

Tinea Versicolor, Which is More Prominent on the Hemiparetic Side of the Body

Vücutun Hemiparetik Tarafında Daha Belirgin Olan Tinea Versikolor

^{id} Aysun Şikar AKTÜRK^a, ^{id} Nurşad ÇİFCİ^b, ^{id} Serap MÜLAYİM^c

^aDepartment of Dermatology, Kocaeli University Faculty of Medicine, Kocaeli, Türkiye

^bClinic of Dermatology, Kocaeli Derince Training and Research Hospital, Kocaeli, Türkiye

^cDepartment of Neurology, Kocaeli University Faculty of Medicine, Kocaeli, Türkiye

This case report was presented as a poster at the 30th National Dermatology Congress, October 19-23, 2022, Gazimağusa, Turkish Republic of Northern Cyprus.

ABSTRACT Hemiparesis is a neurological deficit characterized by partial loss of muscle strength in one half of the body. It has been reported that the skin on the hemiparetic side may differ from the normal body region for some reasons, therefore skin diseases may progress differently, and some skin diseases may be seen more frequently or less frequently. However, there is no information in the literature regarding the course of tinea versicolor lesions in these patients. In our article, we present a 52-year-old male patient with tinea versicolor, which is more common on the side with hemiparesis.

ÖZET Hemiparezi, kısmi kas gücü kaybı ile karakterize nörolojik bir durumdur. Hemiparetik taraftaki cildin bazı nedenlerle normal vücut bölgesinden farklılık gösterebileceği, bu nedenle cilt hastalıklarının farklı ilerleyebileceği, bazı cilt hastalıklarının daha sık veya daha az görülebileceği bildirilmiştir. Ancak literatürde bu hastalardaki tinea versikolor lezyonlarının seyri ile ilgili bilgi bulunmamaktadır. Makalemizde hemiparezi olan tarafta daha sık görülen tinea versikolorlu 52 yaşında erkek hastayı sunuyoruz.

Keywords: Hemiparesis; tinea versicolor

Anahtar Kelimeler: Hemiparezi; tinea versikolor

Tinea versicolor (pityriasis versicolor) is one of the superficial fungal infections of the skin, which is caused by *Pityrosporum orbiculare* and *Pityrosporum ovale*, found in the normal flora of the skin, dimorphic, lipophilic and opportunistic fungi. Predisposing factors include high temperature, humidity, malnutrition, hyperhidrosis, genetic predisposition, high plasma cortisol levels, immunodeficiency and some drugs. Clinically, it is seen as hypopigmented, hyperpigmented or salmon pink macules and patches with fine scaling on the skin, especially in seborrheic areas, located around the upper body and shoulders.¹

Hemiparesis is a neurological deficit that occurs as a result of acute hemorrhagic and ischemic cere-

brovascular accident and it is characterized by partial loss of muscle strength in one half of the body.² There may be difference between the skin of the hemiparetic side and the normal side of the body in sweating, cutaneous blood flow, immune and autonomic functions.³⁻⁶ In addition, due to the loss of motor function and limitation of movement in the extremities, the fold areas of the body remain moist and it becomes difficult for the patients to clean their own body. For all these reasons, it has been reported that some skin diseases in these patients may progress differently between the hemiparetic side and the other healthy side.⁷⁻¹² Moreover some skin diseases may be seen more frequently or less frequently on the hemiplegic/hemiparetic side.⁷⁻¹²

Correspondence: Nurşad ÇİFCİ

Clinic of Dermatology, Kocaeli Derince Training and Research Hospital, Kocaeli, Türkiye

E-mail: nuradaslan@yahoo.com



Peer review under responsibility of Türkiye Klinikleri Journal of Medical Sciences.

Received: 04 Nov 2022

Received in revised form: 30 Jan 2023

Accepted: 09 Mar 2023

Available online: 13 Mar 2023

2146-9040 / Copyright © 2023 by Türkiye Klinikleri. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

In this article, we presented a 52-year-old male patient with more extensive tinea versicolor, especially on the skin of the hemiparetic side of the body.

CASE REPORT

A 52-year-old male patient presented with a brown discoloration on his back that appeared during the summer months for 10 years, which resolved by leaving white spots. However, he described that, the spots were more common especially on the left side of his body for 6 years. The patient had a history of hemiparesis on left side of his body. It was learned that hemiparesis developed 7 years ago as a result of embolism due to the patent foramen ovale in the heart.

In the neurologic examination, hemiparesis with 3/5 loss of muscle strength in the left lower and upper extremities were observed. Other systemic examination findings were normal. In the dermatological examination, multiple hypopigmented macules with pityriasisiform scales were observed, which were more prominent on the left half of the back (Figure 1). In cranial Magnetic resonance imaging that was taken 7 years ago, in the right frontal lobe there were diffu-



FIGURE 1: Multiple hypopigmented macules with pityriasisiform scales more prominent on the left half of the back.

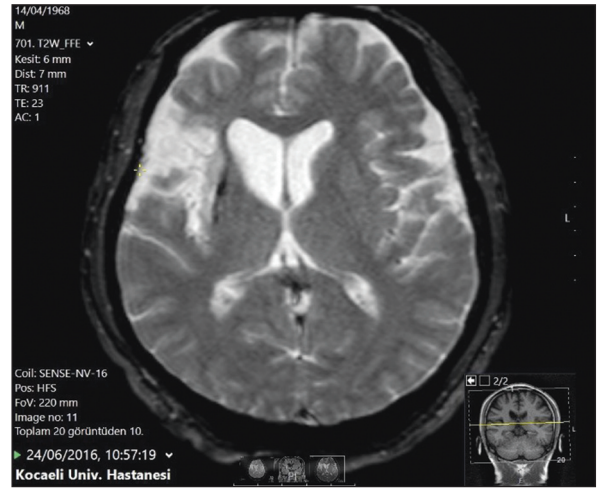


FIGURE 2: Areas of diffusion restriction consistent with infarction in the right frontal lobe with acute and chronic components.

sion restriction areas consistent with infarct were observed (Figure 2). Microscopic examination revealed short hyphae and spores compatible with *Malassezia furfur*. We made sweat test and it was observed that the sweating in the left half of the body decreased compared to the right half (Figure 3).

As a result of clinical and direct microscopic examination, a diagnosis of tinea versicolor was made and appropriate treatment was recommended. Our patient was found to be worth presenting because tinea versicolor lesions were much more prominent and widespread, especially in the hemiparetic left half of the body. Consent was obtained from our patient for this case report.

DISCUSSION

Some skin diseases may progress differently on the hemiplegic/hemiparetic side of the body. To our knowledge there are few case reports on skin findings of hemiplegic/hemiparetic patients.^{3,4,7-12} In a study from Türkiye, it was reported that tinea pedis, onychomycosis, xerosis and reduction in lower extremity hair were more common in patients with hemiplegia/hemiparesis than in healthy individuals.¹² They reported that the prevalence of dermatological findings were observed at the same rate in both healthy and neurologically damaged half of the body. But clubbing cases were observed mostly on the hemiplegic/hemiparetic side.¹² There is another study



FIGURE 3: A decrease in sweating was observed in the left half of the body compared to the right half.

consistent with this result about clubbing.⁷ Bullous pemphigoid, scabies, are also reported as seen on the hemiplegic side, while scleroderma lesions, endogenous eczema, beau lines on the nails and psoriasis lesions were reported to be seen on the intact side.^{3,4,8-11} No information was found about tinea versicolor in previous studies.

In our case, the patient stated that, before hemiparesis developed, lesions were fewer and seen on both side of the body but after his neurological disease, his lesions were more common on the affected left side. Consistent with this history, we observed that the lesions were more prominent on the left side of the body.

It is known that, in the skin on the neurologically affected side, there may be changes in the blood flow, alterations in immune functions, and autonomic functions.^{3-6,12} We thought that impaired autonomic innervation may cause changes in the sweating and so we performed the sweat test. Test result showed that the sweating on the hemiparetic left side of the body was less than on the right side. This indicates that there is a disorder in autonomic

functions in the hemiparetic skin. But, in our patient, the lesions were more prominently seen on the body side with less sweating. There is a contradiction here, as tinea versicolor lesions are known to be seen more frequently on moist, sweaty skin.¹ So we thought that the reason why the superficial fungal infection was mostly on the hemiparetic side was not related to skin moisture.

It has been also reported that in patients who have had a stroke, there is a reduction in limb blood flow and immune dysfunction due to decreased blood flow.^{6,12} Moreover it has been reported that in paraplegic patients there may be changes in sebaceous gland function and greasiness have been shown to affect susceptibility to local fungal infections.^{1,13} So we thought that because of decreased blood flow, impaired immune and sebaceous gland functions, superficial fungal infection was more prominent on the hemiparetic body half of the patient. However, we consider that new prospective studies on etiopathogenesis are needed.

In conclusion; like some previously reported dermatological diseases, tinea versicolor lesions were much more prominent and widespread in our patient, especially on the neurologically damaged half of the trunk. We present our patient to draw attention to the fact that some dermatological diseases may progress differently in patients with hemiparesis.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: Aysun Şikar Aktürk; **Design:** Aysun Şikar Aktürk, Nurşad Çifci; **Control/Supervision:** Aysun Şikar Aktürk; **Data Collection and/or Processing:** Nurşad Çifci, Aysun Şikar Aktürk;

Analysis and/or Interpretation: Aysun Şikar Aktürk, Nurşad Çifci Serap Mülayim; **Literature Review:** Nurşad Çifci, Serap Mülayim; **Writing the Article:** Nurşad Çifci, Aysun Şikar Aktürk;

Critical Review: Aysun Şikar Aktürk, Nurşad Çifci, Serap Mülayim; **References and Fundings:** Aysun Şikar Aktürk, Nurşad Çifci, Serap Mülayim.

REFERENCES

- Martin AG, Kobayashi GS. Yeast infections: candidiasis, pityriasis (tinea) versicolor. In: Fitzpatrick TB, Eisen AZ, Wolff K, Freedberg IM, Austen KF, eds. *Dermatology in General Medicine*. 4th ed. New York, NY: McGrawHill; 1993. p.2462-5.
- Öge AE, Baykan B, Bilgiç B. Sinir sistemi semiyolojisi. Nöroloji E-Ders Kitabı. 2. baskı. İstanbul: İstanbul Tıp Fakültesi Nöroloji Ana Bilim Dalı; 2011. p.12.
- Long CC, Lever LR, Marks R. Unilateral bullous pemphigoid in a hemiplegic patient. *Br J Dermatol*. 1992;126(6):614-6. [[Crossref](#)] [[PubMed](#)]
- Thomsen K. Unilateral skin conditions after hemiparesis. *Acta Derm Venereol*. 1989;69(6):544. [[PubMed](#)]
- Adams WC, Imms FJ. Resting blood flow in the paretic and nonparetic lower legs of hemiplegic persons: relation to local skin temperature. *Arch Phys Med Rehabil*. 1983;64(9):423-8. [[PubMed](#)]
- Ivey FM, Gardner AW, Dobrovoly CL, Macko RF. Unilateral impairment of leg blood flow in chronic stroke patients. *Cerebrovasc Dis*. 2004;18(4):283-9. [[Crossref](#)] [[PubMed](#)]
- Alveraz AS, McNair D, Wildman J, Hewson JW. Unilateral clubbing of the fingernails in patients with hemiplegia. *Gerontol Clin (Basel)*. 1975;17(1):1-6. [[Crossref](#)] [[PubMed](#)]
- Sethi S, Sequeira W. Sparing effect of hemiplegia on scleroderma. *Ann Rheum Dis*. 1990;49(12):999-1000. [[Crossref](#)] [[PubMed](#)] [[PMC](#)]
- Speight EL. Asymmetrical scabies burrows in a hemiplegic patient. *Br J Dermatol*. 1993;128(4):467-8. [[Crossref](#)] [[PubMed](#)]
- Troilius A, Möller H. Unilateral eruption of endogenous eczema after hemiparesis. *Acta Derm Venereol*. 1989;69(3):256-8. [[PubMed](#)]
- Sowell JK, Pippenger MA, Crowe MJ. Psoriasis contralateral to hemiparesis following cerebrovascular accident. *Int J Dermatol*. 1993;32(8):598-9. [[Crossref](#)] [[PubMed](#)]
- Gül U, Cakmak SK, Ozel S, Bingöl P, Kaya K. Skin disorders in patients with hemiplegia and papaplegia. *J Rehabil Med*. 2009;41(8):681-3. [[Crossref](#)] [[PubMed](#)]
- Thomas SE, Conway J, Ebling FJ, Harrington CI. Measurement of sebum excretion rate and skin temperature above and below the neurological lesion in paraplegic patients. *Br J Dermatol*. 1985;112(5):569-73. [[Crossref](#)] [[PubMed](#)]