

Terra Firma - Forme Dermatitis in Middle Anatolia, Turkey

Emine Ünal,¹ MD, Müzeyyen Gönül,² MD, Seray Çakmak,³ MD, Işıl Deniz Oğuz,⁴ MD, Pınar Döner,⁵ MD

Address: ¹Yenimahalle State Government Hospital, ²Diskapı Research and Training Hospital, ³Numune Research and Training Hospital, Department of Dermatology, Ankara, ⁴Giresun State Government Hospital, Department of Dermatology, Giresun, ⁵Mustafa Kemal University Faculty of Medicine, Family Medicine, Hatay, Turkey

E-mail: eminesu83@gmail.com

* *Corresponding Author:* Dr. Emine Ünal, Yenimahalle State Hospital, Department of Dermatology, Ankara, Turkey

Published:

J Turk Acad Dermatol 2016; **10** (2): 16102a1.

This article is available from: <http://www.jtad.org/2016/2/jtad16102a1.pdf>

Keywords: Hyperpigmentation, 70% isopropyl alcohol, Pigmentation disorder

Abstract

Background: Terra firma- forme dermatosis (TFFD) is a disorder which is characterized by dirt-like pigmentation, brown patch and plaques which cannot be removed by normal habit of washing and cleaning agents. TFFD is diagnosed by disappearance of hyperpigmentation after rubbing with 70% isopropyl alcohol or ethyl alcohol. Many patients have a history of various unnecessary endocrinological investigations due to concerns about a potential diagnosis of acanthosis nigricans and insulin resistance.

Material and Methods: In the last two year, we have diagnosed 14 patients as TFFD who applied to our clinics with complaint of hyperpigmentation. We analyzed demographical features of these cases and compare them with the literature.

Results: In our study 14 patients were diagnosed as TFFD. Ten of them were female and 4 were male. Female/male ratio was 2.5. 9 of them were child and 5 of them were adult. The most common localizations were arm, neck and abdomen, others localizations were leg, thigh, ankle, back. In 3 patient multi-side involvement was detected. The median duration of lesions was 42.4 months.

Conclusion: This report is the largest case serie from Turkey. We think the incidence in our country is high than reported. In Turkey TFFD is probably misdiagnosed or not reported by dermatologists or pediatrics. If we remember this disease we can diagnose and treat patients easily, we can protect our patients from unnecessary tests and side effects of topical corticosteroids.

Introduction

Terra firma- forme dermatosis is a keratinisation disorder. Patients have normal hygiene history. Topical corticosteroids and other topical agents may be inappropriately used and receive no response to treatment. Lesions are reversible when cleaned with 70% isopropyl alcohol or ethyl alcohol [1,2,3,4,5]. There is a small number of report about TFF in the li-

terature. We present the largest serie from Turkey.

Material and Methods

We collected data of the patients who diagnosed as TFFD in years between 2012-2014. We applied to all patients 'wipe test' with 70% ethyl alcohol. Dermatological examination of

Table 1. Clinical and Demographical Teatures Of The Patients

Patients	Sex	Age (year)	Duration (year)	Localization
1	M	11	1	Arms (bilateral)
2	F	4	1	Abdomen (unilateral)
3	F	9	0.5	Abdomen (bilateral)
4	F	46	0.5	Back (bilateral)
5	F	14	1	Ankle, arm (unilateral)
6	F	23	18	Neck
7	F	42	20	Legs (bilateral)
8	F	58	1	Neck, arms (bilateral)
9	M	16	1	Thigs (bilateral)
10	F	17	0.08	Legs, arm (unilateral)
11	F	5	0.08	Thigs (bilateral)
12	M	13	1.5	Abdomen (unilateral)
13	M	13	3	Neck
14	F	31	1	Back (bilateral)

the patients were made and age, gender, anatomic localization were recorded.

Results

In our study 14 patients were diagnosed as TFFD. 10 of them were female and 4 were male. Female/male ratio was 2.5. 9 of them were child and 5 of them were adult. The ages of the patients change between 4 – 58 years. In one adult the onset of the disease was in preschool age. All of them were applied with compliant of hiperpigmentation. Their hygiene were good. They had the habit of bath with soap at least 2-3 times a week. Four of them had attended to different health centers several times and used topical corticosteroid treatments. Others had presented to a doctor for the first time. One patient had been investigated with blood tests but any abnormalities were detected. Only one had pruritus, all of them had cosmetic concerns. All of them had dirt-like discolouration, brown patch and plaques (**Figure 1**). We applied to all patients 'wipe test' and lesions disappeared (**Figure 2**).

The most common localizations were arm, neck and abdomen, others localizations were leg, thigh, ankle, back. In 3 patient multi-side involvement was detected. The median duration of lesions was 42.4 months (5 months to 20 years) (**Table 1**).

Discussion

Terra firma-forme dermatosis is an idiopathic condition characterized by acquired, dirtlike asymptomatic patches and plaques. Although this disease has been reported more frequently in children, it can be seen at any age. The most frequent locations have been reported such as neck, arms. However the legs, intertriginous areas, face and the scalp may be affected. Lesions may be localized, generalized or symmetric [**2, 5, 6**].

Etiology is not clear. There are some authors had been reported that the sunlight triggered the disease. There were no report that suggests a familial predominance [**4, 5, 6, 7, 8**]. *Erkek* et al were suggested that application of humectants containing urea on dry skin could be responsible on aetiology [**4**]. In our cases 3 of them were xerotic but there were no history about using humectants containing urea.

Most of the patients cosmetically anxious. Some of the patients may have pruritus. Many patients have a history of various unnecessary endocrinological investigations. TFFD can be diagnosed and treated by a 'wipe test' with 70% ethyl alcohol [**1, 2, 3, 4, 5, 6, 7**,



Figure 1. Dirt-like discolouration, brown patch and plaques on the arm



Figure 2. After 'wipe test' disappearance of lesions

8,9]. After rubbing with 70% isopropyl alcohol or ethyl alcohol hyperpigmentation disappear. Biopsy is rarely done due to simple diagnosis and treatment. The histopathological features are papillomatosis, lamellar hyperkeratosis with focal areas of whorled orthokeratosis, mild acanthosis. Parakeratosis isn't seen [5].

In the differential diagnosis, acanthosis nigricans, confluent and reticulated papillomatosis, pityriasis versicolor, epidermal nevi and dirty neck syndrome of atopic dermatitis and dermatosis neglecta (DN) should be considered. Acanthosis nigricans is a cutaneous marker generally for insulin resistance and obesity. AN usually affects intertriginous skin such as neck, anogenital area, submammary region. The pigmentation of AN do not disappear when rubbing with alcohol. Isopropyl alcohol is operative for both TFFD and DN. But DN results from poor hygiene or inadequate skin cleansing. Pityriasis versicolor can easily differ by microscopic evaluation. Acanthosis nigricans, confluent and reticulated papillomatosis, epidermal nevi and dirty neck syndrome of atopic dermatitis could distinguish with wipe test [4, 5, 9].

There are small number of reports about TFF in literature. In the literature, the largest case serie consists 31 cases. The study reported by Berk from America [5]. In this study female/male was 1,2. Only 2 patients were older than 17 years. Child/Adult 29/2. In the study presented by Browning and friends [6] there were 6 patients. F/M was 0.5. Only one patient was child others were adult. In

the report presented by Akkash [2] there were 4 patients. F/M was 3.2. C/A was 1/2 . In our report F/M was 2.5 similar as Berk and Akkash. In our report C/A was 1.8. In Berk's report and in our report children were more affected than adults. In this 3 reports neck involvement was frequent. Neck involvement is similarly frequent but arm was the most common localization in our cases. The median duration of the lesions was 42.4 months in our study. This period was 4 months in Berk's report. This period is distinctly high when comparing with Berk's report [5].

In Turkey there are a few reports about TFFD. Erkek and friends [4] report 2 adult (1 male 1 female) patient. Tavli and friends report a female adolescent [3]. Sezgin and friends reported a 7 year old girl [10]. Cemil and friends reported a 7-month-old girl [11]. Our report is the largest case serie from Turkey. We think the incidence in our country is high than reported. In Turkey TFFD is probably misdiagnosed or not reported by dermatologists or pediatrics. In our report 4 adult patients had misdiagnosed and they referred to different health centers several times.

In conclusion, TFFD can affect both sexes and ages. While the neck and arms are common localizations it can also present on the other sites of the body. Male or female predominancy differs from case series. The lesions may remain over years. Despite the achievement of small number of investigated literature, we suggest that this disease is more frequent than expected. When we encounter our patients with dirty-like, brown, gray sta-

ins on their skins, this simple test can be applied to prevent unnecessary blood tests, biopsies and treatments. We suggest that 'wipe test' must be applied on the patients who compliants with dirt-like hyperpigmentation.

References

1. Ratcliffe A, Williamson D, Hesseling M. Terra Firma-Forme Dermatitis: it's easy when you know it. Arch Dis Child 2013; 98 :520. PMID: 23413311
2. Akkash L, Badran D, Al-Omari AQ. Terra Firma forme dermatosis. Case series and review of the literature. J Dtsch Dermatol Ges 2009; 7: 102-107. PMID: 19087214
3. Tavli YU, Mevlitoglu I, Toy H, Unal M. Terra Firma Forme disease. J Paediatr Child Health 2012; 48: 1046-1047. PMID: 23126397
4. Erkek E, Sahin S, Cetin ED, Sezer E. Terra firma-forme dermatosis. Indian J Dermatol Venereol Leprol 2012; 78: 358-360. PMID: 22565438
5. Berk DR. Terra firma-forme dermatosis: a retrospective review of 31 patients. Pediatr Dermatol 2012; 9: 297-300. PMID: 21967469
6. Browning J, Rosen T. Terra firma-forme dermatosis revisited. Dermatol Online J 2005; 11: 15. PMID: 16150223
7. Pavlovic MD, Dragos V, Potocnik M, Adamic M. Terra firma-forme dermatosis in a child. Acta Dermatovenol Alp Pannonica Adriat 2008; 17: 41-42. PMID:18454271
8. Guarneri C, Guarneri F, Cannavo SP. Terra firma-forme dermatosis. Int J Dermatol 2008; 47: 482-484. PMID:18412867
9. Choudhary SV, Bisati S, Koley S. Dermatitis neglecta. Indian J Dermatol Venereol Leprol 2011; 77: 62-63. PMID: 21220883
10. Sezgin AO, Turk BG, Yaman B, Dereli T. Terra firma-forme dermatosis. Turkderm 2013 ; 47: 187-189.
11. Çevirgen Cemil B, Canpolat F, Atas H, Şaşmaz R. Terra Firma-Forme Dermatitis. J Turk Acad Dermatol 2014; 8: 1484c3.