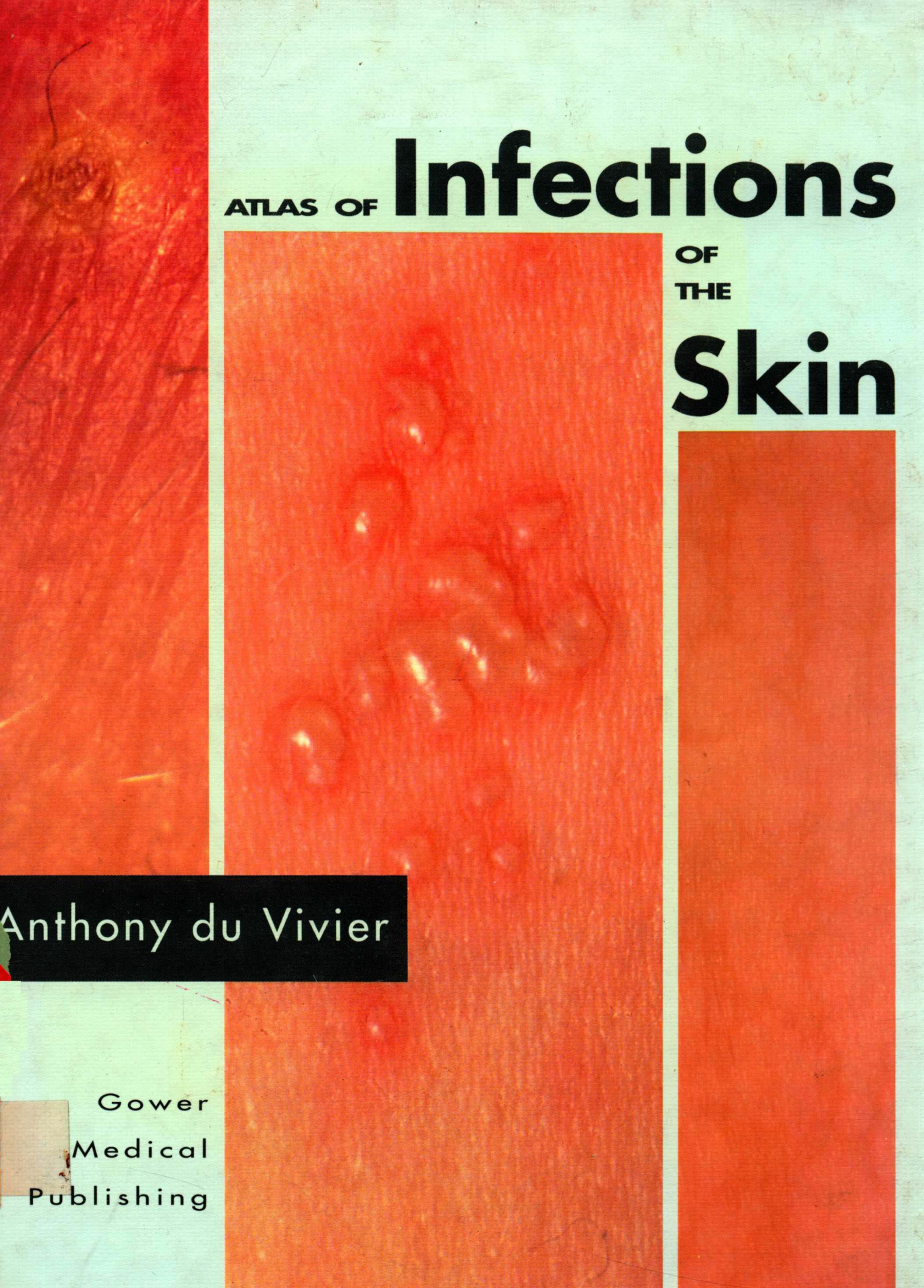
ATLAS OF Infections OF THE Skin



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PREFACE

Infections of the skin are common. Some are easy to diagnose, such as warts and impetigo, but others, for example superficial fungal disorders and scabies, are more subtle. The latter are frequently misdiagnosed and consequently mistreated with topical steroids, which inevitably makes them worse. This book illustrates and discusses common bacteriological, fungal and viral infections of the skin; and also includes infestations. Less common disorders endemic to tropical countries, such as leprosy and leishmaniasis, are also described because the migration of populations and the ease of modern travel have made their appearance in the West more frequent.

Dermatological disorders are difficult to visualize mentally from simple textbook descriptions. It is therefore to be hoped that the wealth of illustrations in this book will complement the text and aid diagnosis. The *Atlas of Infections of the Skin* should be of interest to general practitioners, microbiologists and dermatologists, as well as to students.

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London

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The vast majority of the illustrations are, unless otherwise stated, of patients under the care of myself or members of the department of dermatology at King's College Hospital, London. The photographs have largely been taken by the medical illustration department of King's College Hospital or myself. The rest come from the photographic departments of the hospitals where I trained viz. St. Bartholomew's, St. Mary's and St. John's, London. I particularly wish to thank therefore Mr. E. Blewitt, Dr. D. Tredinnick, Dr. P. Cardew, Mr. B. Pike, Mr. E. Sparkes and Mr. S. Robertson and their departments for the help they have given me over the years.

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I am indebted to Dr. Phillip McKee for his help regarding the biology and pathology of diseases of the skin included in this atlas and to Drs. Andrew Pembroke and Jeremy Gilkes, my colleagues, for their advice and support.

Finally the atlas is dedicated to my wife, Judith, who makes everything worthwhile.

All histopathology transparencies have been provided by Dr. Phillip McKee unless otherwise stated.

CONTENTS

1

Bacterial Infections of the Skin

IMPETIGO

This is a superficial cutaneous infection caused by either *Staphylococcus aureus* or a β-haemolytic streptococcus or both. It is particularly common in children and adolescents. The condition is highly contagious and will spread rapidly in any institution such as a boarding school or a nursery. The primary lesion is a vesicle or blister (Fig. 1.1) containing yellow pus (Fig. 1.2). It extends, becoming circinate or polycyclic (Fig. 1.3) before rupturing, and produces a yellow, honey-coloured crust (Fig. 1.4).

Fig. 1.1 Impetigo. The lesions start as blisters which contain pus and subsequently become eroded and crusted.

Fig. 1.2 Impetigo. The lesions ooze pus.

The lesions occur most often on the face (Fig. 1.5), but may be found anywhere on the skin. The condition is an acute one and autoinoculation causes it to spread to other sites. It most frequently arises

Fig. 1.3 Impetigo. The lesions may be polycyclic and heal centrally.

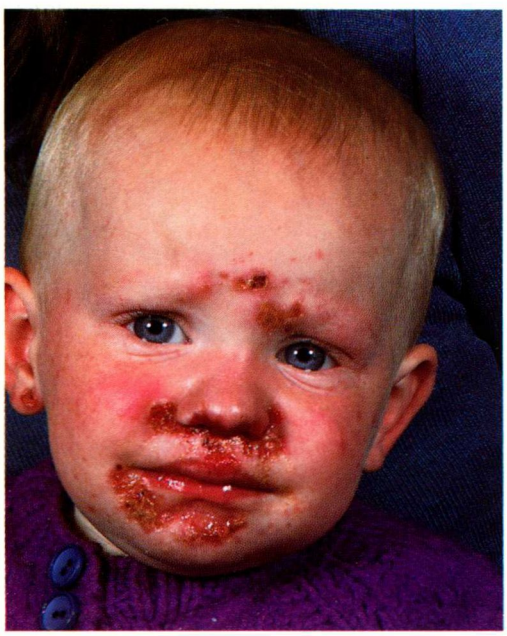

Fig. 1.4 Impetigo. The face is a common site. Golden crusts are present. Infants and children are particularly at risk.

de novo although predisposing causes, such as infestation and, in particular, pediculosis capitis or eczema (Fig. 1.6) may be present. Treatment with the appropriate antibiotic either topically or, more often, systemically will result in resolution of the condition within a day or so. Many staphylococcal infections

Fig. 1.5 Impetigo. The lesions may spread rapidly especially if topical steroids are inappropriately prescribed.

are resistant to penicillin so erythromycin is the usual choice of antibiotic. The streptococcal infections are sensitive to penicillin but also to erythromycin.

Fig. 1.6 Impetiginized eczema. Impetigo may occur as a secondary event. Eczema often becomes infected and yellow brown crusting results.

FOLLICULITIS

When correctly used, this term implies a superficial bacterial infection of the hair follicle. However, it is also used to describe sterile, follicular pustules from which pathogenic bacteria can not be recovered and which probably would be better classified as pseudofolliculitis.

Fig. 1.7 Folliculitis. Septic pustules have occurred under an occlusive dressing following a leg operation.

Fig. 1.8 Folliculitis. Discrete yellow pustules surrounded by erythema are a common complication of topical glucorticosteroid treatment of skin disorders. By courtesy of St. John's Hospital for Diseases of the Skin.

Bockhart's Impetigo

This is an acute, staphylococcal or streptococcal infection of the skin, seen particularly on the lower limbs of hirsute individuals (Fig. 1.7). It is also fairly common in patients using topical glucocorticosteroids for eczema and psoriasis (Fig. 1.8). Small, discrete, painful, yellow, follicular pustules are evident. The condition responds rapidly to appropriate systemic antibiotics.

Sycosis Barbae

This is a chronic deep-seated staphylococcal infection of the beard area (Fig. 1.9). It is only seen in men and is now very rare in Western societies, probably as a result of better hygienic conditions and the widespread availability and early use of antibiotics. There is, however, a common condition caused by ingrowing hairs which is frequently misnamed sycosis barbae.

Fig. 1.9 Sycosis barbae. Staphylococcal infection of the beard area is uncommon in Western societies probably because of improved hygiene and early use of antibiotics.

Fig. 1.10 Folliculitis secondary to ingrowing hairs. A sterile acneiform eruption develops secondary to ingrowing hairs. It is particularly common in negroes.

Folliculitis Secondary to Ingrowing Hairs

This condition is found commonly, but not exclusively, in negroes. The hairs in the beard area, particularly under the jaw, tend to grow back into the skin resulting in an acneiform, follicular, pustular eruption (Fig. 1.10). In negroes, this may result in keloid formation (Figs. 1.11 and 1.12). The disorder responds poorly to antibiotics although there may be a marginal response to long-term, low-dose antibiotics given in a similar manner as in the treatment of acne vulgaris. The condition can, however, be resolved by growing a beard, although this is not always acceptable.

Folliculitis of the Scalp

This is relatively common in negroes where yellow pustules are seen surrounding the hairs. Although *Staphylococcus aureus* is readily cultured from the lesions, the condition is not eradicated by treating with

Fig. 1.11 Keloids secondary to folliculitis. Keloids may result from the pseudofolliculitis associated with ingrowing hairs.

Fig. 1.12 Keloids secondary to ingrowing hairs in hirsute female.

the appropriate antibiotic. It tends to be recalcitrant and chronic with fresh lesions developing all the time and may well result in considerable keloid formation, particularly at the back of the neck (Fig. 1.13).

Pseudomonas Folliculitis

Outbreaks of folliculitis have been reported in the United States since 1975, secondary to the use of contaminated whirlpools. Pustules develop on the torso and limbs (Fig. 1.14) within 24–48 hours of exposure. *Pseudomonas aeruginosa* may be cultured from the pustules. The patient may be unwell with malaise and low-grade fever and lympadenopathy. Otitis externa, mastitis, ocular and urinary tract infections may also occur. Whirlpools are much more prone to contamination than swimming pools, partly because of difficulties in maintaining adequate chlorination of the water. The chlorine evaporates easily due to the high temperatures and continual agitation of the water by the pressurized jets of the jacuzzi. There is usually a high concentration of organic matter which encourages the growth of the bacteria and tends to reduce the chlorine to less-active forms. The heat of the water also dilates the follicular openings and facilitates the entry of the bacteria. The condition is self-limiting and the patient recovers in a week or ten days without treatment.

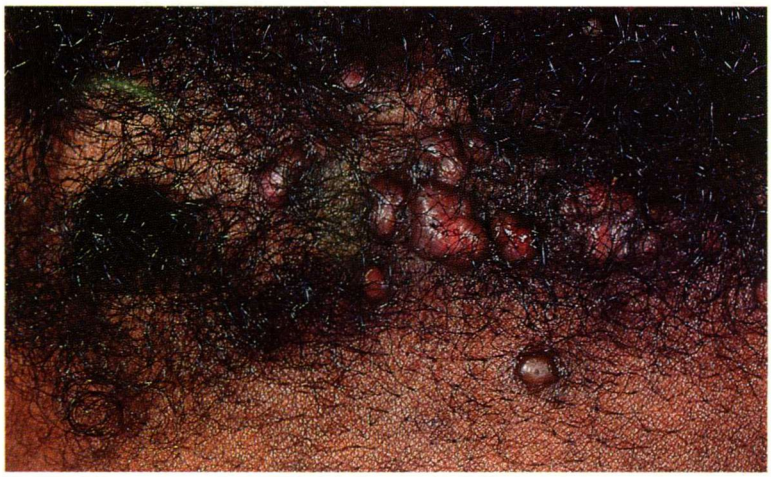

Fig. 1.13 Nuchal keloids. Folliculitis of the scalp often results in keloids especially at the back of the neck.

Fig. 1.14 Pseudomonas folliculitis. Widespread pustules surrounded by erythema may develop from the use of jacuzzis contaminated with *Pseudomonas aeruginosa*.

Folliculitis due to Acne and Oils

Sterile follicular pustules are common on the limbs, particularly the thighs, of individuals who have a tendency to acne and are hirsute. Those who wear tight, occlusive clothing or have an occupation where there clothes become contaminated with oil (Figs. 1.15 and 1.16) are prone to this kind of folliculitis.

Fig. 1.15 Folliculitis due to oils. Sterile acneiform papules and pustules develop secondary to follicular occlusion due to oils.

Fig. 1.16 Folliculitis due to oils. Hirsutism predisposes to this condition. The thighs are a common site particularly if oily tight-fitting trousers are worn. By courtesy of Dr. A.C. Pembroke.

Fig. 1.17 Furunculosis (boils). Painful red nodules are present in various stages of development.

FURUNCULOSIS (Boils)

This is an acute staphylococcal infection of the hair follicles (Fig. 1.17). It differs from folliculitis in that there is a greater degree of inflammation and the infection spreads away from the hair follicle into the surrounding dermis. Pus may become visible on the surface of the lesion as it evolves (Fig. 1.18) and will discharge either spontaneously or as a result of lancing. A deep abscess may leave scarring (Fig. 1.19). A carbuncle is a collection of boils such that multiple draining sites occur. The patient is usually unwell and has a fever. The condition responds rapidly to appropriate antibiotics. Occasionally, however, boils may become recurrent. In these cases the patient is usually a chronic carrier of staphylococci, either in the anterior nares, perineum or axillae, often acquired after a period of hospitalization. Swabs should be taken from these sites and the carrier sites treated with topical antibiotics for several weeks. It may be necessary to take an additional prolonged course of antibiotics, and also it is useful to sterilize the skin by adding hexachlorophane to the daily bath.

Although always recorded in textbooks, it is rare that a patient presenting with boils proves to have previously unsuspected diabetes mellitus, but it is routine practice to test the urine for glycosuria. Occasionally, immunosuppressed patients may present with boils.

Fig. 1.18 Furunculosis. The pus is pointing on the surface of this red tender module.

Fig. 1.19 Furunculosis. As the boil expands there is a peeling of the overlying skin.