

DERMATOLOGICAL MANIFESTATIONS IN TRAVEL MEDICINE

In the era of international travel, it is not surprising that we are faced with a multitude of dermatological conditions that are not indigenous to the country.



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Movement of individuals from the rest of the world as well as those returning from exotic holiday or business destinations has created new challenges in South Africa. We are also faced with numerous South Africans working in various parts of Africa and in other tropical areas as well as large numbers of tourists from various parts of the world, not to mention migrants and job seekers from neighbouring countries. When assessing travel-related dermatoses, it is important to note the country of origin, places visited *en route* and short stops as well as major locations visited. It may be important to ascertain the purpose of the visit, i.e. business or leisure, as well as any treatment given.

The principles of diagnosis of skin disease remain the same, but a broadened knowledge of some disease patterns not commonly seen in South Africa must be considered. If in doubt, experts should be consulted and one should not hesitate to investigate appropriately in order to obtain a correct diagnosis and to dispense the appropriate therapy. One of the most important issues that face us is the effect of HIV/AIDS on the presentation of any skin disorders, as the typical textbook presentations are often replaced by exaggerated or bizarre variations.

Time constraints in travellers may preclude standard investigations done in routine practice. Haematological, microbiological and histological investigations, however, can all be done urgently if requested, and should not be ignored just because the patient is not in town for long. Most patients have addresses to which results can be sent and further treatment instituted if warranted. In addition, a medical report stating all relevant clinical details, investigations and therapy should be given to all in-transit patients.

Skin problems in travellers may relate to previous medical history, climate, contact with allergens, infections, infestations, bites and stings or trauma. In addition, pre-existing dermatoses may relapse under certain circumstances.

The general conditions seen in those travelling from outside our borders will be dealt with briefly with special reference to unusual conditions that may present to the local doctor. In a review by Lockwood and Keystone¹ dermatoses presenting most frequently to a tropical disease unit in Toronto included secondarily infected insect bites, pyoderma, cutaneous larva migrans and nonspecific dermatitis. Making a diagnosis may be simplified by grouping the primary pathology according to the type of presenting lesions (Table I).

The average practitioner is unlikely to be familiar with the more obscure conditions, and referral to dermatologists, travel clinics, tropical disease experts or even entomologists may be indicated.

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It is beyond the scope of this article to discuss any of the dermatological conditions in detail — descriptions can be found in any standard text. Where appropriate, photographs will be included to provide a rapid diagnostic aid. This paper will however attempt to cover broad groups of diseases potentially facing the travel doctor.

CLIMATE-RELATED DISORDERS

Many travellers will either come from hot climates and have related conditions, or may react to the local summer climate with its varying levels of humidity. Common disorders include sunburn and intertrigo. Photosensitivity disorders may develop with sun exposure and a full drug history must be taken to exclude rashes in a photosensitive distribution. Grover's disease, also known as transient acantholytic dermatosis, presents as a pruritic eruption in the trunk and is thought to be provoked by heat. Another sun-induced condition is brachioradial pruritus. This presents as a pruritic condition affecting the brachioradial nerve distribution without any discernable evidence of an underlying condition. Other conditions aggravated by heat and humidity include fungal infections and some bacterial conditions such as folliculitis and impetigo.

Cold-related disorders are uncommon in southern Africa; however it is possible for a recent traveller to exhibit features of a cold-induced condition brought from their home environments or the unusual event of travellers to high mountains or arctic conditions. A good history will usually give many clues as well as indications of possible previous episodes. Cold-induced conditions include frost bite, perniosis, Raynaud's phenomenon and Raynaud's disease. Cryoglobulinaemia and cryofibrinogenaemia are rare and present as a form of vasculitis.

ALLERGIES

Allergic disorders are among the more frequent dermatological conditions in travellers. This may in part be due to the sudden onset and particularly distressing nature of these disorders. Exposure to unusual allergens or the increased intake of medications such as antimalarials may account for reactions. Contact dermatitis caused by

Table 1. Common causes of skin conditions in travellers grouped according to type of lesion³

Lesion type	Aetiology	Clinical features
Papules		
Arthropod bites	Mosquito	Pruritic weal and flare, papules
	Flea	Discrete papule with central punctum
	Bedbug	Papules in linear distribution
	Tick	Painful swelling with central necrosis or eschar
Scabies	<i>Sarcoptes scabiei</i>	Papules, burrows and excoriations
Prickly heat	None	Erythematous, vesicular eruptions around sweat glands
Onchocerciasis	<i>Onchocerca volvulus</i>	Pruritic papular rash
Linear lesions		
Cutaneous larva migrans	Animal hookworm	Pruritic serpiginous track
Bluebottle stings	Blue bottle	'Whiplash' - like erythematous rash
Vesicating beetles	Many species of beetle	'Whiplash' or 'splash' vesicles on exposed areas
Phytophotodermatitis	Many species of plant	Linear vesicular rash in areas of contact
Ulcers		
Ecthyma	<i>Staphylococcus aureus</i>	Vesicle or crusted papule
	<i>Streptococcus</i>	
Leishmaniasis	<i>Leishmania</i> sp.	Indolent, slow healing ulcer
Rickettsial eschar	<i>Rickettsia conori</i>	Small ulcer with black centre
Mycobacterial infection	<i>Mycobacterium marinum</i>	Violaceous nodule, late ulceration
Subcutaneous swellings		
Myiasis	<i>Dermatobia</i> , <i>Cordylobia</i> , etc	Larva protrudes from nodule

plant allergens presents as streaks of vesicles or bullae on an inflamed base. Urticaria is probably the most common disorder but not unique to travellers. It is however important to exclude more exotic causes such as unusual bowel parasites, malaria and medications as possible aetiological agents.

INFECTIONS

Infections in travellers present one of the biggest challenges. Most of the conditions will be similar to indigenous infections, with a few notable exceptions. Venereal diseases are becoming more frequent especially in travellers from Africa, possibly owing to the increased susceptibility in those compromised by HIV disease.

Bacterial infections

Common bacterial infections are no different in travellers to those found in others. They include streptococcal and staphylococcal conditions such as impetigo, ecthyma, furunculosis, folliculitis, erysipelas and cellulitis. Furunculosis must be differentiated from cutaneous myiasis and insect bites.

Treatment with routine antibiotics according to the most likely organism may be indicated, as time constraints of travellers may prevent appropriate culture and sensitivity testing in the short term.

Venereal diseases

Gonorrhoea and chancroid are diagnoses that can be made clinically. However, where doubt exists, swabs should be taken for culture and sensitivity. Immunofluorescent techniques make rapid diagnosis possible.

Rare conditions such as plague and brucella occasionally present with skin rashes.

Viral infections

Verruca vulgaris is unlikely to be a primary presentation; however when warts affect sensitive areas such as the genitalia, there may be some urgency to obtain treatment. Papillomavirus

Table II. **Arthropods and associated disorders⁴**

Insecta	
Lice	Typhus, relapsing fever
Fleas	Bubonic plague, tungiasis
Bedbugs	Pruritic papules
Flies	Cutaneous myiasis, leishmaniasis, trypanosomiasis, onchocerciasis
Mosquitoes	Malaria, viral conditions e.g. Sindbis Hypersensitivity reactions (bullae, papular urticaria)
Bees, wasps, ants	Stings, local reactions, hypersensitivity
Arachnida	
Spiders	Local necrosis (<i>Loxosceles</i> , <i>Chiracanthium</i>) Generalised reactions (<i>Latrodectus</i>)
Scorpions	Local necrosis with or without systemic reactions
Ticks	Tick-bite fever, Lyme disease, papular urticaria Local skin reactions, e.g. granuloma, hair loss, papular urticaria
Mites	Local reactions, e.g. secondary excoriation, papular urticaria

infections, condylomata and especially molluscum contagiosum are frequently seen in HIV patients, where facial lesions are a common presenting symptom in adult sufferers.

Arbovirus, Sindbis, dengue and West Nile fever present as fever and rash, often with arthralgia. Appropriate investigation is essential. Viral haemorrhagic disorders such as Lassa and Marburg infections represent a medical emergency and any suspected infections should be reported to the relevant authorities for investigation.

HIV/AIDS

The many faces of HIV may be present in any traveller. It is essential to be aware that the immune status of the individual will have a bearing on the clinical presentation of even common dermatoses. An attempt to ascertain the status of travellers is important in order to offer the most appropriate therapy.

Rickettsia

Tick-bite fever may develop in those bitten by infected ticks. The familiar eschar may not always be evident, but a travel history to relevant areas with an appropriate rash and fever developing 7 - 10 days after exposure should arouse suspicion. Rocky

Mountain spotted fever or tick typhus may present in similar ways in incoming visitors from those parts of the world where they are prevalent.

Treponemal diseases

Syphilis is the most common treponemal disease worldwide and the many manifestations of syphilis should be considered if appropriate. Yaws and Pinta are more common in South America and have specific features.

Lyme disease is rare in South Africa, but is present in many countries, including North America and Europe. A centrifugally spreading annular eruption should arouse suspicion and appropriate therapy with penicillin or tetracycline should be instituted if serology is positive. Serology for Lyme disease is available at major laboratories in South Africa.

Mycobacteria

Tuberculosis of the skin is rare but the presentations include lupus vulgaris, scrofuloderma and tuberculoses. Less common mycobacterium infections such as fish tank granuloma are rare.

Leprosy is still endemic in some areas of the world. It is unlikely that the average practitioner will have to deal

with severe cases of lepromatous leprosy; however, the more subtle hypopigmented anaesthetic areas must not be ignored.

Protozoal diseases

Leishmaniasis occurs in many parts of the world including the old and new worlds. A history of travel, for example to the Middle East or South America, in a patient presenting with a non-healing ulcer or granulomatous condition needs further investigation (Fig. 1). Malaria may also present with a pruritic rash.²



Fig. 1. Leishmaniasis.

Fungal infections

Very few fungal infections are likely to present as an emergency in visitors to this country. The many common manifestations however may be present in patients presenting for other reasons. These include dermatophytes infections, onychomycosis, pityriasis versicolor, and candida infections.

Deep fungal infections may be more of a challenge and, once again, the presence of HIV may complicate the diagnosis.

Histoplasmosis results from infection with *Histoplasma capsulatum* or the closely related *H. dubosii*. This is widely distributed throughout the world. It has been isolated from soil, especially where contaminated with chicken feathers or droppings. Bats are thought to be reservoirs of infection and spores may be found in caves. Histoplasmosis usually presents as a pulmonary infection; however, cutaneous lesions such as granulomatous nodules or plaques may be present. Other rare conditions such as blastomycosis and chromomycosis are occasionally encountered. Actinomycosis

forms characteristic sulphur granules affecting the cervicofacial area, thorax or abdomen.

INFESTATIONS

We often associate travel to foreign parts with exotic worms and infestations, although these conditions do not present frequently. Parasitic roundworms include conditions such as onchocerciasis, larva migrans (Fig. 2), dracunculosis, loiasis, strongyloidiasis and filariasis. Flat worms include cysticercosis, taeniasis, sparganosis and schistosomiasis. Each of these has cutaneous manifestations, and standard texts should be consulted for details.



Fig. 2. Cutaneous larva migrans (sandworm).

Trypanosomiasis or sleeping sickness is endemic in a broad band encompassing central Africa. Cutaneous features include the trypanosomal chancre, as well as fleeting erythematous circinate eruptions found especially on the chest and back.

Protozoa causing diseases such as leishmaniasis are distributed in the tropics of South America, western and north Africa and the Middle East, as well as parts of Asia. There are endemic areas in Namibia. The manifestations are varied depending on the type of organism and whether it is of the 'old' or 'new' world variety and include wet and dry types.

SKIN DISEASES CAUSED BY ARTHROPODS AND OTHER NOXIOUS OR VENOMOUS CAUSES

The manifestations of this group of conditions are extensive, and only a brief overview is possible. Many hundreds of species of arthropod are

known to cause skin diseases, and many of these will be encountered by travellers here and abroad. Table II lists some of the arthropod-associated disorders. They produce their effects by various mechanisms including mechanical trauma, and injections of harmless substances into a host resulting in allergic responses, injection of harmful or toxic substances (e.g. bees or spiders). Secondary infection may result from excoriation of bites or stings, and in some cases the host tissue may be invaded by larvae. Reactions may occur to retained mouth parts and blood-sucking insects may transmit diseases. Owing to the acute nature of bites and stings, they are among the more frequent dermatological presentations. They are often non-specific in nature, and a combination of experience, a thorough examination, a good history and appropriate clinical manifestations is needed to reach the correct diagnosis.

The most common reaction pattern is that of papular urticaria. It is a non-specific reaction to a number of insect bites in susceptible sensitised individuals (Fig. 3).



Fig. 3. Multiple mite bites.

Mosquitoes and flies account for many reactions but the clinical features are variable.

Myiasis (Fig. 4) is the result of fly larvae hatching in the skin. Many species of flies are responsible for this condition and two major clinical forms are seen, namely the furuncular form and the creeping form. Closer examination of the furuncular form may reveal the presence of a larva moving in the furuncular opening. Application of petroleum jelly will suffocate the larva, and cover with a broad-spec-

trum antibiotic is needed. The larva may be sloughed off spontaneously, but physical removal is occasionally needed.



Fig. 4. Cutaneous myiasis.

Tungiasis (Fig. 5) is frequently seen, especially in tourists to beaches in Mozambique and Zanzibar. Lesions are normally found on the feet, in the skin between the toes and under the toenails. The pregnant flea needs to be evacuated from the skin, often under anaesthesia as it becomes painful as it enlarges. Pediculosis is caused by sucking lice of the order Anoplura. Infestations of the scalp, body and pubic areas are caused by different species, each of which is site-specific.



Fig. 5. Tungiasis.

Cimex lenticularis (bed bugs) may be present in overnight dwellings used by unsuspecting travellers. The bites are not immediately painful and may not wake the sleeper. Papules are often distributed in a linear fashion on the face, neck and limbs.

Other bugs and beetles that may be responsible for cutaneous reactions include the Reduviid bug of Central and South America and a variety of vesicating beetles which may cause 'whiplash'-like bullae owing to crushing of the cantharadin-containing vesicant found in the wings of these beetles (Fig. 6).

Scabies is one of the more common skin conditions caused by arthropods

(Fig. 7). Anyone presenting with a very pruritic rash involving the finger web-spaces should be examined with this diagnosis in mind, especially if other contacts are also affected.

Spiders are frequently blamed for a host of ill-defined wounds, but confirmed bites are uncommon. Before blaming the poor arachnid, a sound clinical knowledge of the manifestations and natural history of bites of the different species is necessary. Mosquitoes, fleas and midges are responsible for many of the nonspecific discrete papular reactions seen in clinical practice.



Fig. 6. Blister beetle lesions on neck.



Fig. 7. Scabies.



Fig. 8. Jellyfish sting.

SEA-RELATED DERMATOSES

Jelly fish, coral and sea urchins may all cause injuries to travellers. The whiplash-like erythematous lesions in bathers indicate a possible jelly fish reaction, while slow healing or suppurating wounds in divers may indicate a foreign-body response to coral or sea urchin spines.

The conditions listed above represent only a small number of those that travellers may develop. The entire gamut of dermatological conditions is possible, and this group presents a real challenge to even the most experienced of dermatologists.

References available on request.

Further reading

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IN A NUTSHELL

Many conditions that are not frequently seen in a particular country may present as a result of increased international travel.

Appropriate investigations and consultation with experts may be needed in order to make the correct diagnosis and provide correct management.

Climate-related disorders include both heat- and cold-related disorders.

Allergic disorders are commonly seen, owing to their sudden onset and distressing nature.

Infectious disorders represent one of the biggest challenges, particularly as HIV may change the typical nature of these conditions.

Exotic conditions such as unusual viral exanthems, deep fungal infections, atypical rickettsial diseases and Lyme disease must be considered depending on the country of origin.

Infestations with worms or protozoa are uncommon and are related to the country of origin.

Arthropod bites may result in many different skin manifestations.