

Case Report

Demodicosis: A Neglected Cutaneous Parasitic Disease in Face Lesions Examination

Sharif Maraghi*

Institute of Health Research Center, Thalassemia and Hemoglobinopathy Research Center, Infectious and Tropical Diseases Research Center, Ahwaz Jundishapur University of Medical Sciences, Ahwaz, Iran

Received: 19 June, 2015; Accepted: 25 August, 2015

Abstract

Background: Demodicosis in humans was caused by two species of *Demodex* called *folliculorum* and *brevis*. The disease is seen in male and female. Although, there is no clinical symptoms in individuals with normal immunity system, but in many cases, dermatitis, rough, dry and scaly skin rosacea, particularly asymmetrical papulopustular or granulomatous variants and in some cases, perioral dermatitis, blepharitis [inflammation of the eyelid margins] are observed. In this report 16 cases of demodicosis diagnosed in recent years are presented. **Cases:** Suspected patients with dermatophytosis who referred to the laboratory were examined in this study. In sampling, slide preparation and microscopic evaluation *Demodex* species was observed. In two cases, co- infection of dermatophytosis and demodicosis were demonstrated. Seven [43.75%] out of 16 patients were male and nine [56.25%] were female. In this study, 16 persons [4- 52 years old] were considered. None of the patients had any information about their disease and the cause. The patients were referred to the laboratory for fungi examination. **Conclusion:** Demodicosis is a cutaneous parasitic disease and it is necessary that the parasitologists and mycologists consider the demodicosis during the sampling, preparation of slide and microscopic examination of cutaneous lesions.

Keywords: Type *Demodex folliculorum*, *Demodex brevis*, demodicosis

*Corresponding Author: Sharif Maraghi. Tel: 009861 33330678; Email: maraghis@gmail.com

Please cite this article as: Maraghi Sh. Demodicosis: A Neglected Cutaneous Parasitic Disease in Face Lesions Examination. Arch Med Lab Sci. 2015;1(2):88-91.

Introduction

Demodicosis is a chronic parasitic disease affecting the skin of the nose, forehead and cheeks marked by flushing, followed by red coloration due to dilation of the capillaries with papules and acne like pustules. The causative agents and pathogenesis of rosacea are unknown and many factors such as genetics, infections, psychogenic factors and *Demodex* mites are contributing to this condition [1, 2]. *Demodex folliculorum* and *D. brevis* are cosmopolitan [3]. The size of adult mites is only between 0.1 mm and 0.4 mm long, with *D. brevis* slightly shorter than *D. folliculorum*. They have a semi-transparent elongated body consisting

of two fused segments. Eight short segmented legs attached to the first body segment. Females are somewhat shorter and rounder than males [4].

Clinical manifestations of demodicosis are varied. The infestation may be free of symptoms or the lesions might be as rose-red pustules and the most typical features of rosacea is characterized by the presence of an erythematous papule-pustule rash, mainly in the face and inflammation in acute and chronic forms may occur [5, 6]. Although *D. folliculorum* seems to be saprophyte and normal follicular inhabit [7], but in many patients with rosacea-like lesions, *Demodex* mites were observed [8-11]. Treatment options consist of several topical anti-

parasitic medicine and a few systemic drugs. Depending on the severity of the infection, topical application of metronidazole and oral use of antibiotics to prevent secondary bacterial infections is usually indicated [12, 13].

Cases

Sixteen patients (7 male and 9 female) with facial rosacea like referred to Iran-Zamin diagnostic laboratory in Ahvaz Southwest Iran were examined. All patients were treated with anti- histamine and anti-fungal medicine without any affecting during the period of infection. None of them had any diagnostic examination prior treatment. Figure 1 show patients who referred for fungal examination. Scotch tape

examination from the neck and trunk of the first patient revealed *Tinea versicolor*. Scraping from the facial lesions of all patients and smear preparation with 20% KOH and microscopic examination indicated the *D.folliculorum* (fig. 2). One of the patients had co-infection of *T. facei* and *Demodex folliculorum*. All patients referred to dermatologists for treatment.

Discussion

In this report, all patients were referred to the laboratory for fungal examination after administration of different medication without any success. One of the subjects (wrestler) was infected with *Tinea versicolor* and another one demonstrated co- infection



Figure 1. Patients infected with *Demodex folliculorum* referred to Iran Zaminn Diagnostic laboratory.

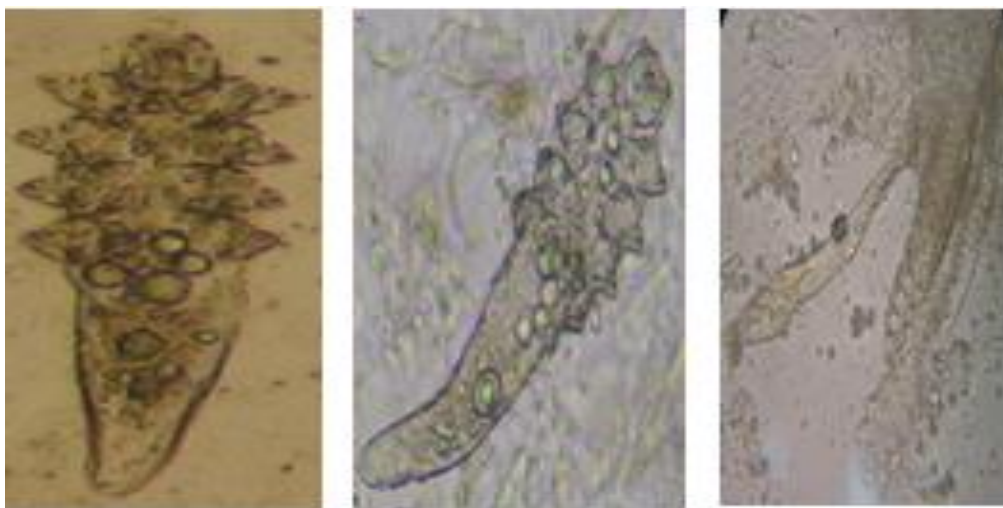


Figure 2. *D. folliculorum* mites isolated from patients referred to Iran-Zamin diagnostic laboratory.

of demodicosis and *Tinea fascei*, while all of them were infected with *D. folliculorum*. The wrestler was present in the world wrestling championship and his rival had facial lesion. Demodicosis seems to be age [7] and sex [10] dependent and highest rate of infestation is in the middle age and elderly.

Seven patients were male (44%) and nine (56%) were female. One patient at the age of 4 was immune-compromised. This condition can increase the mite infestation [14, 15]. Histopathologic studies of rosacea and non-rosacea lesions indicated that *D. folliculorum* was significantly higher in rosacea like lesions [16]. Treatment of rosacea with administration of corticosteroids did not cure the demodicosis and might cause *Demodex* population burden [17], thus *Demodex* mite can cause rosacea or severe lesions. The possibility of *Demodex* role in pathogenicity of skin lesion should be considered in laboratory examination of skin lesions to help the physicians for management of the disease and administration of suitable medication. In as much as *Demodex* mites also cause rosacea and acne-like lesions, demodicosis should be considered by dermatophytosis examination [18]. In this report, none of the patients were referred for diagnosis of demodicosis, it means that demodicosis is a neglected parasitic disease and should be considered during the sampling and microscopical examination, especially in face lesions.

Conflicts of Interest

The authors declare that there are no conflicts of interest.

Acknowledgment

I would like to express my thanks to the physicians and patients who were referred to the laboratory and for their cooperation.

References

1. Del Rosso JQ. Update on rosacea pathogenesis and correlation with medical therapeutic agents. *Cutis*. 2006;78[2]:97-100.
2. Goldsmith Lowell A. *Fitzpatrick's Dermatology in General Medicine*. McGraw-Hill Professional; 2012. ISBN 71669051.
3. Woolley Tyler A. *Acarology: mites and human welfare*. John Wiley & Sons, Inc; 1988. ISBN 471041688.
4. Ruffli T, Mumcuoglu Y. The hair follicle mites *Demodex folliculorum* and *Demodex brevis*: biology and medical importance. A review. *Dermatologica*. 1981;162[1]:1-11.
5. Pilehvar M, Zamanian A, Monsef AR, Mani-Kashani KH. *Demodex folliculorum* and rosacea. *J Hamedan Univ Med Sci*. 2001;22[4]:5-8.
6. Sibenge S, Gawkrödger DJ. Rosacea: a study of clinical patterns, blood flow, and the role of *Demodex folliculorum*. *J Am Acad Dermatol*. 1992;26[4]:590-3.
7. Pena GP, Andrade Filho JS. Is demodex really non-pathogenic? *Rev Inst Med Trop Sao Paulo*. 2000;42[3]:171-3.
8. Bonnar E, Eustace P, Powell FC. The *Demodex* mite population in rosacea. *J Am Acad Dermatol*. 1993;28[3]:443-8.
9. Crawford GH, Pelle MT, James WD. Rosacea: I. Etiology, pathogenesis, and subtype classification. *J Am Acad Dermatol*. 2004;51[3]:327-41.

10. Moravvej H, Dehghan- Mangabadi M, Abbasian MR, Meshkat-Razavi G. Association of rosacea with demodicosis. *Arch Iran Med.* 2007;10[2]:199-203.
11. Roihu Tia, Kariniemi Arja-Leena. *Demodex* mites in acne rosacea. *J Cutan Pathol.* 2006;25[10]:550-2.
12. Junk AK, Lukacs A, Kampik A. [Topical administration of metronidazole gel as an effective therapy alternative in chronic *Demodex* blepharitis--a case report]. *Klin Monbl Augenheilkd.* 1998;213[1]:48-50.
13. Liu J, Sheha H, Tseng SC. Pathogenic role of *Demodex* mites in blepharitis. *Curr Opin Allergy Clin Immunol.* 2010; 10 [5]: 505- 10.
14. Castanet J, Monpoux F, Mariani R, Ortonne JP, Lacour J Ph. Demodicidosis in an immunodeficient child. *Pediatrics dermatology.* 2008;14[3]:219-20.
15. Jansen T, Kastner U, Kreuter A, Altmeyer P. Rosacea-like demodicidosis associated with acquired immunodeficiency syndrome. *Br J Dermatol.* 2001;144[1]:139-42.
16. Monsef Alireza, Eghbalian Fatemeh. Histopathologic Study of Rosacea and the Role of *Demodex Folliculorum*. *Iran J Pathol.* 2006;[4]:169-72.
17. el-Shazly AM, Ghaneum BM, Morsy TA, Aaty HE. The pathogenesis of *Demodex folliculorum* [hair follicular mites] in females with and without rosacea. *J Egypt Soc Parasitol.* 2001;31[3]:867-75.
18. Maraghi S, Rafiei A, Kaydani GH. Human demodicosis: A report of 5 cases. *Jundishapur J Microb.* 2013;6[5]. DOI: 10.5812/jjm.7465.