



Dermatology Elective in Sydney, Australia

Undergraduate Elective Prize/Project Grant Report - Winter 2018

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I am extremely grateful to the British Association of Dermatologists for awarding me this Elective Prize. I would also like to thank everyone at the Department of Dermatology at Concord Repatriation General Hospital (CRGH) for being so welcoming.

My elective consisted of a 6-week placement in the Department of Dermatology at CRGH in Sydney. This was primarily a clinical placement, but I chose to also do a small project to make the most of this experience and complement my clinical learning. After seeing two patients with interesting but under-recognised mite infestations, my supervisor (Prof Stephen Lee AM) suggested doing a review of the literature into the role of these types of mite, *Demodex* and avian mites, in skin disease.

There are two species of *Demodex* mites that are normally found on human skin, *Demodex folliculorum* often found on the face, and *Demodex brevis* predominantly found on the trunk. The role of *Demodex* mites in human disease has been controversial, but several studies suggest a role in diseases such as folliculitis, otitis externa and rosacea. Immunosuppressed patients are more susceptible, where a higher density of mites are present and patients symptoms are more severe. These commensal organisms are found increasingly with age, being present in 13% of patients 3-15 years old but 95% of those older than 71 (Czepita et al., 2005). A possible pathogenic mechanism may include the mites acting as vectors for bacteria, which in turn stimulate leucocytes leading to the inflammatory reaction in inflammatory skin disease (Elston and Elston, 2014). Key evidence to the role of *Demodex* in patients with skin disease would be prompt response to anti-demodectic therapy such as ivermectin, permethrin and topical sulphur.

There are several types of avian mites. These are temporary haematophagous ectoparasites that normally feed on the blood of birds. When their host bird is not available they may feed on humans, but are unable to complete their life cycle on humans. These mites can cause intense itching due to an inflammatory reaction to their saliva (Hobbenaghi et al., 2012) and sometimes even a painful dermatitis. Non-specific erythematous or urticarial papules may be seen, often on the limbs. Three common species of avian mites are *Ornithonyssus bursa* (often called the 'Starling mite'), *Ornithonyssus sylviarum* (the 'northern fowl mite') and *Dermanyssus gallinae* ('the chicken mite') (Doggett and Geary, 2003). As these mites predominantly live on birds, the prevalence of human disease related to these mites varies with geographical location. The mites often come into contact with humans due to the presence of nests in and around places of residence or via occupational exposure. The differential diagnosis for itchy bites is wide meaning that diagnosis is often delayed and difficult. Diagnosis may be achieved by isolating and identifying the mite. However, the mite is often not found meaning a high degree of clinical suspicion is required. Correct diagnosis of avian mites is important as once the source of the mites has been eliminated, the infestation is generally self-limiting. However, it has been suggested that several species of avian mites may also act as a vector, further implicating their role in disease (Collgros et al., 2013).

These two cases show the variety dermatology has to offer. They also exemplify the importance of the multi-disciplinary team, with pathology lab reports being a key part of modern dermatological practice. Furthermore, they show the rewarding nature of the speciality as clear diagnoses and simple treatment measures can lead to relief of symptoms and vast improvements in quality of life for patients.

My clinical placement included time in outpatient clinics, minor operations and seeing Dermatology inpatients. I was able to see patients with a wide range of diseases including skin malignancy, immunobullous disorders and eczema and psoriasis. I also saw patients with several rarer conditions including Sneddon-Wilkinson disease, Sweet's syndrome and calciphylaxis. One interesting sub-speciality of dermatology I was keen to get some more experience in was skin malignancy. In particular, this placement has allowed me gain experience in history taking, full skin examinations and dermoscopy. Furthermore, assisting in biopsies was especially interesting.

Key learning points from this placement would include the need to always consider a wide differential. This was evidenced by seeing skin cancer patients who were relatively young, had darker skin and those with deceptive lesions such as amelanotic melanoma. This highlights the need to always consider and rule out serious aetiology.

Furthermore, the need for a thorough history and examination was exemplified by patients who presented for mole checks. Due to the harsh Australian sun and the lack of importance given to sun protection several decades ago, many patients had several suspicious looking lesions. I hope to take this conscientious approach in my future career in order to provide the best care for my patients.

In summary, this has been an excellent experience that I am sure will have a long-lasting impression on me. It has further solidified Dermatology as a career choice for me and provided several wide-reaching learning points.

- COLLGROS, H., IGLESIAS-SANCHO, M., ALDUNCE, M. J., EXPÓSITO-SERRANO, V., FISCHER, C., LAMAS, N. & UMBERT-MILLET, P. 2013. *Dermanyssus gallinae* (chicken mite): an underdiagnosed environmental infestation. *Clin Exp Dermatol*, 38, 374-7.
- CZEPITA, D., KUŻNA-GRYGIEL, W. & KOSIK-BOGACKA, D. 2005. [Investigations on the occurrence as well as the role of *Demodex folliculorum* and *Demodex brevis* in the pathogenesis of blepharitis]. *Klin Oczna*, 107, 80-2.
- DOGGETT, S. & GEARY, M. 2003. Human infestation with birds mites in Wollongong. *Commun Dis Intell Q Rep*, 27, 394-5.
- ELSTON, C. A. & ELSTON, D. M. 2014. Demodex mites. *Clin Dermatol*, 32, 739-43.
- HOBENAGHI, R., TAVASSOLI, M., ALIMEHR, M., SHOKRPOOR, S. & GHORBANZADEGHAN, M. 2012. Histopathological study of the mite biting (*Dermanyssus gallinae*) in poultry skin. *Vet Res Forum*, 3, 205-8.