Title: Erythema annulare centrifugum associated with chronic lymphocytic leukaemia

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Sir, A wide range of conditions have been described as causing or being associated with erythema annulare centrifugum (EAC)[1]. We describe a case in which the simultaneous diagnoses of EAC and chronic lymphocytic leukaemia (CLL) were made, an association not previously reported.

A 74-year old woman presented to dermatology with a 3-week history of pruritic skin lesions affecting her upper back, upper arms, buttocks and thighs. On examination there were several annular and arcuate erythematous plaques with central clearing and no scales (figure 1), consistent with an annular erythema.

She was concurrently referred with a lymphocytosis and diagnosed with Stage A(0) CLL, which did not require active treatment. The white cell count was 16.2 x 10^9/L (normal 4.0 to 11.0 x 10^9/L) with a lymphocytosis of 7.5 x 10^9/L (normal 1.0 to 4.0 x 10^9/L). The leukaemic cells expressed an immunophenotype consistent with CLL (CD19+/CD5+, CD23+ and weak surface immunoglobulin but unexpectedly expressed CD20 and FMC7 strongly). Interphase fluorescent *in situ* hybridisation studies showed trisomy 12 as the sole abnormality in 24% of cells.

The concurrent presentation of an annular erythema and CLL in this patient prompted suspicion that they might be linked. Cutaneous lesions in patients with leukaemia can be non-leukaemic (or “non-specific”) such as infections, drug reactions, vasculitis or secondary to a haemorrhagic diathesis[2]. More rarely, neoplastic lymphocytes are found within the skin and these lesions are known as

leukaemia cutis (or “specific” lesions). In the context of CLL, both cutaneous findings in general[3] and specific, leukaemic cutaneous infiltrates[4] have been reviewed.

An initial skin biopsy in our case showed a moderately intense superficial perivascular infiltrate composed predominantly of lymphocytes with several eosinophils. The epidermis showed focal spongiosis containing occasional eosinophils. A second biopsy showed similar changes but with minimal spongiosis, a more closely clustered arrangement of the infiltrate around superficial blood vessels and very few eosinophils (Figure 2). No fungi were seen in PAS stained sections. Direct immunofluorescence on perilesional skin, taken to screen for early bullous pemphigoid, was negative. Immunocytochemistry demonstrated that the infiltrate was predominantly CD3 and CD5 positive, confirming a predominance of T cells, and CD23 negative, thus excluding leukaemia cutis. Interestingly, the first biopsy coincided with a peripheral blood eosinophilia of 2.27 (normal 0.04 to 0,4) x 10^9/l, but this was resolving by the time of her second biopsy, and prior to treatment.

Having ruled out more specific categories of annular erythema (erythema chronicum migrans, erythema gyratum repens, erythema marginatum), and those associated with anti-SSA (anti-Ro) and anti-SSB (anti-La) antibodies[5], a diagnosis of EAC was made. The pathological findings favour what has been controversially termed “superficial” EAC in which the dermal infiltrate is superficial, spongiosis is found in 80% of cases and eosinophils are observed in around one third of cases[6]. Our patient’s skin lesions did not respond to potent topical steroids but to a reducing course of oral prednisolone starting at 30 mg daily.

EAC has been associated with drugs and a wide variety of disorders including infections, endocrine and immunological disorders, haematological and other neoplastic disorders[1]. Annular erythemas have been described as the clinical

presention of bullous pemphigoid[7] and hypereosinophilic dermatitis[8] in two patients with CLL but to the best of our knowledge, EAC *per se* has not been described in association with CLL. Although this association may be coincidental, the close temporal association prompts us to speculate that EAC in this case was a non-specific manifestation of CLL.

References

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Legends

Legend figure 1: Annular (a) and arcuate (b), well circumscribed erythematous plaques with raised edges and central clearing.

Legend figure 2: A skin biopsy showed a superficial perivascular infiltrate (a, magnification x 4) composed predominantly of lymphocytes with occasional eosinophils (b, magnification x 40).