Clinicodemographic Profiles and Outcomes of Mycetoma: A Retrospective Case Series at Jose R. Reyes Memorial Medical Center

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ABSTRACT

Background: Mycetoma is a chronic, progressively destructive granulomatous infection caused by fungi (eumycetoma) or bacteria (actinomycetoma). It is recognized by the WHO as a neglected tropical disease. Despite its presence globally, the incidence and burden in the Philippines remain poorly documented.

Objectives: To determine the prevalence, clinicodemographic profile, and outcomes of mycetoma diagnosed at the Jose R. Reyes Memorial Medical Center - Department of Dermatology from January 2014 to December 2024.

Methods: A retrospective chart review was conducted among patients diagnosed clinically and confirmed either microbiologically and/or histopathologically with mycetoma. Data collected included age, sex, occupation, risk factors, lesion characteristics, causative agent, diagnostic method, treatment, and outcomes.

Results: Four cases of actinomycetoma were identified, all with pedal involvement. The majority were male (75%) and over 40 years old. One patient had an agricultural occupation. Most were from outside Metro Manila. Histopathologic confirmation was present in all cases. Three patients were lost to follow-up. Only the patient treated for over 12 months achieved clinical improvement.

Conclusion: Mycetoma remains a rare but significant disease in the Philippines. Findings support existing literature on male predominance, pedal localization, and the importance of prolonged antimicrobial treatment. Greater surveillance, early diagnosis, and follow-up strategies are essential.

Keywords: *mycetoma, actinomycetoma, granulomatous infections, plantar lesion, chronic lesion*

INTRODUCTION

Mycetoma, Maduromycosis, or Madura foot is a chronic, localized infection caused by either fungi (eumycetomas) or aerobic actinomycetes or filamentous bacteria (actinomycetomas). While most commonly seen in the feet, it can also occur in other parts of the body. It is characterized by a symptomatic triad: swelling of the affected area, multiple sinus formation, and a purulent discharge containing grains. The grains represent microcolonies of the causative agent. The progression of the disease is slow and painless, but may affect deep structures such as muscles, tendons, joints, fascia and bones. Patients are otherwise in good health with no satellite adenopathies. Diagnosis is usually based on the clinical presentation and identification of the etiological agents in the tissue by culture and histopathological exam. Eumycetomas predominantly occur in Africa and Southern Asia with *Madurella mycetomatis* being the most frequent eumycete accounting for 70% of all cases in Sudan. On the other hand, Actinomycetomas are predominately seen in the Americas with *Nocardia brasiliensis* being the most prevalent organism responsible for 86% of all cases in Mexico. Treatment usually poses a challenge and in many cases, combination of surgery and antimicrobials are preferred. An approach that involves early diagnosis, the use of systemic antimicrobials, as well as surgical interventions, are the main issues that need to be-addressed.

According to WHO, the global burden of mycetoma is unknown, but the causative organisms of mycetoma are distributed worldwide and are endemic in tropical and subtropical areas in the so called 'Mycetoma belt', which includes the Bolivarian Republic of Venezuela, Chad, Ethiopia, India, Mauritania, Mexico, Senegal, Somalia, Sudan, and Yemen. Cases have been reported infrequently from Southeast Asian countries, including the Philippines, the majority of which has a prolonged rainy season unlike the arid regions usually associated with mycetoma. Currently, accurate data on its incidence and prevalence are not available. However, most cases have been reported from Mexico and Sudan.

To build national capacities on mycetoma, the Government of Sudan and WHO convened the First International Training Workshop on Mycetoma in Khartoum on 10-14 February 2019. It provided a unique opportunity to share experiences and standardize practices relating to diagnosis, treatment and surveillance. The workshop was followed by the Sixth International Conference on Mycetoma in Khartoum on 15-17 February

Disclosures: *The author has formally acknowledged and signed a disclosure affirming the absence of any financial or other relationships (including personal connections), intellectual biases, political or religious affiliations, and institutional ties that could potentially result in a conflict of interest.*

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2019. The Conference adopted the 'Khartoum Call for Action on mycetoma' which calls on a wide range of actors to take specific public-health and policy measures to address the burden of mycetoma.

At present, active case-finding with early diagnosis and treatment with currently available tools is the most appropriate approach for lessening Mycetoma's disease morbidity and disability.

METHODOLOGY

Data were collected through manual review of charts of Mycetoma patients at the Dermatology Outpatient Department (OPD) of Jose R. Reyes Memorial Medical Center over an 11-year-period from January 2014 to December 2024. Specifically, the following data were collected and analyzed: patient's age, sex, occupation, area of residence, risk factors, affected site, lesion morphology, disease duration, causative agent, mode of diagnosis, treatment given, treatment duration, and outcome. The risk factors investigated included history of trauma, immunosuppression, and malnutrition. The site of affectation was also identified. Each case was assessed for its diagnostic modality, which may have included clinical evaluation alone or in combination with microbiologic and/or histopathologic confirmation.

To address potential data quality concerns, a standardized data collection tool was used to ensure consistency, completeness, and accuracy in data abstraction. The collection tool included predefined fields covering key variables mentioned in the previous paragraph. The variables aligned with the study objectives and the WHO case definitions for mycetoma ("suspected," "probable," and "confirmed"), which were retrospectively applied based on the available clinical, histopathological, and microbiological data to ensure standardization and consistent application of diagnostic criteria across the study period.

All data entries were cross-verified by two independent reviewers. In cases of missing data, the nature of the missing information (e.g., missing microbiologic or histopathologic confirmation) was documented, and such limitations were clearly acknowledged in the analysis.

RESULTS

Case Reports

Case 1

A 61-year-old male construction worker from Quezon City, with no known comorbidities, a history of smoking (unknown pack-years), and occasional alcohol intake, presented with a 25-year history of progressively enlarging nodules on the left foot **(Figures 1A-1C)**. The initial lesion, a solitary asymptomatic nodule measuring approximately 0.5 cm, developed on the plantar surface of the left foot shortly after the patient had waded through floodwaters. At that time, there was no associated discharge, pain, or systemic symptoms, and the patient denied any history of trauma, radiation exposure, or prior medications. Over the years, he noted a gradual increase in both the size and number of nodules, accompanied by swelling. Ten years prior to presentation, the lesions became tender and painful on ambulation, although he remained functional in daily activities and denied fever or lymphadenopathy. Two months before consultation at our institution, the lesions progressed significantly, with marked swelling and pain that rendered the patient unable to bear weight. He also noted the development of ulcers with serosanguinous discharge, which later crusted over. This prompted medical repatriation from Saipan.

On examination, multiple well-defined erythematous nodules and tumors were observed on the dorsal, lateral, and plantar aspects of the left foot, with some showing serosanguinous discharge and crusted erosions. Lesions extended to the interdigital areas, obliterating the toe webs, while the toenails were dystrophic with distal onycholysis and subungual hyperkeratosis. There were no varicosities, and peripheral pulses were intact and symmetrical. Histopathologic analysis of a nodule showed a hyperplastic epidermis and dermal infiltrates composed of lymphocytes and neutrophils surrounding PAS-positive sulfur granules **(Figure 1D)**, consistent with Actinomycetoma. No fungal hyphae were identified. Radiographic findings **(Figures 1E-1F)** demonstrated sclerotic changes in the shafts of the second to fourth metatarsals and periosteal thickening of the distal fibula, suggestive of chronic infection. Fungal culture yielded multiple contaminants, while gram staining and CBC revealed leukocytosis with neutrophilic predominance.

Based on the clinical, histologic, and radiographic findings, a diagnosis of Actinomycetoma was made. The patient was started on oral trimethoprim-sulfamethoxazole (TMP-SMX) 800/160 mg three times daily for six months and mupirocin 2% ointment applied twice daily to eroded areas for one week. Dapsone 100 mg once daily was later added following normal ancillary tests. He reported decreased pain and reduction in lesion size without adverse drug reactions and eventually lost to follow up.

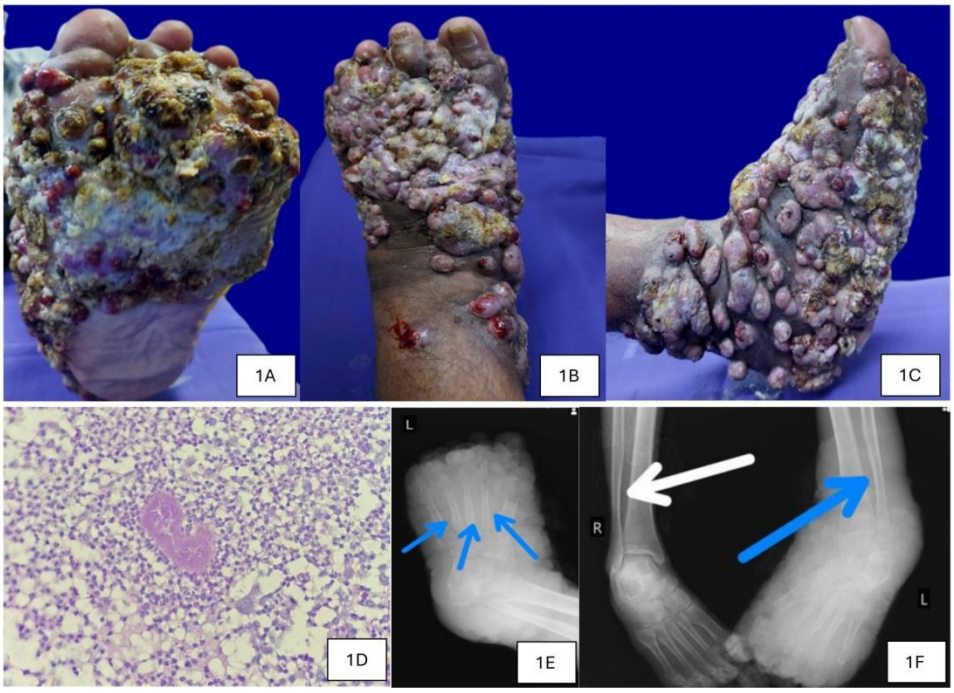


Figure 1. Multiple well-demarcated erythematous nodules and tumors with erosions and serosanguinous discharge, some topped with yellow crusts, involving the dorsal, lateral, and plantar aspects of the left foot (1A-1C); Lesions in the interdigital spaces caused obliteration of the toes and toe webs. Dystrophic nails exhibited onycholysis and subungual hyperkeratosis; Periodic acid–Schiff (PAS) stain at 10× magnification demonstrated hyperplastic epidermis with a mixed inflammatory infiltrate composed of lymphocytes and neutrophils (1D); Radiographic imaging revealed sclerotic changes involving the shafts of the 2nd to 4th metatarsals (1E); Thickened periosteum with a uniform periosteal reaction was noted in the distal fibula (1F) *Images credit: Dr. MD Wong*

Case 2

A 33-year-old unemployed female from Pangasinan, with no known comorbidities and no history of smoking or alcohol intake, presented with an eight-year history of firm, asymptomatic, skin-colored papules on the left sole. The lesions persisted without intervention until three years prior to consultation, when she noted enlargement of the lesions along with white discharge and swelling. She sought consultation at a local health center and was diagnosed with a fungal infection, receiving unrecalled medications for 3 weeks which did not improve her symptoms. Persistence of the lesions prompted further medical evaluation.

An initial incision biopsy revealed granulomatous dermatitis. However, the patient was lost to follow-up. Four months later, she returned with new nodules and white discharge over the dorsum of the left foot. A repeat biopsy revealed nodular dermatitis, raising the possibility of actinomycetoma. Gram stain and PAS stain were requested. The final histopathologic diagnosis was Actinomycetoma, although PAS stain was negative for sulfur granules. She was started on TMP-SMX 800/160 mg twice daily for four months, resulting in slight clinical improvement. She was lost to follow-up again but later returned, and the TMP-SMX dose was increased to three times daily for eight months. This led to a reduction in lesion size, drying of discharge, and lessening of pain and pruritus. The patient was subsequently lost to follow-up once more. Clinical photographs for this case were unavailable.

Case 3

A 56-year-old male farmer from Pangasinan, with no known comorbidities, presented with a four-year history of a solitary, ill-defined hyperpigmented nodule on the left foot that progressively involved most of the dorsal aspect. He initially consulted a private dermatologist and was prescribed unrecalled topical cream and oral tetracycline 500 mg three times daily for one week,

without a specific diagnosis. He later sought a second opinion at our institution. An incision biopsy revealed findings consistent with Actinomycetoma, and a radiograph of the left foot showed diminished bone density, periosteal reaction of the fourth metatarsal, and spurring of the calcaneus.

The patient was treated with TMP-SMX 800/160 mg three times daily for nine months, resulting in improved pain, reduced swelling, and resolution of discharge. A repeat biopsy revealed scar tissue, and a follow-up X-ray showed cortical irregularity of the dorsal fourth metatarsal with associated soft tissue swelling, suggesting osteomyelitis. He was lost to follow-up for three years but returned with a two-month history of swelling and a two-week history of a fluctuant, tender nodule on the left foot. He resumed TMP-SMX therapy and was also prescribed diclofenac 50 mg as needed for pain. Two months later, he noted decreased lesion size, with intermittent eruptions resolving with medication. He reported poor response to generic TMP-SMX brands. Eight months after restarting therapy, new labs were requested, including wound gram stain, culture and sensitivity, and a repeat X-ray which again showed signs of osteomyelitis. G6PD assay was also done and yielded a value of 9.65 (low).

Dapsone 100 mg daily was added to the regimen, later tapered to every other day. The patient continued TMP-SMX for a total of 24 months and dapsone for 12 months, with significant clinical improvement including resolution of tenderness and absence of new lesions. Residual ill-defined hyperpigmented patches remained on the dorsal foot. After a two-month extension of treatment, surgical debulking and skin grafting were recommended, and he was referred to Plastic Surgery, with further plans to continue TMP-SMX and dapsone for an additional three months. Clinical photographs for this case were unavailable.

Case 4

A 47-year-old male delivery man from Bulacan, a former rice field farmer for three years, with no history of smoking, alcohol intake, or known comorbidities, presented with a chronic history of right foot lesions. Fifteen years before consultation, he accidentally stepped on a barbed wire while working in a muddy field, leading to a puncture wound followed by the development of a solitary erythematous papule with yellowish purulent discharge. This lesion resolved after one week of oral antibiotics. The patient remained asymptomatic until four years prior to consultation when he noticed a few skin-colored to pinkish papules on the dorsum of the right foot, which progressively increased in number and developed draining sinuses with purulent discharge. He denied pain, warmth, swelling, or systemic symptoms and did not seek further consultation.

Two years prior to consultation, the patient developed more lesions and nodules. An incision biopsy performed by a dermatologist in Bulacan revealed a fungal infection, for which he was prescribed unrecalled oral antifungals and a topical cream, without improvement. One year later, he sought a second opinion with a dermatologist in Pampanga who performed a punch biopsy, allegedly showing a soil-borne bacterial infection. He was treated with Doxycycline 100 mg twice daily for three months, again without improvement.

The patient later developed worsening symptoms including pain on ambulation (pain scale 8/10) and occasional pruritus, prompting referral to our institution. Examination revealed multiple skin-colored to pinkish papules and erythematous nodules on the right foot, with numerous draining sinuses and hemorrhagic to purulent discharge. There was also evident swelling of the right foot (**Figure 2A and 2C)**.

X-ray of the right foot **(Figure 2E)** showed multiple lytic lesions and cortical erosions involving the tarsals, metatarsals, and phalanges, with preserved joint spaces and soft tissue swelling. Biopsy confirmed Actinomycetoma, with a positive PAS stain for sulfur granules, gram-positive filamentous bacilli **(Figure 2F)** on Gram stain and Splendore–Hoeppli phenomenon on H&E stain **(Figure 2G)**. KOH mount was negative for fungal elements. The patient was treated with TMP-SMX 800/160 mg twice daily and dapsone 100 mg once daily. He showed significant improvement over the first seven months (**Figure 2B and 2D)**, with resolution of swelling and decrease in the size and number of lesions, without pain, discharge, or pruritus. The patient was eventually lost to follow-up.

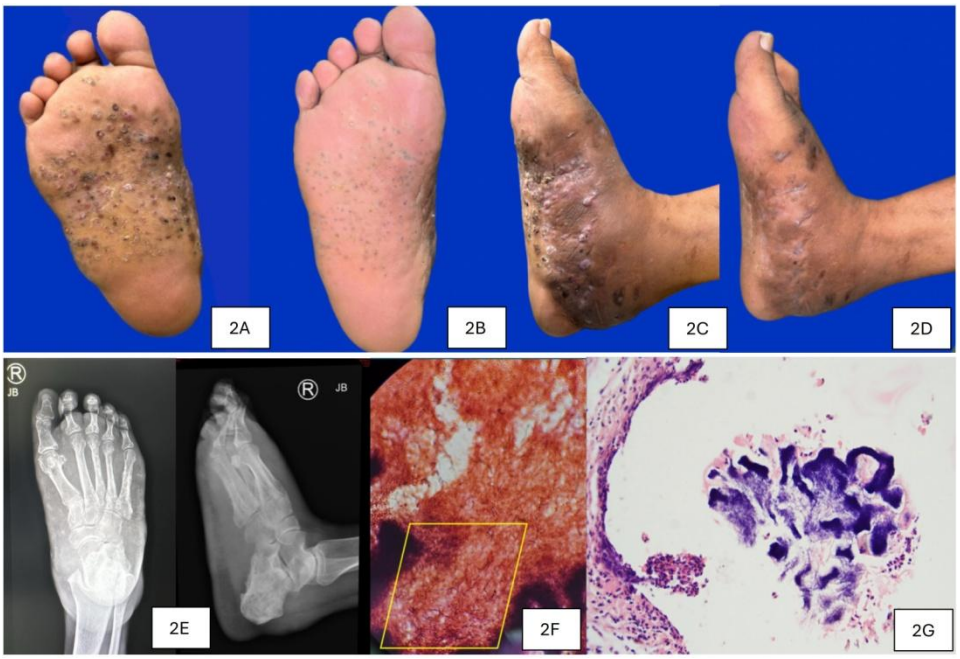


Figure 2. Multiple erythematous to hyperpigmented nodules, papules with hemorrhagic crusts, and draining sinuses on the right foot (2A, 2C); Radiograph (2E) shows multiple lytic lesions and cortical erosions; Follow-up images after 4 months (2B, 2D) of treatment showing reduced swelling, fewer papules and nodules, and resolution of crusts; Gram stain (2F) reveals gram-positive filamentous bacilli; H&E stain at 40x magnification demonstrates the Splendore–Hoeppli phenomenon (2G) *Images credit: Dr. JA Ilaya*

As shown in **Table 1**, three out of four patients (75%) were male, all of whom were over 40 years old. The single female patient (25%) belonged to the 31–40-year age group. No cases were recorded among individuals younger than 30 years. This distribution may reflect the chronic and slowly progressive nature of mycetoma, which often leads patients to seek consultation only once the disease has significantly advanced.

Sex	Age group						Total
	<21	21-30	31-40	41-50	51-60	>61	
Male n (%)	-	-	-	1 (25%)	1 (25%)	1 (25%)	3 (75%)
Female n (%)	-	-	1 (25%)	-	-	-	1 (25%)

Table 1. *Age and sex distribution of mycetoma cases (n = 4)*

All cases involved pedal mycetoma, with no extra pedal lesions reported. The majority of patients were male (75%), diagnosed with actinomycetoma (100%), and residing outside Metro Manila (75%). Only one patient reported an agricultural occupation, while the remainder were classified under other occupations. No cases of eumycetoma or extra pedal involvement were identified during the study period, as shown in **Table 2**.

Part of body	Sex		Type of Mycetoma		Occupation		Residence		Total
	Male	Female	Actinomycetoma	Eumycetoma	Agricultural	Others	Metro Manila	Outside Metro Manila	
Pedal	3	1	4	-	1	3	1	3	4
Extra pedal	-	-	-	-	-	-	-	-	0
Total	3 (75%)	1 (25%)	4 (100%)	-	1 (25%)	3 (75%)	1 (25%)	3 (75%)	

Table 2. *Clinical and epidemiologic characteristics of mycetoma cases (n = 4), showing distribution by sex, type of mycetoma, occupation, residence, and anatomic site of involvement*

As shown in **Table 3**, all patients had pedal involvement and long-standing disease (≥1 year). Actinomycetoma was the only type identified. The most common lesion morphology was nodular. Diagnosis was made clinically and confirmed by histopathology in all cases, with microbiologic confirmation obtained in two. One patient developed deformity as a complication. No cases of eumycetoma, extra pedal disease, or severe complications such as amputation or secondary infection were observed.

	Sex	
	Male	Female
Co-morbidities		
Present	1 (25%)	-
Absent	2 (50%)	1 (25%)
Affected site		
Pedal	3 (75%)	1 (25%)
Extra pedal	-	
Lesion morphology		
Papule	1 (25%)	-
Plaque	-	-
Nodule	2 (50%)	1 (25%)
Patch	-	-
Ulcer	-	-
Pustule	-	-
Vesicle	-	-
Disease duration		
Months	-	-
Years	3 (75%)	1 (25%)
Type		
Eumycetoma	-	-
Actinomycetoma	3 (75%)	1 (25%)
Unknown	-	-
Mode of diagnosis		
Clinical	3 (75%)	1 (25%)
Histopathological	3 (75%)	1 (25%)
Microbiological	2 (50%)	-
Complications		
Secondary infection	-	-
Amputation	-	-
Deformity	1 (25%)	-
Atrophy	-	-
Pain	-	-

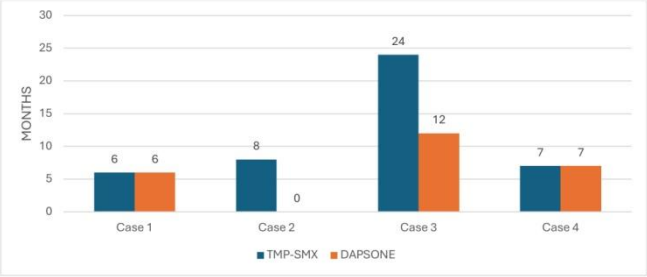
Table 3. *Clinical profile of Mycetoma patients, stratified by sex.*

As summarized in **Table 4** and **Graph 1**, three patients underwent treatment for less than 12 months and were subsequently lost to follow-up, while one patient received treatment for over 12 months and demonstrated clinical improvement. The accompanying bar graph illustrates the duration (in months) of each specific antimicrobial regimen per case, highlighting the use of trimethoprim-sulfamethoxazole (TMP-SMX) and dapsone. Combination therapy was employed in three out of four cases, with Case 3 showing the longest treatment course and the only documented improvement. These data emphasize the importance of sustained therapy and follow-up in achieving favorable outcomes.

Type of Mycetoma	Treatment Duration	Number of Patients	Treatment Outcome			
			Improved	Expired	Worsened	Lost to follow-up
Actinomycetoma	<12 months	3	-	-	-	3
	>12 months	1	1	-	-	-

Note: All cases were Actinomycetoma involving the foot

Table 4. *Treatment duration and outcomes among patients with actinomycetoma (n = 4)*



Graph 1. *Treatment duration and regimen per mycetoma case*

DISCUSSION

Mycetoma is a chronic, progressively destructive granulomatous infection of the skin and subcutaneous tissues caused by either filamentous bacteria (actinomycetoma) or fungi (eumycetoma). It classically presents with a triad of swelling, multiple sinus tracts, and discharge containing grains[9,12]. The disease primarily affects the feet and lower limbs of individuals in rural, tropical regions, particularly those with frequent exposure to contaminated soil[3,15,17]. In 2016, the World Health Organization (WHO) classified mycetoma as a Neglected Tropical Disease (NTD) due to its chronic, debilitating course, limited diagnostic and treatment options, and disproportionate impact on impoverished populations[21,22,23]. This designation aims to draw global attention to the disease and promote research, surveillance, early diagnosis, and access to effective, affordable therapies.

The findings of our study are consistent with WHO's characterization. All four cases involved actinomycetoma with pedal localization, highlighting the strong association between lower extremity involvement and environmental exposure, such as barefoot walking or agricultural labor[5,8,10]. The absence of eumycetoma aligns with prior reports showing its predominance in arid regions like Sudan, whereas actinomycetoma is more common in Southeast Asia, including the Philippines[1,14,16]. This geographic variation reinforces the need for region-specific epidemiologic data and tailored public health strategies[18].

A male predominance (75%) and mean patient age over 40 years reflect known global patterns, where adult males engaged in manual labor are most affected[2,5,17]. However, in our series, only one patient reported agricultural work, suggesting that other environmental or occupational exposures may also contribute locally. Due to the small sample size, no significant associations were found between sex, occupation, or residence and disease incidence. Nevertheless, these findings underscore the importance of

documenting risk factors in future prospective studies to support targeted case finding[15,23].

A key challenge emphasized by WHO and mirrored in our findings is the difficulty in achieving long-term treatment adherence and follow-up. Three of the four patients were lost to follow-up, with only one completing over 12 months of therapy and achieving clinical improvement. This high attrition rate highlights the need for community-based education, robust referral systems, and patient support mechanisms to ensure continuity of care[7,18]. Without sustained treatment, patients face increased risks of recurrence, disability, and worsening quality of life which are hallmarks of the cycle of neglect WHO aims to break[21,22].

Diagnostic limitations also persist. Although all patients had histopathologic confirmation, only two had microbiologic confirmation. Fungal cultures were often unavailable or contaminated, and imaging was limited to plain radiography. These challenges reflect WHO's concerns regarding diagnostic delays due to a lack of specialized laboratories and trained personnel[7,22]. There is a pressing need to develop point-of-care diagnostics and expand access to advanced imaging, such as MRI, which aids in disease staging and surgical planning[6,11].

According to the Philippine Dermatological Society-Health Information System (PDS-HIS), a total of 101 mycetoma cases were reported from 2014 to 2024 across member institutions[13]. Of these, 51 were male and 50 female, suggesting a near-equal sex distribution (1.02:1), which slightly differs from the male predominance observed in our case series. Most cases occurred in young to middle-aged adults (21-50 years), particularly in the 31-40 and 41-50 age groups, supporting the role of occupational exposure during peak working years. Pediatric cases were rare, and none were documented in infants under one year old. These trends are consistent with WHO epidemiologic data and underscore the occupational risk profile of the disease[3,17,23].

The geographic location of reporting institutions likely influenced case distribution. The University of the Philippines–Philippine General Hospital (UP-PGH), a major tertiary referral center in Metro Manila, reported the highest number of cases over the 11-year period. Its central location and established referral networks may have skewed case reporting toward areas with greater access to specialized care[1,13]. Additionally, the PDS-HIS dataset did not distinguish between actinomycetoma and eumycetoma, limiting further characterization. In contrast, our single-center series involved exclusively adult cases of chronic pedal actinomycetoma, highlighting the importance of detailed case classification to guide treatment and inform public health policy[2,8,15].

From January 2014 to December 2024, four new cases of mycetoma were diagnosed at our institution, which served a population of approximately 333,147 individuals during that period. This corresponds to an estimated incidence rate of 0.11 cases per 100,000 population per year, consistent with the global classification of mycetoma as a rare disease with low incidence but high morbidity if left untreated[17,20,23]. Despite its rarity, the burden of chronic disability, occupational loss, and disfigurement justifies its inclusion in national surveillance and public health programs, even in countries where it is uncommon[18,21].

All statistical analyses were conducted using Fisher's Exact Test, appropriate for small sample sizes and sparse data. However, the limited number of cases (n = 4) rendered the analyses underpowered. While trends such as male predominance, older age, and pedal localization were observed, these findings are descriptive rather than inferential. The absence of a control group and the inability to assess causation further limit generalizability[15].

Despite these limitations, this study contributes valuable local data to the sparse literature on mycetoma in the Philippines and Southeast Asia[1,14]. It highlights the need for larger, prospective studies that incorporate microbiologic confirmation, advanced imaging for staging, and long-term follow-up to evaluate treatment outcomes[6,7,10]. Ultimately, our findings reinforce WHO's call to action in the Ending the Neglect roadmap, urging national and regional collaboration in research, education, and policy to reduce diagnostic delays, improve treatment adherence, and lessen the burden of this preventable and manageable condition[18,21,23].

CONCLUSIONS

Mycetoma, although rare in the Philippine setting, poses a diagnostic and therapeutic challenge due to its chronicity and potential for significant morbidity. This case series highlights the predominance of actinomycetoma, its association with pedal involvement, and a higher prevalence among older males. The importance of long-term treatment and continuity of care was also underscored by treatment outcomes. Given the WHO's recognition of mycetoma as a neglected tropical disease, greater emphasis should be placed on early detection, diagnostic access, and patient retention to ensure effective disease management.

LIMITATIONS OF THE STUDY

This study only included mycetoma data from the outpatient department of Jose R. Reyes Memorial Medical Center, Department of Dermatology, within the period of January 2014 to December 2024. A potential selection bias may have existed, as only more clinically apparent or severe mycetoma cases may have undergone microbiologic or histopathologic confirmation which may have resulted in an overestimation of certain diagnostic categories or underrepresentation of early or mild cases. Mycetoma data from the other departments of the hospital were not included. Also, since this was a retrospective review of charts, there was an inherent physician-level variation in terms of history taking and physical examination data reporting. Furthermore, there was a high rate of loss to follow-up, which limited the assessment of long-term treatment outcomes and response to therapy which may reflect barriers to healthcare access, treatment costs, or lack of disease awareness, and highlights the need for improved patient tracking and retention strategies in chronic infectious diseases. Finally, the COVID-19 pandemic may have impacted clinic attendance, diagnostic work-up, and overall case detection during the study period.

RECOMMENDATIONS

The results of this study highlight the need to enhance disease awareness among healthcare providers, particularly in endemic and resource-limited settings, through sustained medical education and community engagement. Expanding access to confirmatory diagnostics such as microbiologic testing, histopathology, and imaging should be prioritized in regional centers to enable timely and accurate diagnosis. The establishment of a standardized patient monitoring system, including teleconsultation, may serve as a practical and cost-efficient strategy to reduce loss to follow-up and ensure treatment continuity in underserved areas. Developing evidence-based, affordable treatment guidelines using widely available agents like trimethoprim-sulfamethoxazole and dapsone is also warranted. Furthermore, implementing a national mycetoma registry and surveillance system would provide essential data to better understand disease burden and inform public health planning. Lastly, future studies should focus on larger, prospective cohorts using standardized diagnostic and therapeutic protocols to improve outcomes for this neglected tropical disease.

CONFLICTS OF INTEREST

None.

FUNDING

The primary investigator personally funded this study. Neither the primary nor the co-investigators received any sponsorship.

ACKNOWLEDGEMENT

The clinical images included in this paper were originally taken as part of routine patient documentation by Drs. Wong and Ilaya, who were the primary physicians at the time the patients were seen. As this study was a retrospective chart review, their contributions were limited to patient care and clinical photography. They were not involved in the study design, data analysis, or manuscript writing, and therefore are not listed as authors. All photographs were stored securely in the department's external archive, and written informed consent for medical photography was obtained from the patients prior to image capture.

AVAILABILITY OF DATA AND MATERIAL

Data supporting this study are available from the corresponding author upon reasonable request.

ETHICAL CONSIDERATIONS

This study adhered to the ethical principles outlined in the Declaration of Helsinki and the National Guidelines for Biomedical Research of the National Ethics Committee (NEC) of the Philippines. Ethics approval was obtained from the Institutional Review Board (IRB) of Jose R. Reyes Memorial Medical Center (Protocol No. 2025-052, approved on May 9, 2025). Each subject was assigned a unique study code, and all patient information was treated with strict confidentiality.

INFORMED CONSENT

This study involved a retrospective review of medical records and did not require direct patient contact. The Institutional Review Board (IRB) of Jose R. Reyes Memorial Medical Center waived the need for individual informed consent for inclusion in this chart review. However, written informed consent for clinical photography was obtained from all patients at the time of their clinical care.

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