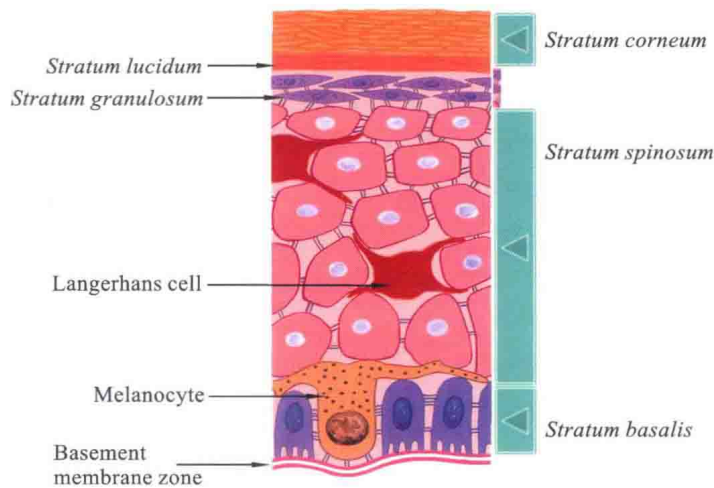


Fig. 1-2 Illustration of the epidermal layers(图 1-2 表皮的层次示意图)

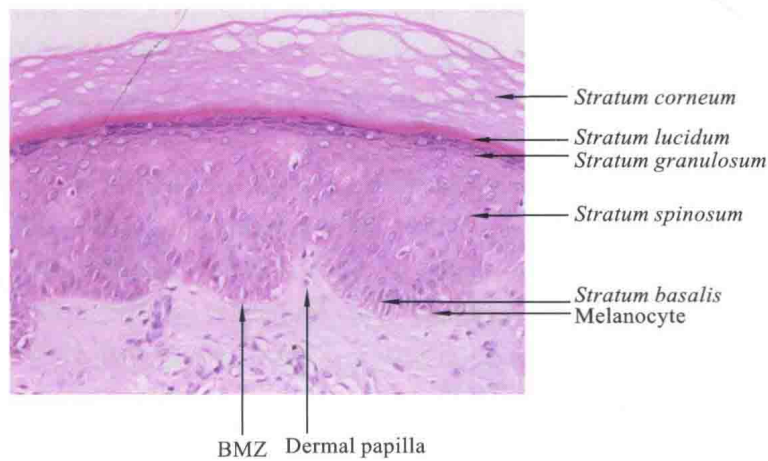


Fig. 1-3 The epidermal layers, HE staining(图 1-3 表皮的层次, HE 染色)

cells or epidermal germinative cells. They proliferate, differentiate, and then move upward through the full thickness of the epidermis, layer by layer. The mitotic activity in the epidermis is mainly confined to the basal cell layer. The time spanning from differentiation of keratinocytes in the basal cell layer to the exfoliation process in the horny cell layer is known as the epidermal transit time or epidermal turnover time. In normal skin, this takes about 28 days.

The epidermal stem cells are predominately located at the tips of the epidermal rete ridges, but also in the bulge regions of the hair follicles, and at the base of the sebaceous glands. Epidermal stem cells are characterized by their high expression levels of $\beta 1$ -integrin, $\alpha 6$ -integrin, Lrig1, Rac1 and P63, their low expression of desmoglein 3 and by the lack of markers for terminal differentiation of epidermal cells. Hair follicle stem cells in the bulge areas can generate cells of the outer root sheath, differentiate into sebocytes and interfollicular epidermal cells and express the cell surface

皮母质细胞(epidermal matrix cells)或表皮生发细胞(epidermal germinative cells)。基底层细胞发生增殖、分化,并逐步向表皮上部移行于表皮全层。表皮的分裂活性主要发生于基底层。基底细胞从基底层发生增殖到表皮角质层脱落的时间称为表皮通过时间(epidermal transit time)或表皮更替时间(epidermal turnover time),正常人约为 28 天。

表皮干细胞(epidermal stem cells)主要位于表皮嵴的顶端,在毛囊的隆突处、皮脂腺的底部也有类似的细胞。表皮干细胞的特征是高表达 $\beta 1$ 整合素、 $\alpha 6$ -整合素、Lrig1、Rac1 和 P63,而桥粒芯糖蛋白 3 的表达水平低,并缺乏终末分化标记。毛囊隆突处的干细胞能产生外毛根鞘细胞,分化为皮脂腺细胞、毛囊间表皮细胞,并表达细胞表面分子 CD34、

molecules such as CD34, VdR and transcription factors TCF3, Sox9, Lhx2 and NFATc1. Therefore, these stem cells play an important role in maintaining the homeostasis of the pilosebaceous unit. When sebocyte stem cells differentiate into sebocytes, the cells become full of lipid and express Blimp1.

The basal cell layer is grouped into a series of rectangular or columnar shaped keratinocytes, which contain relatively large round-oval nuclei dominated by chromatin, and which contain slightly more basophilic cytoplasm than the keratinocytes above it. By aligning in the manner of a series of palisades, the basal cells keep their long axes perpendicular to the plane of the basal membrane. The melanin in basal cells is obtained from adjacent melanocytes that govern the color and shades of the skin.

The cytoplasm of the basal cells and the keratinocytes above it are packed with intermediate keratin filaments arranged as bundles of threads (tonofilaments). This structure runs from the peripheral area of the nuclei to the specialized attachment plaques, desmosomes or hemidesmosomes, which are described below.

(2) Desmosome, hemidesmosome, and gap junction: epidermal cells are joined to one another by desmosomes (specialized intercellular bridges as shown in Fig. 1-4). They are joined horizontally between adjacent basal cells, vertically between basal cells and prickle cells above and also transversely between prickle cells themselves. The detailed view of desmosome structure reveals an electron-lucent space in the central part of the desmosomes, and an electron-dense central lamina (Fig. 1-4 inset) just in the middle of this intercellular matrix. The hemidesmosomes attach the basal-cell membrane to the basal membrane. The gap junctions also allow communication between adjacent basal cells.

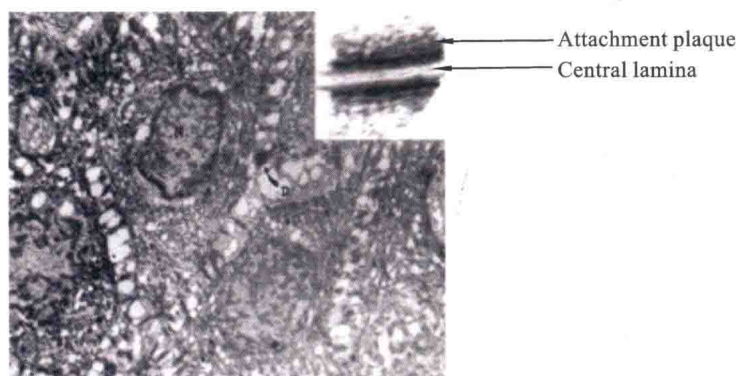


Fig. 1-4 Electron microcopy of desmosome. D: desmosome. Inset is the magnification of desmosome

(图 1-4 桥粒电镜照片。D: 桥粒, 插入图为桥粒放大)

① Desmosomes: desmosomes are composed of attachment plaque and transmembrane proteins that set up a bridge between cell surface and intracellular filaments. The attachment plaque is

VdR 及转录因子 TCF3、Sox9、Lhx2 和 NFATc1。这些干细胞在维持毛囊皮脂腺单位的自稳中发挥重要的作用。皮脂腺干细胞能分化为充满脂质的皮脂腺细胞并表达 Blimp1。

基底细胞呈长立方形或圆柱形, 胞质嗜碱性, 核呈椭圆形, 深染色质。基底层由单排呈栅栏状排列的基底细胞构成, 其长轴与表皮和真皮间的分界线垂直。基底细胞胞质内含有从临近的黑素细胞输送而来的黑素颗粒, 其含量的多少与肤色相匹配。

基底细胞及其上面的角质形成细胞的胞质内含有角蛋白中间丝, 即张力细丝, 张力细丝呈束状聚集在核周, 并终止于胞质膜的特异化结构附着板, 即桥粒或半桥粒。

(2) 桥粒、半桥粒、间隙连接 相邻的基底细胞之间以及基底细胞与其上面相邻的棘细胞之间、相邻的棘细胞之间通过细胞间桥 (intercellular bridges) 即桥粒 (desmosome) (图 1-4) 联系, 桥粒中央为电子透明间隙, 间隙内细胞间黏合物质的中央为电子密度致密的中央层 (图 1-4 插入图)。基底层与其下的基膜则通过半桥粒 (hemidesmosome) 相互联系。基底细胞之间尚有助于细胞通讯的间隙连接 (gap junction)。

① 桥粒由附着板和跨膜蛋白构成, 在细胞表面与细胞内的细丝之间起桥梁作用。前者的主要成分是桥粒斑蛋白

where desmoplakin attaches to the keratin fibers, and is also the place for transmembrane proteins, desmogleins and desmocollins to attach to desmoplakin via plakoglobin and plakophilin. Then the extracellular domains of desmogleins and desmocollins bind to each other in order to bridge the space between adjacent epidermal cells. In general, desmoglein 3 is common (and easily detected) in suprabasal keratinocytes and desmoglein 1 is in the group of keratinocytes just beneath the horny cell layer.

With the use of electron microscopy, each desmosome is seen to be made of three parts: the trilaminar plasma membrane structure of the adjacent keratinocytes, the electron-dense attachment plaque in each adjacent keratinocyte's cytoplasm, and an intercellular matrix between the two.

This trilaminar plasma, 8 nm in width, presents as three layers of differing density under electron microscopy. The inner layer (inner leaflet) is a fine electron-dense line along the cytoplasmic side of the plasma membrane adjacent to the attachment plaque; an electron-lucent central lamina stands in the middle, and finally the electron-dense outer layer (outer leaflet) interfaces to the intercellular matrix between the epidermal cells. The densest material of such intercellular matrix tends to be deposited on the surface of outer leaflet, and is known as cell surface coat. However, it is not easy to clarify the boundary between the cell surface coat and outer leaflet of the plasma membrane because of their similar density.

② Hemidesmosomes; as the name implies, hemidesmosomes are half desmosomes. This structure is important for connecting the basal cells to the lamina densa of the basal membrane. It is known that those intermediate filaments of the cytoskeleton at the hemidesmosomes that protrude from the basal keratinocytes are keratin 14 and keratin 5. A number of important molecules or antigens have been linked to hemidesmosomes including bullous pemphigoid antigen 1 (BPAG1, 230 kD), bullous pemphigoid antigen 2 (BPAG2, 180 kD), $\alpha 6 \beta 4$ integrin, and other molecules such as $\alpha 3 \beta 1$ integrin, $\alpha 2 \beta 1$ integrin, IFAP300, P200, etc (Fig. 1-7).

③ Gap junctions; these are 2-4 nm wide intercellular spaces between adjacent cells composed mainly of connexin units on the cell membrane. A total of 13 connexins have been described so far that can be classified into three groups: α , β and γ . The key function of these proteins is to connect adjacent cells by transporting small

(desmoplakin), 并与角蛋白纤维相连。后者主要是桥粒芯糖蛋白(desmoglein)和桥粒黏蛋白(desmocollin)。桥粒芯糖蛋白和桥粒黏蛋白通过桥粒斑珠蛋白(plakoglobin)和桥粒斑菲素蛋白(plakophilin)连接到桥粒斑蛋白。桥粒芯糖蛋白和桥粒黏蛋白的细胞外域彼此以相邻的表皮细胞间隙相连接。正常情况下,桥粒芯糖蛋白3比较常见且易于检测,位于基底层上的角质形成细胞间,而桥粒芯糖蛋白1主要位于角质细胞层下的角质形成细胞间。

电镜下,每一个桥粒包括两个相邻的角质形成细胞的三层胞质膜(trilaminar plasma membrane)及各自胞质内的1个电子致密的附着板以及细胞间黏合物质。

胞质膜:胞质膜厚约8 nm,显示有三层结构,内层或内小叶(inner leaflet)表现为一道纤细的电子致密线,与附着板紧密相邻,中层为一电子透明线,外层或外小叶(outer leaflet)也为电子致密线,表面直接与细胞间黏合物接触,这一覆盖于外小叶表面的黏合物质最致密的部分称为细胞表衣(cell surface coat),因细胞表衣和外小叶的致密度相差不多,所以通常不易在二者之间分出界限。

② 半桥粒,顾名思义,是桥粒的一半,是连接基底细胞与基膜的致密板的重要结构。基底层角质形成细胞内插入到半桥粒内的细胞骨架中间丝主要是角蛋白14和角蛋白5。半桥粒含有大疱性类天疱疮抗原1(BPAG1, 230 kD)、大疱性类天疱疮抗原2(BPAG2, 180 kD)、 $\alpha 6 \beta 4$ 整合素及其他分子如 $\alpha 3 \beta 1$ 整合素、 $\alpha 2 \beta 1$ 整合素、IFAP300、P200等(图1-7)。

③ 间隙连接:在间隙连接处相邻细胞间有2~4 nm的缝隙,间隙连接的主要成分是间隙连接蛋白,迄今已发现有13种连接蛋白,并分为3组即 α 、 β 和 γ ,其主要功能是连接细胞和转运小分子和