Neutrophilic Eccrine Hidradenitis Induced by Cytarabine

INTRODUCTION

Neutrophilic eccrine hidradenitis (NEH) is a recently recognized dermatosis primarily affecting the eccrine glands and occurs most commonly in patients undergoing chemotherapy for malignancy. It is a rare, but characteristic acute, self-limited, inflammatory neutrophilic dermatosis most commonly described in patients with acute myelogenous leukemia (AML) receiving chemotherapy (1).

Patients with this uncommon, self-limited condition usually present with fever and nonspecific cutaneous lesions.

We report an instructive patient with AML who developed rapidly expansive NEH with periorbital cellulitis after receiving cytarabine for induction chemotherapy.

CASE REPORT

A 51-year-old Caucasian female nurse diagnosed with AML was admitted to the hospital for cytoreductive cytarabine chemotherapy. She had a history of AML diagnosed two years before. Her disease remained undetectable for almost one year, when she relapsed from acute myeloid leukemia. For the reason of antileukemia treatment, the patient received cytarabine. On the eleventh day of treatment she got high fever and 5 days later she developed an unusual rash confined to her upper chest, upper legs and arms, consisting of blanching urticarial papules and plaques, some of which showed central pustules. In addition, periorbital cellulitis-like lesions were present (Fig. 1A, B). Her whole blood count showed C-reactive protein 46.1mg/dL (<0.5), WBC 0.7x10^{9}L (4.20-5.10) and neutropenia. Differential diagnosis included Sweet's syndrome and bacterial infection. Due to isolation of *Escherichia coli* from urine, oral therapy with amoxicillin/clavulanic acid was started. Furthermore, she received a broad spectrum of antibiotic including meropenem and vancomycin. Repeated blood cultures for bacteria, serologic testing for fungi and virus specific PCRs were negative. Skin biopsies of cutaneous lesions on her left breast and upper leg were obtained. Histologic examination revealed a neutrophilic infiltrate around and within the eccrine ducts and secretory coils with occasional necrosis (Fig. 2). These findings were consistent with the diagnosis of NEH. Since the cytarabine treatment was finished anyway, only low potency topical steroid therapy was initiated. Over the next few days, the skin lesions resolved with post-inflammatory pigmentation (Fig. 3A, B).

DISCUSSION

NEH is a benign, self-limited, inflammatory dermatosis occurring in patients receiving chemotherapy for a variety of malignancies. The first descriptions were published by Harrist *et al*. in 1982 (1) and Flynn *et al*. in 1984 (2). NEH is associated with malignancy in 90% of cases (3). It is especially seen in patients with AML receiving chemotherapy, but it has also been reported in other hematologic malignancies such as acute myeloid leukemia, chronic lymphocytic leukemia, Hodgkin's and non-Hodgkin's lymphoma, as well in solid tumors such as osteogenic sarcoma, testicular carcinoma, metastatic breast cancer and Wilms tumor (1-5). The most frequently described cases are those where patients were receiving cytarabine-con-

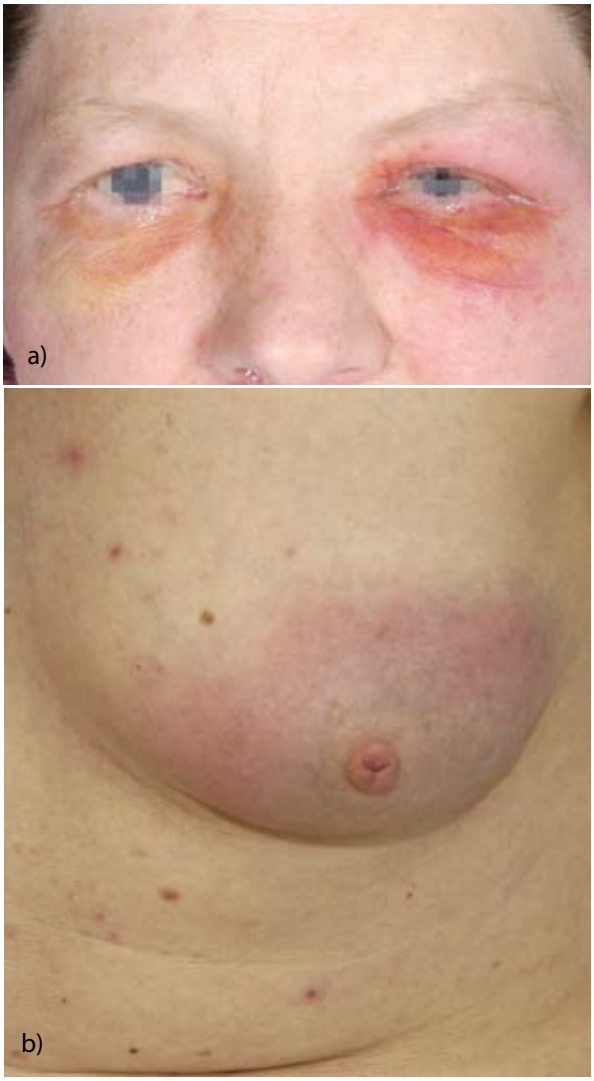

Figure 1. Figure 1 A, B. Periorbital cellulitis-like lesions (A) and blanching urticarial papules and plaques on the trunk (B)

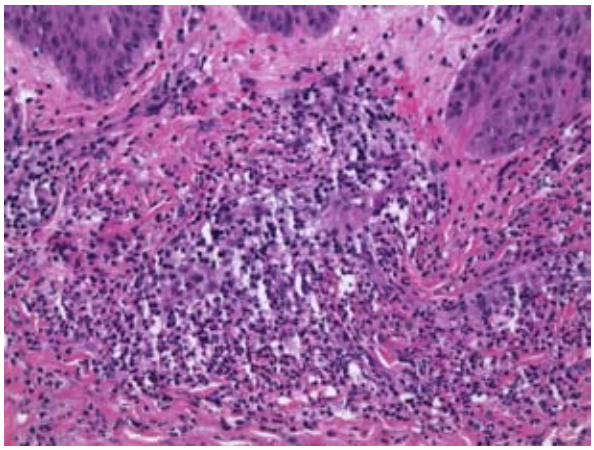

Figure 2. Neutrophilic infiltrate around and within the eccrine ducts and secretory coils with occasional necrosis (H&E; X40)

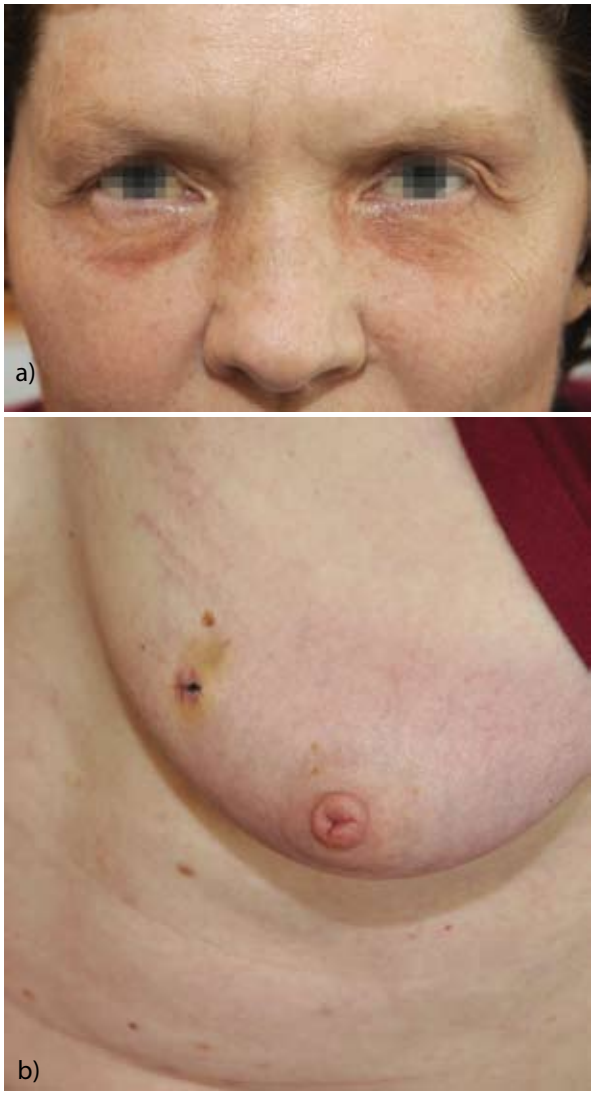

Figure 3. A, B. Post-inflammatory pigmentation on the face and on upper chest.

taining induction chemotherapy for AML. In several cases, some other drugs such as bleomycin (6), mitoxantrone (7), anthracyclines (8), decitabine (9), zidovudine (10) and acetaminophen (11) have also been described as being associated with NEH.

NEH usually begins 2 days to 3 weeks following the initiation of chemotherapy, although it may occur as long as 2 years following therapy (12).

NEH can either present in a localized distribution involving the limb or trunk, or be generalized. It generally presents as erythematous papules and plaques but the morphology of the lesions is very variable, which may be multiple or solitary, painful or asymptomatic. Most patients are febrile and neu-

tropenic at the time clinical lesions are observed. Because of the widespread clinical picture, NEH must be distinguished from disseminated infection, drug hypersensitivity eruption, leukemia cutis or other cutaneous metastases, Sweet's syndrome, erythema multiforme, vasculitis, bullous pyoderma and pyoderma gangrenosum (1,2,13,14). In our patient, the rash was generalized involving the limbs and the trunk, but also affecting the face with periorbital lesions. This unusual clinical picture with periorbital cellulitis-like lesions has been described so far only in 3 other cases. Those patients were also receiving induction chemotherapy with cytarabine for AML (15-17). This eruption has been associated with numerous factors, but is most commonly seen with chemotherapy, particularly cytarabine. However, it might also be an unusual but genuine feature of NEH.

NEH usually resolves spontaneously and therapy is rarely needed, although there is a 60% recurrence rate after exposure to the same chemotherapy (18). In case of fever or painful lesions, treatment options include anti-inflammatory, nonsteroidal drugs and Dapsone may prevent relapse in further cycles of chemotherapy (18).

CONCLUSION

Skin biopsy and microbiologic tests are required to establish the diagnosis of NEH. Early recognition of this diagnosis is important to avoid unnecessary treatment for infections or changes in drug therapy for non-existent drug reaction. Although relapses are described following reintroduction of causative chemotherapy, NEH is a self-limiting and non-life-threatening dermatosis.

References

1. Harrist TJ, Fine JD, Berman RS, Murphy GF, Mihm MC Jr. Neutrophilic eccrine hidradenitis. A distinctive type of neutrophilic dermatosis associated with myelogenous leukemia and chemotherapy. Arch Dermatol 1982;118:263-6.
2. Flynn TC, Harrist TJ, Murphy GF, Loss RW, Moschella SL. Neutrophilic eccrine hidradenitis: a distinctive rash associated with cytarabine therapy and acute leukemia. J Am Acad Dermatol 1984;11:584-90.
3. Bachmeyer C, Aractingi S. Neutrophilic eccrine hidradenitis. Clin Dermatol 2000;18:319-30.
4. Fitzpatric JE, Bennion SD, Reed OM, Wilson T, Reddy VV, Golitz L. Neutrophilic eccrine hidradenitis associated with induction chemotherapy. J Cutan Pathol 1987;14:272-8.
5. Wong GC, Lee LH, Chong YY. A case report of neutrophilic eccrine hidradenitis in a patient receiving chemotherapy for acute myeloid leukaemia. Ann Acad Med Singapore 1998;27:860-3.
6. Scallan PG, Kettler AH, Levy ML, Tschen JA. Neutrophilic eccrine hidradenitis. Evidence implicating bleomycin as a causative agent. Cancer 1988;62:2532-6.
7. Burg G, Bieber T, Langecker P. Localized neutrophilic eccrine hidradenitis in mitoxantrone therapy: a typical side-effect of cytostatic drugs. Hautarzt 1988;39:233-6.
8. Keane FM, Munn SE, Buckley DA, Hopster D, Mufti GJ, du Vivier AW. Neutrophilic eccrine hidradenitis in two neutropenic patients. Clin Exp Dermatol 2001;26:162-5.
9. Ng ES, Aw DC, Tan KB, Poon ML, Yap ES, Liu TC, *et al*. Neutrophilic eccrine hidradenitis associated with decitabine. Leuk Res 2010 May;34(5):e130-2. Epub 2009 Dec 21
10. Smith KJ, Skelton HG III, James WD, Holland TT, Lupton GP, Angritt P. Neutrophilic eccrine hidradenitis in HIV-infected patients. J Am Acad Dermatol 1990;23:945-7.
11. Kuttner BJ, Kurban RS. Neutrophilic eccrine hidradenitis in the absence of an underlying malignancy. Cutis 1988;41:403-5.
12. Susser WS, Whitaker-Worth DL, Grant-Kels JM. Mucocutaneous reactions to chemotherapy. *J Am Acad Dermatol* 1999; 40:367-98.
13. Katsanis E, Luke K-H, Hsu E, Carpenter BF, Mantynen PR. Neutrophilic eccrine hidradenitis in acute myelomonocytic leukemia. Am J Pediatr Hematol Oncol 1987;9:204-8.
14. Bailey DL, Barron D, Lucky AW. Neutrophilic eccrine hidradenitis: a case report and review of the literature. Pediatr Dermatol 1989;6:33-8.
15. Bardenstein DS, Haluschak J, Gerson S, Zaim MT. Neutrophilic eccrine hidradenitis simulating orbital cellulitis. Arch Ophtalml 1994;112:1460-3.
16. Crawford GH, Chu AY, Halpern M, James WD. Erythematous facial plaques in a patient with leukemia. Neutrophilic eccrine hidradenitis. Arch Dermatol 2003;139:531-6.
17. Srivastava M, Scharf S, Meehan SA, Polsky D. Neutrophilic eccrine hidradenitis masquerading as facial cellulitis. J Am Acad Dermatol 2007 Apr;56(4):693-6. Epub 2006 Nov 15.

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18. Shear NH, Knowles SR, Shapiro L, Poldre P. Dapsone in prevention of recurrent neutrophilic eccrine hidradenitis. J Am Acad Dermatol 1996;35:819-22.

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Giant Basal Cell Carcinoma. Improvement and Vitiligo-Like Hypopigmentation after Intermittent Treatment with 5% Imiquimod

INTRODUCTION

Basal cell carcinoma (BCC) is the most common skin cancer and it often poses therapeutic difficulties because of its size, location or general condition of the affected patient, which can make surgery as well as other available treatments risky. In the last decade, topical 5% imiquimod has been used successfully in the treatment of BCC, acting as a modifier of the immune response by stimulating the production of interferon and other cytokines that promote anti-tumor activity, inducing apoptosis of cancer cells. It is used in topical applications ranging in frequency from 3, 5 and 7 applications *per* week for 6 or 12 weeks according to different publications.

The range of improvement varies in different series reaching up to 75% (1) or greater. However, most studies included treatment of small tumors (less than 2 cm), with few publications reporting treatment of large (2 to 5 cm) or giant (over 5 cm) lesions. A case is reported of a giant BCC successfully treated with topical 5% imiquimod leaving residual vitiligo-like hypopigmentation.

CASE REPORT

The patient was a 78-year-old woman with type 2 diabetes (often unbalanced), coronary heart disease, myelodysplastic syndrome, chronic anemia, chronic urinary tract infection, bilateral cataracts, Parkinson's disease and in recent years Alzheimer disease. For many years she had a large tumor on her forehead, with progressive growth, which she repeatedly refused to treat. Five years before, after persis-