

## Dermoscopic Findings and the Histopathological Correlation of a Case of Cutaneous Rhinosporidiosis

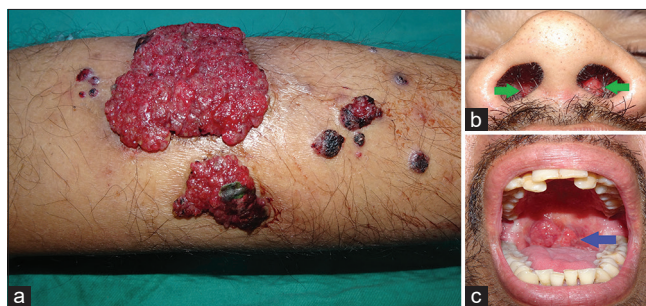
Dear Editor,

A 35-year-old male presented with a rapidly growing skin lesion over the posterior aspect of the right leg for the past 3 months. There was a history of occasional bleeding after minor trauma. There was a large exophytic friable growth [Figure 1a] with a moist surface and crusts at places on examination. A similar but smaller growth was present adjacent to it, with multiple small crusted nodules surrounding them. These were aggregated in the posterior aspect of the right leg only. His nasal cavity [Figure 1b] showed a bilateral polypoidal mass with a strawberry appearance with a similar sizeable polypoidal mass in the oral cavity [Figure 1c].

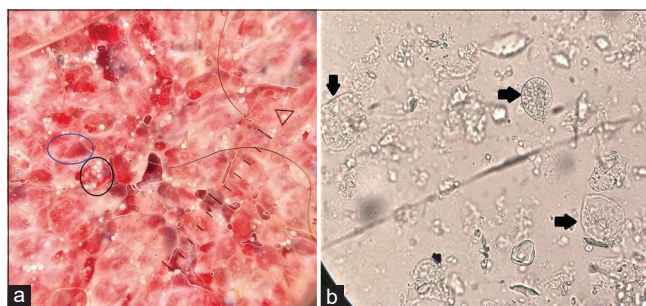
He had been getting these nasal growths from 15 years of age, for which he had undergone surgery about ten times. He had taken oral dapsone for about a year, but in vain, they still recurred. He gave a history of bathing in his village's ponds and water bodies in childhood, from which he refrained presently, as advised after surgery.

The lesion's dermoscopy (Heine delta 30T; glass slide as an interface) under polarized light showed numerous white globules over a background of multiple red lacunae circumscribed by white lines as margins [Figure 2a]. These white globules were shiny and of similar sizes, distributed over the red cutaneous growth. Examination of the lesion under non-polarized light was glistening, and details were not well appreciated. A potassium hydroxide (KOH) mount of superficial scrapings of the cutaneous growth showed large sporangia with spores in various stages of development [Figure 2b]. Biopsy and histopathology [Figure 3] revealed nodular granulomatous infiltrate in the upper dermis with several large sporangia in the epidermis, of about 100–250 microns in size, containing numerous amphiphilic stained spores, which confirmed our diagnosis of cutaneous rhinosporidiosis. The dermis had multiple proliferated capillaries with extravasated RBCs lined by compressed collagen and fibroblasts; these were seen as red lacunae in dermoscopy. The shiny white globules seen on dermoscopy were the sporangia. He was referred to plastic surgery and ENT departments for the removal of the cutaneous and nasopharyngeal growths.

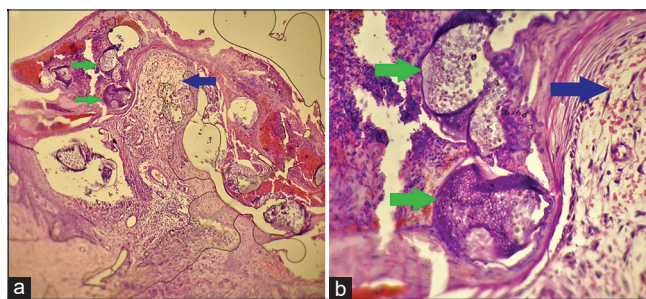
The clinical presentation can be misleading without a thorough clinical examination, especially mucosa. Multiple morphologies of cutaneous rhinosporidiosis have been described ranging from the subcutaneous nodule to ulceration,<sup>[1]</sup> warty friable verrucous papules, polypoid exophytic growths, cutaneous horn,<sup>[2]</sup> molluscum-like papules, pedunculated mass, cystic lesions, and even tumour-like nodules.<sup>[3,4]</sup> Pyogenic granuloma, bacillary angiomatosis, tuberculosis verrucosa cutis, cryptococcosis,



**Figure 1:** (a) Large, exuberant exophytic growth with satellite crusted nodules surrounding it; (b) and (c) polypoidal strawberry-like growths in the bilateral nasal cavity (green arrows) and oral cavity (blue arrow)



**Figure 2:** (a) Polarized dermoscopy (Heine delta 30T, 10x; glass slide as an interface) shows numerous white globules (black circle) over a background of multiple red lacunae (blue circle); (b) KOH of the imprint smear showing sporangium containing the endospores in various stages of development (marked by black arrows)



**Figure 3:** Nodular granulomatous infiltrate in the upper dermis with the overlying epidermis partially eroded; a large part of the center of the granuloma has several large sporangia (green arrow) containing numerous immature and mature rounded or oval spores in H & E 10x (a) and H & E 40x (b). Blue arrow shows blood-filled lacunae with red blood cells

cutaneous leishmaniasis, lupus vulgaris, and Kaposi sarcoma are differentials.

Imprint smears can be taken, and sporangia in different stages of maturation with endospores can be demonstrated with 10% KOH and Papanicolaou stains. In histopathology, characteristic thick bilamellar chitinous walled globular cysts in various stages of maturation with numerous endospores within can be demonstrated in a Swiss cheese

**Table 1: Common differentials of cutaneous rhinosporidiosis and their salient dermoscopic features under polarized light**

Differentials	Salient dermoscopic findings (polarized light)
Pyogenic granuloma	Shows homogeneous red lesions with white lines within and no clear lacunar pattern. Ulceration and crusts are also frequently noted. <sup>[6]</sup>
Tuberculosis verrucosa cutis	Shows a yellowish to red background with whitish scales and minimal red vascular structures in the peripheries of the lesion. <sup>[7]</sup>
Lupus vulgaris	Red globules and vessels are usually noted in association with yellowish globules and white scales on a pink background. <sup>[8]</sup>
Kaposi's sarcoma	Shows bluish-reddish coloration, a multi-colored area (rainbow spectrum), and a scaly surface. Small brown globules are also noted in some cases. <sup>[9]</sup>
Bacillary angiomatosis	Shows mostly oval bright red areas and globular structures, with a grayish background. The periphery of the lesion shows arborizing telangiectasias. <sup>[10]</sup>

pattern. Chronic lymphocytic infiltrates, plasma cells, and foreign body giant cells are also found.

Medical treatment alone yields unsatisfactory results; surgical excision of the lesion with electrocautery of the base is almost curative, although there are chances of recurrence primarily because of the procedural spillage of endospores. Many drugs have been tried, but the treatment remains elusive.<sup>[5]</sup>

Dermoscopy can help differentiate common differentials [Table 1]. To the best of our knowledge, dermoscopic findings of cutaneous rhinosporidiosis have not been described. This report will help in quick and non-invasive diagnosis whenever cutaneous rhinosporidiosis is suspected. However, excessive glistening under non-polarized light is a limitation but can be one characteristic which needs to be confirmed in future cases.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

**Ghazal Ahmed, Satyaki Ganguly<sup>1</sup>,  
Namrata Chhabra<sup>1</sup>, Anju George C<sup>1</sup>,  
Jemshi S. Rahim<sup>1</sup>**

Department of Dermatology, Venereology and Leprosy, All India Institute of Medical Sciences, Deoghar, Jharkhand, <sup>1</sup>Department of Dermatology, Venereology and Leprosy, All India Institute of Medical Sciences, Raipur, Chhattisgarh, India


### Address for correspondence:

Dr. Ghazal Ahmed,  
Department of Dermatology, Venereology and Leprosy, All India Institute of Medical Sciences, Deoghar - 814 142, Jharkhand, India.  
E-mail: ghazal.ahmed4u@gmail.com

### References

- Verma R, Vasudevan B, Pragasam V, Deb P, Langer V, Rajagopalan S. A case of disseminated cutaneous rhinosporidiosis presenting with multiple subcutaneous nodules and a warty growth. *Indian J Dermatol Venereol Leprol* 2012;78:520.
- Sirka CS, Dash G, Pradhan S, Baisakh M. Cutaneous rhinosporidiosis presenting as cutaneous horn and verrucous plaque. *Indian Dermatol Online J* 2019;10:178-9.
- Kaushal S, Mathur SR, Mallick SR, Ramam M. Disseminated cutaneous, laryngeal, nasopharyngeal, and recurrent obstructive nasal rhinosporidiosis in an immunocompetent adult: A case report and review of literature. *Int J Dermatol* 2011;50:340-2.
- Salim T, Komu F. Varied presentations of cutaneous rhinosporidiosis: A report of three cases. *Indian J Dermatol* 2016;61:209-12.
- Janardhanan J, Patole S, Varghese L, Rupa V, Tirkey AJ, Varghese GM. Elusive treatment for human rhinosporidiosis. *Int J Infect Dis* 2016;48:3-4.
- Kissou A, Hassam BE. Dermoscopy of pyogenic granuloma. *Pan Afr Med J* 2017;27:110.
- Jakhar D, Gupta RK, Sarin N. Dermoscopy of tuberculosis verrucosa cutis. *Indian Dermatol Online J* 2020;12:206-7.
- Ankad BS, Adya KA, Gaikwad SS, Inamadar AC, Manjula R. Lupus vulgaris in darker skin: Dermoscopic and histopathologic incongruity. *Indian Dermatol Online J* 2020;11:948-52.
- Hu SC, Ke CL, Lee CH, Wu CS, Chen GS, Cheng ST. Dermoscopy of Kaposi's sarcoma: Areas exhibiting the multicoloured 'rainbow pattern'. *J Eur Acad Dermatol Venereol* 2009;23:1128-32.
- Enei ML, Paschoal FM, Valdes R. Dermoscopy of bacillary angiomatosis: Utility in diagnosis and therapeutic control. *Dermatol Pract Concept* 2021;11:e2021088.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Access this article online	
<b>Website:</b> www.idoj.in	<b>Quick Response Code</b> 
<b>DOI:</b> 10.4103/idoj.idoj_293_22	

**How to cite this article:** Ahmed G, Ganguly S, Chhabra N, George CA, Rahim JS. Dermoscopic findings and the histopathological correlation of a case of cutaneous rhinosporidiosis. *Indian Dermatol Online J* 2023;14:413-4.

**Received:** 18-May-2022. **Revised:** 23-Aug-2022.

**Accepted:** 15-Sep-2022. **Published:** 23-Feb-2023.

© 2023 Indian Dermatology Online Journal | Published by Wolters Kluwer - Medknow