http://dx.doi.org/10.5021/ad.2014.26.3.411

Neutrophilic Dermatosis Confined to the Lymphedematous Area

Ji-Youn Park, Hee Young Kang, You Chan Kim

Department of Dermatology, Ajou University School of Medicine, Suwon, Korea

Dear Editor:

Lymphedema is a common sequelae after cancer surgery with lymph node dissection[1]. A lymphedematous limb, which is prone to the development of infections or tumors, suggests an alteration in regional immune competence[2]. Neutrophilic dermatosis on postmastectomy lymphedema (NDPL) is a newly suggested disease by Demitsu and Tadaki[3] It is also referred to as localized Sweet's syndrome (SS) because of the histological similarities between the two conditions[4]. Herein, we report additional cases of neutrophilic dermatosis confined within a lymphedematous site and a review of the disease entity.

All three cases involved female patients, two of whom were breast cancer patients who underwent modified radical mastectomy with axillary lymph node dissections (Table 1). The third patient had undergone radical hysterectomy with pelvic lymph node dissection for cervical cancer. Lymphedema was confined to the lymph-node-dissected limb developed in all three patients after the surgery. All of them rapidly developed erythematous rashes on their lymphedematous limb (Fig. 1A, B). Skin biopsy revealed marked papillary dermal edema and dense dermal neutrophil infiltrates, consistent with the histopathologic features of SS (Fig. 1C, D). The laboratory findings, including white blood cell count, percentage of neutrophils, erythrocyte sedimentation rate (ESR), and C-reactive protein (CRP), were within the normal ranges, except in case 3 (ESR: 35 mm/h; CRP: 4.09 mg/dl). Each case was treated with topical or oral corticosteroid, or oral antibiotics. In case 3, the lesion recurred rapidly after initially being treated with oral antibiotics. After the administration of oral corticosteroid, the lesion rapidly resolved within 1 week. On the basis of the characteristic distribution of the lesion and the histopathologic features, a diagnosis of 'neutrophilic dermatosis on the lymphedematous area' was made.

Neutrophilic dermatosis or SS localized on the area of lymphedema is rare, and only 11 cases have been reported[1,3,4]. The clinical presentations of previously reported cases were erythematous papules, plaques, and vesicles on the lymphedematous arm after a mastectomy, which are consistent with our cases[1,3,4]. The pathomechanism cannot be fully demonstrated; however, the vulnerability of the lymphedematous area seems to be the main factor[1,2,5]. The stasis of protein-rich lymphatic fluid contains numerous cytokines that might attract neutrophils and also result in the impairment of immune surveillance[2,5]. Because this dermatosis shows typical clinicohistopathological findings of SS, they are considered a localized variant of SS[4]. However, other systemic presentations, such as leukocytosis, neutrophilia, or fever, were less frequent than in typical SS. Therefore, several other reports suggested the use of the new term NDPL[1,3]. Other clinical differential diagnosis included cellulitis or erysipelas. Contrary to cellulitis or erysipelas, the lesion was confined only to the lymphedematous area and was well treated with oral or topical corticosteroid[1,4]. Although the 11 reports to date were cases of a lesion on a lymphedematous arm after a mastectomy, our report includes one case of a lesion that had developed on the lymphedematous leg after a hysterectomy for cervical cancer. Consequently, our cases suggest a novel point that a lesion could develop on any lymphedematous limb after

Received June 4, 2013, Accepted for publication June 14, 2014

Corresponding author: You Chan Kim, Department of Dermatology, Ajou University School of Medicine, 206 WorldCup-ro, Yeongtong-gu, Suwon 443-749, Korea. Tel: 82-31-219-5190, Fax: 82-31-219-5189, E-mail: maychan@ajou.ac.kr

Table 1. Clinical characteristics of the three cases

Case No.	Sex/ age (yr)	Interval from surgery	Cancer history	Previous surgery for cancer	Clinical findings	Lymphe-dema	Location of skin lesions	Laboratory findings	Treatment for skin lesions	Re-currence	Follow-up period
Case 1	F/48	1 year	Right breast cancer	Modified radical mastectomy with axillary LND +concurrent CRTx	Multiple erythematous papules, vesicles, and plaques	Right arm	Right arm	CBC: WNL ESR, CRP: ND	Topical corticosteroid (desoximetasone)	(−)	6 months
Case 2	F/49	8 years	Left breast cancer	Modified radical mastectomy with axillary LND +concurrent CRTx	Multiple erythematous papules, vesicles, and patches	Left arm	Left arm	CBC: WNL ESR, CRP: ND	Oral cefadroxil 1,500 mg/d with topical antibiotics (mupirocin)	(+): after 9 months	13 months
Case 3	F/49	11 years	Cervical cancer	Radical hysterectomy with pelvic LND +adjuvant radiotherapy	Multiple erythematous papules and patches	Right leg	Right leg	CBC: WNL ESR: 35 mm/h CRP: 4.09 mg/dl	1. Oral cefditoren 300 mg/d for 7 days; the lesion rapidly recurred 2. After use of oral prednisolone 20 mg/d for 7 days, the lesion rapidly resolved	(−)	17 months

F: female, LND: lymph node dissection, CRTx: chemoradiotherapy, CBC: complete blood cell count, WNL: within normal limit, ESR: erythrocyte sedimentation rate, CRP: C-reactive protein, ND: not done, (−): negative, (+): positive.

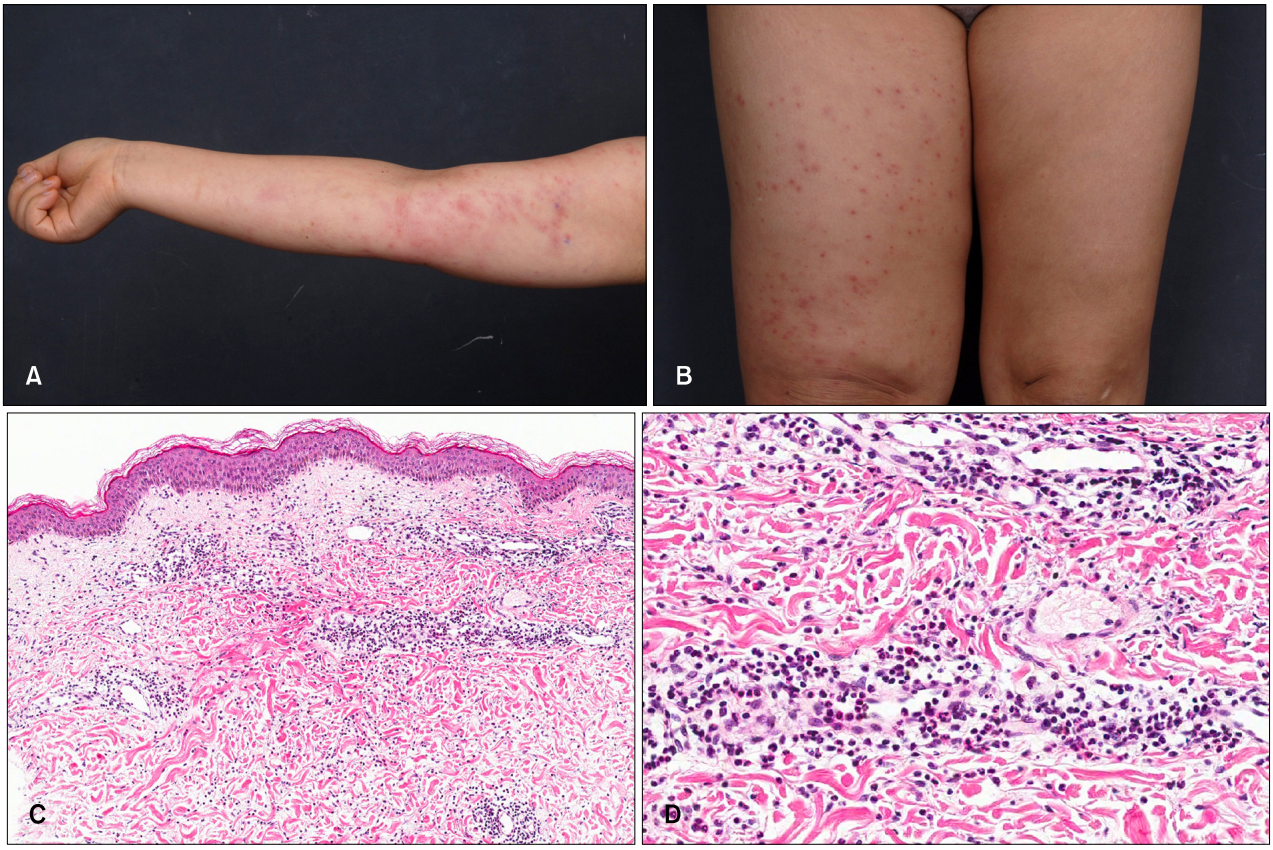

Fig. 1. (A) Case 1. Multiple variable-sized erythematous papules, vesicles, and plaques localized on the right lymphedematous arm. (B) Case 3. Multiple erythematous papules and patches confined on the left lymphedematous leg. (C, D) Histopathological findings. Skin biopsy taken from the patient of case 1, showing marked papillary dermal edema and dense dermal neutrophil infiltrates (H&E; C: ×40, D: ×200).

lymph node dissection. Therefore, we suggest the term 'neutrophilic dermatosis on the lymphedematous area' rather than NDPL.

REFERENCES

1. Lee CH, Lee HC, Lu CF, Hsiao CH, Jee SH, Tjiu JW. Neutrophilic dermatosis on postmastectomy lymphoedema: a localized and less severe variant of Sweet syndrome. Eur J Dermatol 2009;19:641-642.
2. Mallon E, Powell S, Mortimer P, Ryan TJ. Evidence for altered cell-mediated immunity in postmastectomy lymphoedema. Br J Dermatol 1997;137:928-933.
3. Demitsu T, Tadaki T. Atypical neutrophilic dermatosis on the upper extremity affected by postmastectomy lymphedema: report of 2 cases. Dermatologica 1991;183:230- 233.
4. García-Río I, Pérez-Gala S, Aragüés M, Fernández-Herrera J, Fraga J, García-Díez A. Sweet's syndrome on the area of postmastectomy lymphoedema. J Eur Acad Dermatol Venereol 2006;20:401-405.
5. Ruocco E, Puca RV, Brunetti G, Schwartz RA, Ruocco V. Lymphedematous areas: privileged sites for tumors, infections, and immune disorders. Int J Dermatol 2007;46:662.

http://dx.doi.org/10.5021/ad.2014.26.3.413

Nipple Eczema: A Diagnostic Challenge of Allergic Contact Dermatitis

Sun Kyung Kim, Young Ho Won, Seong-Jin Kim

Department of Dermatology, Chonnam National University Medical School, Gwangju, Korea

Dear Editor:

Nipple eczema, considered mostly as a minor manifestation of atopic dermatitis, may have unknown causes. However, its clinical course and pattern often make it difficult to differentiate its underlying causes such as irritation or sensitization. Nevertheless, allergic contact dermatitis must be considered an important cause of nipple eczema.

In the present study, we analyzed the patch test results from pateints of nipple eczema by using the Korean standard series comprising 25 antigens (Chemotechnique Diagnostics, Malmo, Sweden). Antigens were carefully added into an IQ Ultra chamber® (Chemotechnique Diagnostics) which is made of additive-free polyethylene plastic foam with a filter paper incorporated, and stuck to the backs of the patients. Results were recorded 30 minutes after patch removal (as usual), and the patients were re-evaluated 48 hours later. On the basis of the recommendations of the International Contact Dermatitis Research Group, a reading of +1 (patients with erythematous papules and edema but without any vesicles) or higher was deemed a positive response.

Among a total of 12 patients (all women) who were patch tested, 5 were clearly diagnosed with atopic dermatitis on

Received March 13, 2013, Revised March 27, 2013, Accepted for publication June 17, 2013

Corresponding author: Seong-Jin Kim, Department of Dermatology, Chonnam National University Hospital, Chonnam National University Medical School, 42 Jebong-ro, Dong-gu, Gwangju 501-757, Korea. Tel: 82-62-220-6683, Fax: 82-62-222-4058, E-mail: seongkim @jnu.ac.kr