

Introduction

Scabies, a neglected tropical disease, poses significant challenges to public health, especially in vulnerable populations. This is a case study of a 94-year-old male retiring home resident patient with multiple comorbidities, including Alzheimer's, diabetes, and recent Covid-19 infection, who presented with uncontrollable itching and skin lesions. This case caused a public health crisis in the hospital and in the retirement home nearest the hospital. Environmental risk factors, such as poor sanitation and dust exposure, were identified as significant contributors to scabies transmission in the hospital and retirement home setting. This case underscores the complexity of managing scabies in underdeveloped communities, where access to healthcare and hygiene practices are limited. Moving forward, a comprehensive approach that addresses both individual and environmental factors is essential for preventing and controlling scabies infections infestation in vulnerable populations.



Image 1: Lesions in the face: erythematous-scaly plaques (scabies).

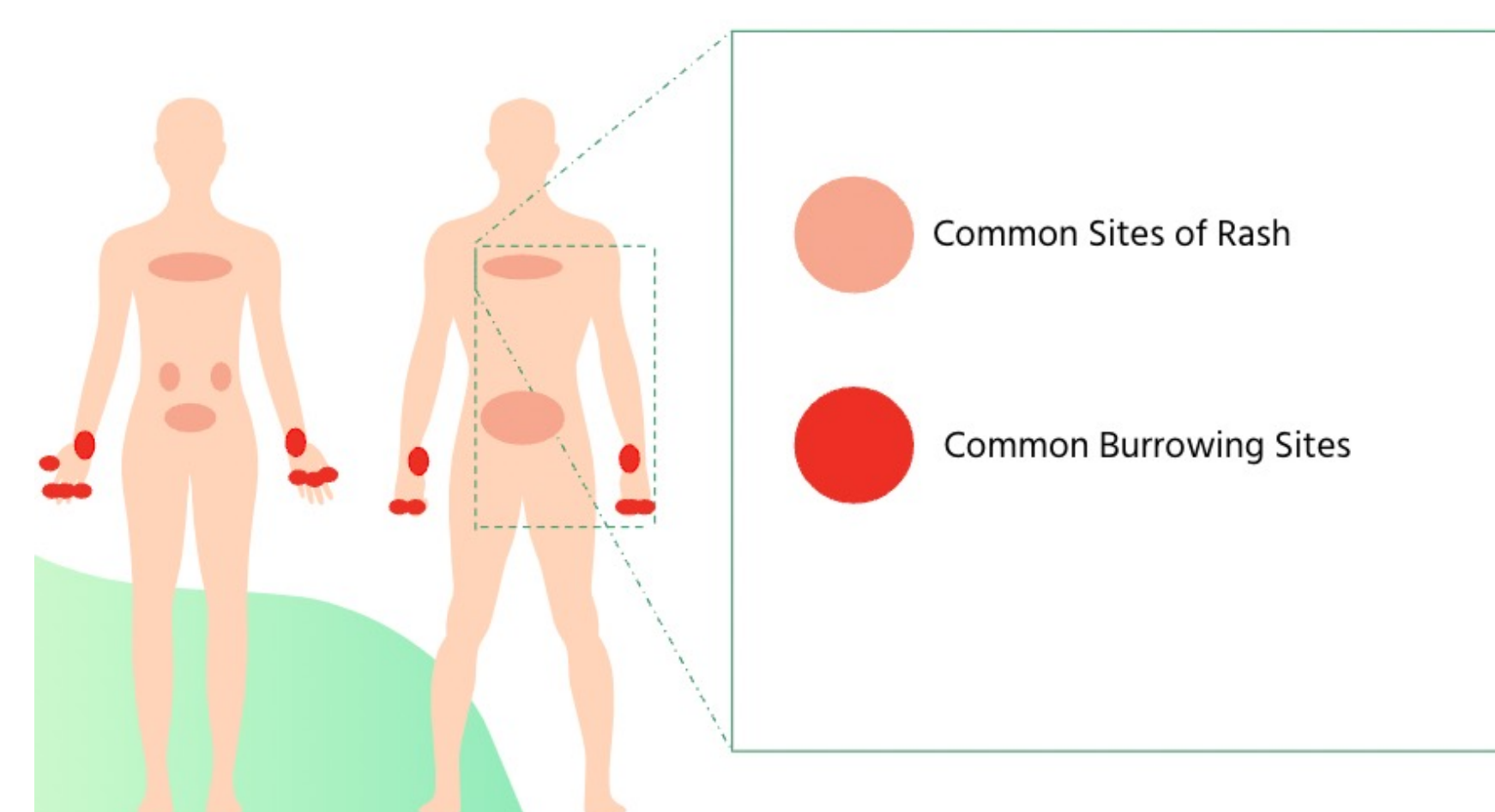


Image 2: Common sites of Scabies Rash and burrowing sites.

Methods

Clinical research rotation at the Hospital Centrale de la Defensa Gómez Ulla in Madrid, Spain, in Immunology under Dr. Elizabeth Angélica Sarmiento Marchese, Dermatology under Dr. Veronica María Loreto Carrasco Santos, Allergy under Dr. Angela Nuñez, and public health departments. This hospital is located in the district of Carabanchel, an low-income mainly immigrant community with prevalent drug and gang crime.¹ Qualitative data from the clinical case study includes patient's background, medical history, reason for visit, and medications (frequency and dosage) from May to July 2023. An epidemiologic and medical literature review was conducted on the environmental sanitation and the spread of scabies infestation.

Results/Discussion

The patient exhibited erythematous thick yellowish scaling crusts on the upper and lower limbs, face and abdomen. The patient was administered multi pharmaceutical therapy to control the itching and prevent further lesions. Medications including Prednisone, Clovate cream (steroid), Fluconazole 100 mg (14 days) Ibis 20 mg (every 8 hrs), Atarax 25mg/12 hrs, Bilastine 2 mg/day. Elocon mixed with Paraffin was used for a short period (15 days). Finally, Vaseline, calcium/12 hrs, Ceftazidime, and Corticoid IV were administered. In July after 3 months of delayed proper diagnosis, the patient was diagnosed with scabies. Patient responded well to a treatment of Ivermectin and moisturizers. Delayed diagnosis in Alzheimer patients is notorious and often attributed to loneliness especially in retirement homes where caretakers may overlook patient symptoms.² Additionally, the retirement home of the patient did not take the proper environmental sanitary measures to prevent further spread of scabies within the retirement home. During the patient's hospitalization, many other scabies cases surged in the retirement home, among hospitalized patients on the same floor and in resident physicians taking care of the patient from this clinical case study.

Conclusion

- Environmental risk factors, such as dust exposure and poor sanitation in retirement homes were identified as significant contributors to scabies transmission. The patient's case underscores the challenges of managing scabies in underdeveloped low-income communities with poor public health protocols. Public health protocols addressing early detection of scabies should be a priority in retirement homes to limit scabies outbreaks. Managing scabies in vulnerable populations from impoverished areas in developing countries, requires a multifaceted approach that addresses both individual and environmental factors. The clinical suspicion of scabies should be addressed by physicians treating retirement home patients before engaging a multi-pharmaceutical approach that delays scabies diagnosis.

Future Directions

Future research should be conducted to integrate epidemiological and medical collaboration to establish protocols that help to identify and treat preventable infectious disease spread. Conduct longitudinal studies to assess the long-term benefit of introducing public health education among retirement workers on reducing scabies spread.

Table 1. Immunological results of patient analysis (April - June 2023)

	April→May→June 2023	Reference Value
Erythrocytes (10 ⁶ /μL)	5.63→5.98→4.48→5.36→4.43	[4.20-5.80]
Leukocytes (10 ³ μL)	13.22→17.39→12.01→21.34→18.34	[4.00-10.00]
Neutrophils (10 ³ /μL)	9.62→12.03→8.17→17.53→14.75	[1.80-7.00]
Platelets (10 ³ /μL)	195.00→242.00→91.00→89.00→123.00	[150.00-450.00]
Fibrinogen (mg/dl)	556→ → →648.00	[150.00-450.00]
Eosinophils (10 ³ /μL)	1.25→0.55→1.82→1.66→1.54	[0.00-0.70]
IgE (kU/l)	4516	[33.00-188.00]
VHA IgG	Positive	

Table 2. Medication dosage of patient (June 2023)

Medications		Reference Value
Ampicillin (kU/l)	0.76	[0.00-0.35]
Amoxicillin (kU/l)	0.48	[0.00-0.35]
Cefaclor (kU/l)	0.44	[0.00-0.35]

References

1. Crime Rates And Safety Statistics In Madrid. FasterCapital. Accessed April 23, 2024. <https://fastercapital.com/keyword/crime-rates-and-safety-statistics-in-madrid.html>
2. Hamdy RC, Lewis JV, Kinser A, et al. Too Many Choices Confuse Patients With Dementia. *Gerontol Geriatr Med.* 2017;3:2333721417720585. doi:10.1177/2333721417720585
3. Rahman MdS, Hasan ABMN, Jahan I, Sharif AB. Prevalence of scabies and its associated environmental risk factors among the Forcibly Displaced Myanmar Nationals living in the Cox's Bazar district of Bangladesh. *J Migr Health.* 2024;9:100220. doi:10.1016/j.jmh.2024.100220
4. Kurane I. The Effect of Global Warming on Infectious Diseases. *Osong Public Health Res Perspect.* 2010;1(1):4-9. doi:10.1016/j.phrp.2010.12.004
5. FastStats. Published November 4, 2023. Accessed April 22, 2024. <https://www.cdc.gov/nchs/fastats/infectious-disease.htm>
6. Barba-Martin R, Marco Martinez J, Canora Lebrato J, Plaza Canteli S, Zapatero Gaviria A. Analysis of infectious diseases care in Spanish hospitals from 2016 to 2020, including the first year of the SARS-CoV-2 pandemic. *Rev Clin Esp.* 2023;223(5):310-315. doi:10.1016/j.reeng.2023.04.001
7. Roswendi AS, Zakayah Y. Relationship Between Environmental Sanitation and the Incidence of Scabies: A Literature Review. *KnE Med.* Published online June 3, 2022;207-215. doi:10.18502/kme.v2i2.11083