CASE NOTES

Bites & Infections on the Foot

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As family doctor and practice nurse consultations become elusive within the NHS, patients are self-referring to pharmacists and podiatrists for foot and ankle conditions traditionally dealt with in medical primary care. In the holiday season in particular, bites, stings, bumps and minor trauma present to local podiatrists with some imported from abroad. Often trivial, annoying and some self-healing, any intrusion into skin tissue can potentially bring infection, a serious risk to the diabetic, elderly patient, those with an allergic predisposition, or immunity deficiency. Associated cellulitis and skin breakdown threatens mobility in vulnerable seniors and a minor health condition can significantly affect daily living. Insect bites can result in Lyme disease, or imported tropical infections. Bed-bugs, fleas, ticks, insects and many foreign vectors can attack toes, ankles and lower legs. Diagnosis can be apparent, but can be challenging. Appropriate identification and management can pre-empt more serious disease and loss of mobility. Bites from fleas bed-bugs, ticks, mosquitos are possible causes and potential vectors. A history of recent foreign travel should be noted.

Case History 1

An elderly, diabetic man complained of pain and itch in a great toe which was interfering with his walking. He stated he had banged his right foot, then added he had been troubled in the past with gout affecting a great toe and had been treated for fungal nail infection in the past. He had recently been swimming and walking bare foot on the sand in the Caribbean islands.

On examination, he was walking with a slight limp, the nails of one foot were yellowed and crumbly with the great toenail showing onychogryphosis. On the other foot there was evidence of fungal infection in the web of the small toe, the skin was indurated and moist suggestive of tineal invasion. On the side of the great toe beside the nail, there was a lesion which was itchy and nodular with swelling around the nail and a red line on the skin of the foot. On questioning further, he thought he might have been bitten and the insect had left black mark on the skin. Over a few days, the lesion had shrunk in size, turned brown, and wrinkled.

He was presenting with multiple pathology and had chronic fungal infection of the left foot with nail damage and acute tinea infection of the right foot round the small toe. He also had been bitten by an exotic insect accounting for the pain experienced. The parasitical infestation of T. tungiasis is native to Central and South America, and sub-Saharan Africa and can have significant impact on its host. It results from skin penetration by a sand (or jigger) flea usually between the toes or under toenailsT. penetrans is the smallest known flea and minute Tungiasis lesions almost always occur on the feet (97%) with toes afflicted over 70% of the time.[1] The burrowing process is asymptomatic, but the flea increases in size in about 2 weeks, creating a pruritic, or painful nodular lesion from which eggs and faeces are excreted. The flea then dies and is sloughed with the hosts' skin over several weeks [1.2.3]

Differential diagnosis: Fungal skin infection, gout, trauma, tungiasis

Therapy: Oral antihistamines, topical steroids, antibiotics effective against bacterial skin infection, booster for tetanus [4]

Management: He was prescribed an antifungal cream, an antihistamine and an antibiotic. Reviewed again three weeks later the lump had disappeared.

Case history 2

An overweight 50 year old lady complaining of swelling of the feet and legs and an intense itch on the ankles and feet and top of feet sought treatment. She had just returned from a hotel stay in Paris and had experienced long airport delays. Examination of very swollen legs revealed postural oedema associated with the flight and travel, but there were also nine small patches of inflammation and induration on her feet and ankles from bites. She had been scratching the lesions and there was an area of cellulits stretching to mid-calf. She was the victim of bed bugs. Hotel infestation in cities, particularly in France, has been a public concern this summer, but there is a risk of bed bug bites in most city hotel locations and overnight accommodations worldwide.

BEDBUGS: (Cimex lectularius) are blood-sucking insects that live in cracks and crevices - a presence not determined by cleanliness of local environment. They are small, flat, wingless insects, reddish-brown in colour approximately 5mm.long, before feeding and look like lentils. Resilient, they can survive for up to a year without feeding and may occur in any housing, but are common in hotels or hostels. They prefer crevices in fabric or wood, over plastic and metal and hide under mattresses, bed headboards and joints. Attracted by body heat and carbon dioxide, they crawl out at night to bite exposed skin and feed on blood, People?develop itchy red bumps. 15 to 30 minutes after being bitten, which can last for several days. Bites occur on face, neck and extremities and may occur in straight lines.[4] Although bites are intensely itchy, they do not transmit human diseases but scratching can lead to infection and cellulitis.

Management: Antihistamine tablets and ointment to relieve pruritus

If infected clothes, or bedlinen:- wash in water at 60C, or use dryer on hot setting for 30 minutes Use insecticide spray specially designed for bedbugs – many now are ineffective as bugs build resistance to them. Ordinary insect repellent for mosquitoes and ticks is not effective antibiotics effective against bacterial skin infection, booster for tetanus [4]


unfed


fed (gorged)

TICKS: Ticks are small, blood-sucking arthropods related to mites with some feeding on human blood. Most likely to bite humans in Britain are Sheep tick, Ixodes ricinus.[5]. and deer tick Ixodes scapularis. inhabiting wood/heathland moorland, rough pasture, forests and urban parks. Imported ticks from Europe and N America can carry different diseases. [7-10] The tick bite is usually initially painless, then after 12 hours becomes itchy. People are often only aware they have been bitten when they see a blood filled tick attached to skin. The risk of infection increases the longer the tick is attached, but this can happen at any time during feeding, with Lyme borreliosis and Rickettsiosis possibilities.

2,000 to 3,000 new cases of Lyme disease occur in England and Wales annually with 15% of cases infected while people are abroad.[8.11] 60% of people with early-stage Lyme disease develop a distinctive circular rash - erythema migrans - at the site of the tick bite, usually around three to 30 days after being bitten. Some also experience flu-like symptoms in the early stages.The prognosis for Lyme disease is generally good. Even when not treated it is frequently self-limiting and resolves spontaneously. Ticks are often imported in the skin from abroad in returning holiday makers and these bring the risk of tick-borne encephalitis.

Management: Active search for bites and insects.
Removal of the tick with forceps as soon as possible after discovery. It is very important to remove the head.
Application of antiseptic ointment. If evidence of erythema migrans – the herald patch - refer to medical service.

Antibiotic treatment (doxycycline, amoxicillin) in people with early Lyme disease is highly effective Resolution of signs and symptoms have been reported in up to 90% of people with early Lyme disease in randomized controlled trials 8.9.11

MIDGES: Not all species of midge bite – but the worst offender is the Highland biting midge ***C. impunctatus,*** which is not a vector of disease in humans[12]. Midges fly in swarms and multiple bites are likely with numerous attacks on exposed areas of skin such as legs and bare feet. Some people react badly with a serious allergic reaction, even anaphylaxis. Midge bites are very itchy and annoying. The bloodsucking female punctures the skin which forms the centre of an inflamed red weal and a papule. In some people this is little more than a small spot - for others it becomes a large blister and scratching can bring infection and cellutlis in oedematous extremities. The main biting season is July to October.

Treatment: Calamine lotions such as caladryl
Antihistamine tablets
Corticosteroid s may be necessary for anaphylactic reactions
Antibiotic cream for infected lesions.

There's no reliable way to stop midge bites. Neem oil or "jungle juice " appear to have some deterrent value. The volatile oil from bog myrtle has been shown to have a repellent effect[13]. The wearing of light coloured clothing , long trousers and a face veil attached to a brimmed hat can reduce exposure.

PULEX IRRITANS (human flea) There is no flea specific to humans, and only a fraction of all fleas regularly come into contact with humans. Many however, associate with domesticated animals and pass to humans often biting exposed feet and ankles.

Diagnosis: The skin reaction to flea bites is delayed. The lesion initially is a punctuate, haemorrhagic area representing the site of probing by the insect. Lesions may occur in clusters, as the flea explores the skin. There is a wheal around each bite, reaching its peak in 5 to 30 minutes. Pruritus is almost always present. There is usually a transition to a hardened papillar lesion within 12–24 hours. In hypersensitive individuals the reaction appears faster, persisting for a week or more. Intense itching drives people to ealth professional consultation

Treatment: Antihistamine or, anti-inflammatory preparation occasionally an antibiotic if scratching brings bacterial infection.

MOSQUITOS: Returning holiday makers from mosquito-endemic countries presenting with bites to ankles and feet may find them annoying and only require antihistamine medication, but the podiatrist has to keep in mind the risk of fever and malaria.

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