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DOI: 10.1159/000479575**Nail Pyogenic Granuloma following Treatment with Blinatumomab**Dilshad Paurobally^a Josette Andre^b Bertrand Richert^b^aDepartment of Dermatology, Paurobally Clinic, Curepipe, Mauritius; ^bDepartment of Dermatology, Brugmann – St Pierre and Queen Fabiola Children's University Hospitals, Université Libre de Bruxelles, Brussels, Belgium

Dear Editor,

Blinatumomab is a new targeted immunotherapy approved by the US Food and Drug Administration (FDA) for the treatment of relapsed or refractory Ph-negative acute lymphoblastic leukemia in adults. It is a specific CD19-directed CD3 T cell engager, which will result in destroying malignant B cells [1]. We report the first case of periungual/subungual pyogenic granuloma (PG) following blinatumomab treatment.

A 34-year-old male presented to the nail consultation for the spontaneous arising of easily bleeding periungual and subungual granulomas in the lateral sulcus of both great toenails. He has never suffered from ingrowing nails and has had no pedicure ever in his life. He was clipping his nails himself. The patient had a his-

tory of acute lymphoblastic leukemia for which he had had a bone marrow transplant 1 year earlier. Ten months later, he had a recurrence of the disease and was then treated with blinatumomab. The only other medications the patient was taking were aciclovir, omeprazole, and posaconazole, which he has been taking for several months now. Blinatumomab was administered as a continuous infusion delivered at a constant flow rate using an infusion pump. Each cycle of treatment was 4 weeks of continuous infusion followed by a 2-week treatment-free interval.

The patient developed paronychia and periungual/subungual PG 6 weeks after the initiation of blinatumomab. Only the 2 great toenails were involved without any pain (Fig. 1). As the patient sought medical advice to only know the cause of the condition and was not in pain, a conservative symptomatic topical treatment associating a potent steroid and an antibiotic (betamethasone valerate and fusidic acid, Fucicort®, Léo Pharma) under occlusion at night was prescribed. The patient was then lost for follow-up.

The mechanisms underlying the development of periungual/subungual PG after infusion of blinatumomab remain unclear. So far, drugs that are known to be responsible for PG are systemic retinoids [2] (isotretinoin, etretinate), topical retinoids [3, 4] (tretinoin, tazarotene), and antiretroviral therapy [5] (indinavir, lamivudine). More recently, PG have been described during antineoplastic therapy especially with epidermal growth factor inhibitors [6] (cetuximab, lapatinib, panitumumab, gefitinib, erlotinib), where it occurs in 60% of all patients, and more rarely with capecitabine, 5-fluorouracil, mitoxanthrone, and docetaxel [2, 7].

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Fig. 1. Paronychia associated with pyogenic granulomas filling up the distal half of the lateral sulcus of both great toenails.

Other antineoplastic therapies that can trigger PG are anti-CD20 monoclonal antibody therapy [8] (rituximab) and mammalian target of rapamycin (mTOR) inhibitors [9] (everolimus, temsirolimus).

To the best of our knowledge, PG has never been reported among the adverse reactions following blinatumomab treatment. The main reactions that have been observed during treatment are Cytokine Release Syndrome (CRS), infusion reactions – which both cover a panel of symptoms including pyrexia, asthenia, headache, hypotension, increased liver enzymes, and nausea. Tumor Lysis Syndrome (TLS) and neurological events including encephalopathy were mostly reported [1].

There are 7 criteria used to assess the relationship between drugs and their possible side effects [10]. They are divided into 2 groups: the chronological score and the semiological score criteria. The sum of both scores gives the imputation score of a drug. In our case, the time lag between the administration of the 4-week continuous treatment and the onset of the symptoms is quite short, and taking into consideration that there were no other alternative non-drug-related explanations, the chronological score and the semiological scores are 2 and 2, respectively. Finally, the resulting imputation score means that the causal relationship between blinatumomab infusion and periungual/subungual PG is very likely in our patient.

This is the first case reported concerning this new side effect associated with blinatumomab. Physicians should be aware of this rare reaction.

Statement of Ethics

The patient has given his informed consent.

Disclosure Statement

The authors have no conflicts of interest to disclose.

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