Introduction

Cutaneous pseudolymphoma (CPL), also recognized as cutaneous lymphoid hyperplasia or lymphocytoma cutis, is a benign skin condition that resembles lymphoma without representing a cancerous form. It is characterized by an abnormal proliferation of lymphocytes within the skin. The exact cause of CPL is frequently unknown, although it may be triggered by various factors such as specific medications, infections, exposure to certain chemicals, or an immune system reaction [1]. Clinically, CPL may manifest as papules, infiltrated plaques, nodules, and less commonly as persistent erythema or exfoliative erythroderma. While no single clinical feature definitively distinguishes CPL from malignant lymphoma, conscientious clinical assessment, along with histopathological and immunohistochemical examinations, is imperative for an accurate diagnosis. In this report, we present a rare case of bee sting-triggered CPL, which was successfully managed through surgical intervention without complications or recurrence. The report received approval from the Institutional Review Board of Soonchunhyang University Bucheon Hospital (IRB No. 2023-09-010), and the patient provided written informed consent for the publication and use of photographic findings.

Case

A 54-year-old man with a medical history of angina pectoris, hypertension, and dyslipidemia presented at the outpatient clinic with persistent papules and plaques on his...
back (Fig. 1). He had been experiencing this mass-like skin lesion for over 10 years following a bee sting; the affected area was progressively expanding. The nontender mass-like lesion measured 4×5 cm and exhibited purplish papules and plaques. The lesion had a vague margin without suppuration or ulceration. Punch biopsy was performed, and the pathological analysis revealed superficial and deep perivascular lymphoplasmacytic infiltration, raising suspicion of lymphoma. To gather more information, an immunohistochemical examination was conducted, demonstrating a polyclonal pattern in CD20 and CD3, along with confirmation of CD4 positivity in T cells, indicating findings inconsistent with plasma cell neoplasm. Densely lymphoplasmacytic infiltration in the reticular dermis prompted the necessity for a wide excision to rule out malignant lymphoma. Following a 7×6-cm-sized margin-free wide excision, immediate reconstruction was performed using a fasciocutaneous transposition flap (Fig. 2). The final histopathological findings were consistent with the initial assessment, showing no evidence of malignant lymphoma (Fig. 3). Following surgery, the patient was discharged without any wound-related complications, and no recurrence was observed after 1 year.

Discussion

CPL encompasses a spectrum of skin diseases with clinical and/or histological features that resemble those of cutaneous lymphomas, manifesting as benign and polyclonal T- or B-cell lymphoproliferative processes. While the majority of CPL cases are considered idiopathic, certain identified causative factors include infectious agents, foreign agents, and external pathogens such as drugs and insect bites [2-6]. Diagnosing CPL demands a comprehensive approach since neither clinical nor histological features alone can accurately categorize it as lymphoma or pseudolymphoma. The precise diagnosis is achieved through a combination of clinical signs, histological features, and disease progression [2]. Histopathology plays a pivotal role in CPL diagnosis, allowing classification based on various patterns, including the predominant cellular morphology and size of lymphocytes, immunophenotype, and composition of the infiltrate [6]. Furthermore, the diagnosis is supported by the absence of T-cell receptor rearrangement (monoclonality), absence of plasma cell...
clonality, and negative immunoglobulin (Ig) heavy chain gene rearrangements, along with the presence of polyclonal kappa and lambda light chains [7-9].

Most of the known causes of CPL are infectious or foreign agents and drugs, comprising over 70% of total cases [6]. Although rare, there have been reports demonstrating an association between insect bites and CPL, with most cases linked to tick or arthropod bites [10,11]. The primary pathogenesis is believed to be a delayed-type hypersensitivity reaction to a component of these insects [12]. While the association between bee stings and CPL is not well-established, one possible hypothesis for bee sting-related CPL can be inferred from the specific components of bee venom. Bee venom induces allergic reactions following a sting, and major bee venom allergens, along with specific IgE inducers such as phospholipase A2, melittin, and hyaluronidase, might trigger an inflammatory response, leading to the proliferation of lymphocytes in the skin [13].

The clinical course of CPL can display considerable variability. Spontaneous regression is observed in certain cases, sometimes following a biopsy procedure. Conversely, a subset of patients experiences persistent symptoms lasting for several months or sometimes years. Furthermore, re-exposure to specific causative factors can potentially trigger a recurrence [1]. The progression of CPL, often termed an “aggressive course,” has been rarely re-
ported [5]. The primary focus of treatment lies in eliminating the causative agent and preventing further exposure. In cases where the causative agent cannot be eradicated or effectively treated, surgical excision becomes a viable option for solitary CPL lesions [6].

A previous study reported a case of IgE-pseudolymphoma on the forehead that occurred after multiple bee stings [14]. In this case, the patient exhibited persistent indurated swelling for 2 years, along with transient edema and multiple suppurative ulcers after the bee sting event. Though treatment included intralesional triamcinolone injection and serial excision, recurrent episodes persisted.

In another prior study, a case of cutaneous B-cell pseudolymphoma following poison ivy exposure was documented [15]. For 7 months following the exposure, the patient developed numerous pruritic erythematous papules on the abdomen. While most lesions favorably responded to topical steroid treatment, a single non-responsive and progressively enlarging nodule required total excision. Subsequently, no recurrence was observed during the 18-month follow-up period.

In contrast, the patient in our case exhibited a different clinical course. Our patient recognized the lesion some years after the bee sting and experienced gradual enlargement over a 10-year period. He had not undergone any treatment before visiting our clinic. Considering the prolonged disease duration and its expansion over time, we opted for an immediate wide excision, and no recurrence was observed during the 1-year follow-up.

Bee stings can serve as a causative factor in the development of CPL, manifesting as sizable, lump-like skin lesions over an extended period. In conclusion, when encountering lesions clinically consistent with the features of CPL with chronicity or steroid-unresponsiveness, prompt surgical excision reliably eradicates the lesions and prevents any recurrence.

**Conflict of interest**

No potential conflict of interest relevant to this article was reported.

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**References**
