

Erythema Annulare Centrifugum in a Patient Operated on for Breast Carcinoma

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SUMMARY A 73-year-old Caucasian female patient presented for three annular erythematous lesions on the left leg and buttock, persisting for two months, clinically interpreted as erythema annulare centrifugum. Routine laboratory findings were within the normal ranges, *Borrelia* serology and wet mount microscopy for mycosis were negative. Histologic examination confirmed the diagnosis of superficial erythema annulare centrifugum. Since no association of erythema annulare centrifugum with concomitant bacterial or viral infections, or active systemic disease was found in our patient, we considered the possible activation of her previous breast cancer operated on in October 2000.

KEY WORDS: erythema annulare centrifugum, breast cancer, paraneoplastic association

INTRODUCTION

Erythema annulare centrifugum (EAC), first described by Darier in 1916 (1), belongs to the group of figurate erythematous dermatoses with uncertain multifactor etiology and chronic course. Clinically, the lesions are annular or figurate with raised borders and spread peripherally with a tendency of central clearing. EAC is a rare syndrome estimated to affect one case *per* 100,000 population *per* year (2), and according to our literature search, our case might be the second one with proposed association with breast carcinoma.

CASE REPORT

A 73-year-old Caucasian female patient presented to our Department of Dermatology and Venereology for the presence of three erythematous, annular lesions, which appeared two months

before and involved the left leg (Fig. 1) and buttock (Fig. 2). The cutaneous lesions were clinically diagnosed as EAC. Routine laboratory findings were within the normal ranges, *Borrelia* serology and wet mount microscopy for mycosis were negative. Histologic examination revealed edema of the papillary dermis and perivascular infiltrate of lymphocytes and histiocytes around the superficial vessels, confirming the diagnosis of superficial EAC (Fig. 3). We did not find any association of EAC with concomitant bacterial or viral infections, or active systemic disease in our patient, and she denied taking systemic medication for any reason. In her past history, the patient underwent mastectomy with regional lymph node dissection for breast cancer in October 2000. No clinical sign of an active underlying neoplastic process was



Figure 1. Annular erythematous macular lesion on the left leg of our patient

diagnosed at the time of hospitalization at our department. We referred our patient for neoplastic screening, which found no data of neoplastic activity so far. The cutaneous lesions moderately improved after treatment with potent local steroids.

DISCUSSION

Erythema annulare centrifugum is classified into superficial (as in our patient) and deep (non-scaling) types (3), and is often idiopathic or provoked by benign factors, in contrast to erythema gyratum repens, which is believed to be exclusively paraneoplastic expression. The pathogenesis of EAC remains unclear, proposing the role of Th1 mediated reaction to a variety of infective agents (bacterial, mycobacterial, viral, fungal (4), and parasitic), medications, systemic diseases (Graves disease, liver disease, hypereosinophilic



Figure 2. Two annular lesions involving the left leg and buttock.

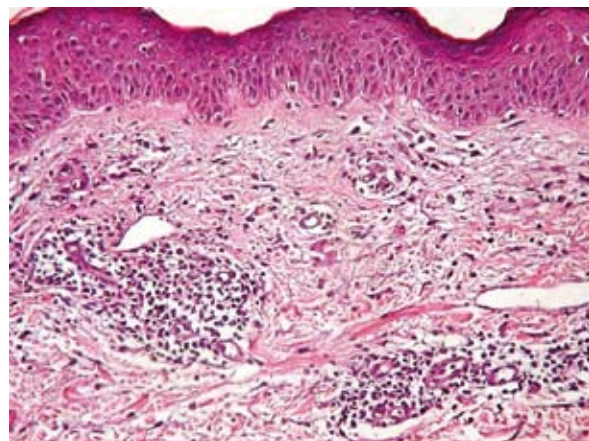


Figure 3. Papillary dermis edema and perivascular lymphocytic and histiocytic infiltrates compatible with superficial erythema annulare centrifugum HE x 40.

syndrome, sarcoidosis), food substances (blue cheese), and malignancy. Among paraneoplastic diseases, EAC is mainly associated with Hodgkin (5) and non-Hodgkin lymphomas (6), acute leukemia (7,8), gastric (9), lung (10) and prostatic carcinomas (11), and carcinoid tumors (12). The association of EAC and breast cancer, however, is an extremely rare observation.

Recently, Panasiti *et al.* (13) have reported on an interesting case of a 74-year-old woman, which they claim to be the first case of superficial type EAC associated with breast cancer. Since no association of EAC with concomitant infections or internal diseases was found in our patient, except for the history of breast cancer operated on nine years before, we considered the possible activation of the previous neoplastic condition. Moreover, both patients are almost of the same age and share some similarities in the course of disease. In contrast to the case presented by Panasiti *et al.* (13), in our patient it was difficult to prove definite relationship between the previous, currently clinically inactive neoplastic disease, i.e. breast cancer, and the superficial form of EAC. Nevertheless, we share the observation of Drake *et al.* (14) that physical examination and imaging techniques may fail to detect early stages of cancer activation in patients with paraneoplastic syndromes. Therefore, neoplastic screening may not exclude an early relapse of the neoplasm and we will continue to monitor our patient in the future.

In conclusion, the above mentioned clinical cases strongly support the possible pathogenetic role of breast carcinoma in provoking EAC lesions in some patients.

References

1. Darier J. De l'érythème annulaire centrifuge et de quelques éruptions analogues. *Ann Dermatol et Syphilograph* 1916;5:57-8.
2. Mahood JM. Erythema annulare centrifugum: a review of 24 cases with special reference to its association with underlying disease. *Clin Exp Dermatol* 1983;8:383-7.
3. Weyers W, Diaz-Cascajo C, Weyers I. Erythema annulare centrifugum: results of a clinicopathologic study of 73 patients. *Am J Dermatopathol* 2003;25:451-62.
4. Alex MP, Mohan L, Singh KK, Mukhija RD. Erythema annulare centrifugum due to candida infection. *Indian J Dermatol Venereol Leprol* 1999;65:283-4.
5. Yaniv R, Shpielberg O, Shpiro D, Feinstein A, Ben-Bassat I. Erythema annulare centrifugum as the presenting sign of Hodgkin's disease. *Int J Dermatol* 1993;32:59-61.
6. Carlesimo M, Fianza L, Mari E, Pranteda G, Cacchi C, Veggia B, *et al.* Erythema annulare centrifugum associated with mantle B-cell non-Hodgkin's lymphoma. *Acta Derm Venereol* 2009;89:319-20.
7. Gündeşlioğlu AO, Ertaş NM, Celebioğlu S, Hücümenoglu S. Erythema annulare centrifugum: an unusual presentation for acute leukaemia. *Plast Reconstr Surg* 2004;113:798-9.
8. Miljković J, Bartenjev I. Hypereosinophilic dermatitis-like erythema annulare centrifugum in a patient with chronic lymphocytic leukaemia. *J Eur Acad Dermatol Venereol* 2005;19:228-31.
9. Lee HJ, Chang SE, Lee MW, Choi JH, Moon KC, Koh JK. Metastatic gastric carcinoma presenting as an erythema annulare centrifugum-like lesion. *J Dermatol* 2008;35:186-7.
10. Monsieur I, Meysman M, Noppen M, de Greve J, Delhove O, Velckeniers B, *et al.* Non-small-cell lung cancer with multiple paraneoplastic syndromes. *Eur Respir J* 1995;8:1231-4.
11. Dupré A, Carrère A, Bonafé JL, Viraben R, Christol B, Lassère J. Erythema annulare centrifugum of the legs symptomatic of prostate adenocarcinoma; a specific paraneoplastic syndrome? *Ann Dermatol Venereol* 1979;106:789-92.
12. Everall JD, Dowd PM, Ardan B. Unusual cutaneous associations of a malignant carcinoma of the bronchus-erythema annulare centrifugum and white banding of the toe nails. *Br J Dermatol* 1975;93:341-5.
13. Panasiti V, Devirgiliis V, Curzio M, Rossi M, Roberti V, Bottoni U, *et al.* Erythema annulare centrifugum as the presenting sign of breast carcinoma. *J Eur Acad Dermatol Venereol* 2009;23:318-20.
14. Davis MD, Ahmed I. Ovarian malignancy in patients with dermatomyositis and polymyositis: a retrospective analysis of fourteen cases. *J Am Acad Dermatol* 1997;37:730-3.