Crusted Lesion on Left Maxilla After Mohs Surgery

ALYSSA M. IURILLO, BA; VICTORIA J. SHI, BA; TATIANA ABRANTES, MD; OLIVER J. WISCO, DO

A 53-year old female with a history of basal cell carcinoma (BCC) presented with a crusted, brown plaque overlying a linear surgical scar on the left maxilla. Approximately two months prior to presentation, the patient underwent Mohs micrographic surgery for removal of a biopsy-proven nodular BCC of the left maxilla. Preoperatively, the lesion presented as a 0.8 cm crusted pink papule [**Figure 1**]. The BCC was removed in two stages and the defect was approximated with a complex linear closure. Three days postoperatively, the patient developed a surgical site infection, which resolved with a 10-day course of doxycycline 100mg taken twice daily.

At the current visit, physical examination revealed a hyperkeratotic, tan to brown plaque in a linear distribution on the left cheek extending towards the ear (**Figure 2**). The patient reported cleaning the area with soap and water several times per day and applying Vaseline over the site without improvement. There was no pain or drainage. In the office, the hyperkeratotic plaque was loosened and removed by wiping with a hydrogen peroxide-soaked pad. Removal of the brown hyperkeratosis revealed a well-healed surgical scar with faint erythema on the left cheek (**Figure 3).** This case represents an example of Terra Firma-Forme Dermatosis (TFFD), a benign condition characterized by retained keratin that can be removed with alcohol or hydrogen peroxide.

TFFD is an idiopathic, benign skin condition caused by abnormal keratinocyte retention and characterized by hyperpigmented dirtlike plaques that are resistant to usual cleansing methods (i.e., soap and water) but clear with rubbing alcohol.[1,2] As with the patient in this case, patients with TFFD often report appropriate hygiene and robust, yet unsuccessful attempts at cleansing the affected area. The alcohol swab test is a simple method of promptly resolving skin lesions, confirming the diagnosis and should be attempted before other more invasive investigations.[1] Further testing including laboratory testing or skin biopsy is typically not necessary; however, fungal culture may be obtained to rule out pityriasis versicolor. TFFD is most prevalent in children, has no gender or familial predisposition and has been reported in all ethnic groups.[3-5]

Classic TFFD, as depicted in this case, is characterized by brown to gray to black macules and patches depicting a "dirt-like" appearance. The lesions often have a smooth, velvety, or scaly texture with fine scale when palpated, and can remain unnoticed due to its asymptomatic nature. Additional types include verrucous, papillomatous, and reticular patterns with islands of spared normal skin between the

Figure 1. 0.8 cm crusted pink papule on left maxilla.

Figure 2. Hyperkeratotic, tan to brown plaque in a linear distribution on the left cheek extending towards the ear.

Figure 3. Surgical scar with faint erythema on the left cheek.

lesions.[6] TTFD commonly involves the face, neck, trunk, navel, ankle, and concave contours of the body.[7] The dermoscopic characteristics of TFFD present as "polygonal, plate-like brown scales organized in a distinctive mosaic pattern."[8]

Dermatosis neglecta is characterized by hyperpigmented, adherent, cornflake-like scales that can be removed with soap and water, unlike TFFD, which requires alcohol for removal.[7] Pityriasis versicolor is a fungal infection that causes well-demarcated, often scaly patches that can be white, pink, or brown, but doesn't typically produce the thick, crusted plaques seen in TFFD.[7] Seborrheic keratoses (SK) typically present as an exophytic lesion with a well-defined border, giving it a characteristic "stuck-on" appearance. The sharply demarcated appearance of SK distinguishes it from conditions like TFFD, as SK is a true epidermal lesion with a thickened surface that cannot be easily wiped off.[9]

TFFD is a noninfectious dermatosis that resolves with alcohol or hydrogen peroxide, distinguishing it from dermatosis neglecta, pityriasis versicolor, and seborrheic keratosis. This case highlights the importance of recognizing TFFD to avoid unnecessary interventions, as its diagnosis is readily confirmed with the alcohol swab test and does not require biopsy or laboratory testing.

References

1. Greywal T, Cohen PR. Terra firma-forme dermatosis: A report of ten individuals with Duncan's dirty dermatosis and literature review. Dermatol Pract Concept. 2015 Jul 31;5(3):29-33. doi: 10.5826/dpc.0503a08. PMID: 26336622; PMCID: PMC4536880.
2. Aslan NÇ, Güler Ş, Demirci K, Isiyel E. Features of Terra Firma-Forme Dermatosis. Ann Fam Med. 2018 Jan;16(1):52-54. doi: 10.1370/afm.2175. PMID: 29311175; PMCID: PMC5758320.
3. Mattessich S, Aubert P, Rees A. Bilateral brown plaques behind the ears. Cutis. 2018;102:E1–3.
4. Özuğuz P, Kaçar SD, Kurtipek GS, Tunçez AF. The early onset case of terra firma forme dermatosis. Tıp AraştırmalarıDergisi. 2015;13:137–9.
5. Pallure V, Ameline M, Plantin P, Bessis D. Terra firma-forme dermatosis. Ann Dermatol Venereol. 2013;140:693–8.
6. Sechi A, Patrizi A, Savoia F, Neri I. Terra firma-forme dermatosis. Clin Dermatol. 2021;39:202–5.
7. Mohta A, Sarkar R, Narayan RV, Deoghare S, Arora A. Terra Firma-Forme Dermatosis-More Than Just Dirty. Indian Dermatol Online J. 2023 Dec 22;15(1):99-104. doi: 10.4103/idoj.idoj_424_23. PMID: 38283007; PMCID: PMC10810366.
8. Vakirlis E, Theodosiou G, Lallas A, Apalla Z, Sotiriou E. Terra firma-forme dermatosis: Differential diagnosis and response to salicylic acid therapy. Pediatr Dermatol. 2019 Jul;36(4):501-504. doi: 10.1111/pde.13807. Epub 2019 Mar 24. PMID: 30907017.
9. Barthelmann S, Butsch F, Lang BM, Stege H, Großmann B, Schepler H, Grabbe S. Seborrheic keratosis. J Dtsch Dermatol Ges. 2023 Mar;21(3):265-277. doi: 10.1111/ddg.14984. Epub 2023 Mar 9. PMID: 36892019.

Authors

Alyssa M. Iurillo, BA, Indiana University School of Medicine, Indianapolis, IN.

Victoria J. Shi, BA, University of Missouri-Kansas City School of Medicine, Kansas City, MO.

Tatiana Abrantes, MD, Department of Dermatology, The Warren Alpert Medical School of Brown University, Providence, RI.

Oliver J. Wisco, DO, Department of Dermatology, The Warren Alpert Medical School of Brown University, Providence, RI.

Disclosures

None

Correspondence

Alyssa Iurillo, BA
340 W 10th St
Indianapolis, IN 46202
317-274-8157
Fax 317-278-5241
aiurillo@iu.edu