CASE REPORT

A case report of a 73-year-old man with Leprosy from Zambia

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ABSTRACT

One of the leading causes of disability among infectious diseases is Leprosy. Despite achieving the World Health Organisation (WHO) target for leprosy control, leprosy is still eminent in Zambia and many other endemic regions such as West Africa and Asia-Pacific. Published numbers pertaining to prevalence may not give accurate values of prevalence on the ground due to factors such as loss to follow-up as leprosy patients often face stigma, hence poor healthcare-seeking behaviour, patient exclusion from the community, and barriers in research funding.

A 73-year-old male was admitted to the University Teaching Hospital with a history of long-standing wounds involving fingers and toes, which he described as painless. Physical examination revealed deformed feet and hands with no sensation on palpation. A skin biopsy was positive for Mycobacterium leprae. Based on the extent of distribution of the lesion, the patient was classified with a multibacillary subtype. Multidrug regimen treatment with dapsone, clofazimine and rifampicin was initiated.

The road to eliminating this neglected tropical disease requires more awareness of early treatment and prevention. Leprosy is still present locally, and a low index of suspicion and delays in diagnosis and treatment usually leads to debilitating outcomes.

INTRODUCTION

Leprosy, or Hansen's disease, is caused by Mycobacterium leprae and Mycobacterium lepromatosis.[1, 2] Leprosy is curable and on its way to elimination.[3] However, much still must be done within endemic regions as complications of leprosy are evident in these communities.[4] Globally, it is still a prominent cause of preventable disability.[5] Unfortunately, published numbers pertaining to prevalence are usually much less than actual prevalence on the ground or that barriers in research

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funding may be a contributing factor, Zambia inclusive.[6]

To-date, stigma has always been associated with having the disease. Patients are reluctant to come forward for medical attention for fear of being labelled both before and after diagnosis[7] and clinicians in most cases have a low index of suspicion for leprosy.[6] These combined factors increase the possibility of developing complications as the disease goes untreated. The loss to follow-up prevents the ability to detect failed treatment plans and contributes to disability.[5]

Family members shy away from their relatives with leprosy[8, 9] even cases that have been cured are still ostracised by their communities, especially the ones who suffer the disfiguring complications of leprosy. This promotes poor mental health among leprosy patients, which if not treated may lead to morbidity.[9] Leprosy is no longer considered a significant public health concern, but elimination can only be achieved when the public believes that leprosy is not as contagious as speculation has it and that it can be completely cured.[10]

Without this awareness, leprosy patients are abandoned and discriminated which leads to a reduction in cases presenting early and an increase in rates of complications. In Zambia, leprosy is still a challenge faced by the public health sector, and this case report illustrates how the various factors discussed interplay at the time of presentation and follow-up of leprosy patients.[6]

This case highlights some of the barriers to leprosy elimination, such as stigma, low index of suspicion and late presentation, and highlights that permanent disability is a result of poorly managed leprosy without taking a holistic approach to leprosy patients.

CASE DESCRIPTION

History and Examination

A 73-year-old male was admitted to the University Teaching Hospital with deformed feet and hands in the first quarter of 2020. The duration of symptoms was unclear, but the patient reported the wounds had been long-standing and were painless. The patient was not of sound mind, and a satisfactory history could not be obtained. No relatives were available to offer collateral history during the patient's admission period. Old hospital records revealed that the patient was diagnosed with paucibacillary leprosy in 2001 and treated with rifampicin and dapsone, but the treatment outcome was unknown.

On examination, his blood pressure was 129/89mmHg, his pulse rate was 66 bpm, and his temperature was 36.5°C. He was unkempt and wasted, with an approximate BMI of 17 (his height was estimated). However, he was not oriented to time or place and was incoherent in his speech.

Leonine facial features, such as a prominent forehead, sunken cheeks and prominent cheekbones were evident. On eye examination, a loss of eyebrows and iridocyclitis was notable on eye examination. No nodular swellings were identified. Unfortunately, a full eye assessment was not performed, as visual acuity and fundoscopy were not done, as the patient was not coherent and was not able to follow instructions.

His earlobes were incomplete, with the helix, scapha fossa and anti-helical fold absent. The mandible had a firm, smooth, immobile swelling of dimensions approximately 2x2x2 cm and was prominently offset from his chin to the right. His buccal cavity was noteworthy as his teeth appeared chiselled and scanty with dental caries.

The lower limbs had evident absent toes and deformed feet. The soles were ulcerated and unresponsive to painful stimuli. Dry, large (12 cm, largest diameter) open, ulcerating lesions, which exhibited various stages of healing, spanned most of the distal circumferences of all four limbs. In the supine position, both upper limbs were flexed at the elbow. Both hands' ring fingers and the right hand's third finger were missing. The rest of the fingers on both hands were contracted as shown in the images below. Both lower limbs were in a fixed flexed position at the knee joints respectively.

Neurological evaluation revealed thickened palpable tibial nerves with no sensation to painful stimuli. Muscle power could not be assessed as patient could not clearly follow instructions. The rest of the physical examination was unremarkable

Management and follow-up

A slit skin smear was performed which was positive for acid fast bacilli to confirm a diagnosis of multibacillary leprosy according to World Health Organisation (WHO) classification and grade 2 disability of hands, feet and eyes were present.[11]

The patient was previously treated with rifampicin and dapsone and due to this exposure, there was a risk for drug resistant leprosy. Therefore, the WHO and Zambia National Treatment guidelines were followed, and patient was prescribed rifampicin 600mg and clofazimine 300mg monthly +clofazimine 50mg and dapsone 100mg daily, all oral tablets, for a period of 12 months. No Surgical intervention was considered immediately as patient was on pharmacotherapy and smear was positive.

Counselling proved ineffective as he was unable to assimilate the advice given regarding wound care. Wound care with warm water was administered during the patient's stay in hospital. The patient was linked with social welfare and hospice, but the hospice, when recently contacted indicated that the patient had been picked up by relatives.

Fig. 1 shows the deformed feet with absent toes and open wounds

Fig. 2: Showing the lateral aspect of the left leg. Note the various degrees of healing.

Fig. 3: Showing the medial aspect of the right leg with a painless open wound measuring about 10x7x5 cm.

Fig. 4: Claw-shaped fingers are of note, along with wounds in different stages of healing.

Fig. 5: Confirmatory lab results revealing the presence of M. leprae

DISCUSSION

The loss of peripheral sensation, auto-amputation of the digits, leonine facie features, oculopathy and multiple skin ulcers all pointed to the diagnosis of leprosy. The patient had thickened tibial nerves and a positive slit-skin smear. According to the WHO Guidelines, these three features meet the diagnostic criteria of leprosy.[11]

The clinical diagnosis of early and paucibacillary (single bacillary) leprosy can be a challenge as it may be latent from 4 to 20 years.[2] Thus, serological and laboratory assays have been developed to supplement clinical diagnostic methods. However, these serological methods are not widely available in Zambia, partly due to cost, given the fewer cases reported annually.

In comparison to other reports of various leprosy cases, patients would present to a facility within 2 years of presentation[12, 13] and were less likely to have disabilities because of the disease and had minimal neurological involvement.[12, 14] This highlights the disparity in Zambia's health surveillance of the patient's progress in treatment. Evidence of a diagnosis of leprosy was made nearly 20 years before and it would be safe to assume that the patient may have acquired leprosy within the 4 years prior to diagnosis and was lost to follow up.

According to the 2017 WHO guidelines[11] a three-drug regimen of rifampicin, dapsone and clofazimine for all leprosy patients is recommended, with a duration of treatment of six months for paucibacillary leprosy and 12 months for multibacillary leprosy. A similar drug regimen is preferred for both types of leprosy in case there is misclassification. Patient compliance to treatment could be hindered by a number of reasons such as long duration of treatment and the possibility of hypersensitivity reactions. Up to one third of patients followed up for review have hypersensitivity reactions to treatment.[15, 16] If not treated or treated ineffectively, leprosy may lead to irreversible complications, some which the patient developed. Challenges leading to this outcome

could include but are not limited to, inconsistent follow-ups, family neglect leading to poor health-seeking behaviours and disease factors such as painless lesions that seem harmless and a long duration of treatment.

Psychosocial aspects of leprosy play a huge role in the fight for its cure.[9] In this case, a challenge faced was that the patient was not coherent, and signs of mental illness were evident. Lived experiences with the disease could have provided insights on living with this debilitating condition. A full psychiatric evaluation should have been performed to assess the patient's mental state. Rates of prevalence of dementia have been identified to be higher in leprosy patients than the general population in Taiwan.[17] In Zambian communities, like in many other countries, leprosy is believed to be a highly contagious contact disease, yet skin to skin transmission is not considered a major mode of transmission. This then deprives the patient of the social and emotional support from their family.[8] The same study also showed that family members are ashamed of having a relation who has leprosy. Not only is this a trigger for mental health problems in both family members and the affected patients, there is also a possibility of deliberate ignorance of the disease dynamics.

It is hard to ascertain the pathway to its elimination without factoring in social aspects in health facilities, such as knowledge of the early presentation of leprosy, and in the community, such as hostility and stigma against those suffering from leprosy's complications.[18] The stigma and discrimination faced by patients from their family and friends have been shown to facilitate the development of mental illnesses such as depression and anxiety.[19] Therefore, it would have been essential that the patient in discussion, along with family members, be offered psychosocial therapy and counselling.

Leprosy is no longer a major public health concern. However, its prevalence in Zambia cannot be disqualified. As more infectious diseases arose (TB and HIV), the third world has been receiving donor funds to research more emergent TB and HIV cases. Less attention has been paid to this debilitating disease. It is also challenging to identify Zambia as a highly endemic area for leprosy simply because surveillance is difficult without funding.[6, 20] The proportions of leprosy patients recorded at medical facilities are nowhere near the actual number of people suffering from leprosy or its complications, and therefore, no accurate figures can be published. As of June 2020, anecdotal data revealed 224 cases of leprosy were reported to the National TB and Leprosy Control Program from health facilities. In 2024, Zambia's Health information systems recorded 365 new cases, well above the elimination threshold of less than 10 cases yearly. This does not include possible contacts and those who have not sought medical attention.[3]

Stigma, low index of suspicion, and late presentation hinder elimination. Therefore, improved awareness in both the community and among healthcare workers to highlight that permanent disability due to leprosy can occur if not managed properly. Further, a holistic approach to leprosy management must be implemented.

LESSONS LEARNT

Community and healthcare worker awareness of leprosy enhances the chances of early diagnosis and adequate treatment. Strengthening follow-up and contact tracing programs for leprosy patients would also be beneficial on our road to achieving the Global Leprosy Elimination Strategy 2021-2030 to curb the development of complications.[21,22]

CONCLUSION

Leprosy in Zambia is an indolent but growing challenge faced in the public health sector. In an age when this neglected tropical disease can be cured, permanent disability as a result of leprosy should be unheard of. Stigma associated are still major issues that deter elimination progress. Awareness, early diagnosis and efficient surveillance is required to curb and therefore eliminate leprosy.

CONFLICT OF INTEREST

There is no conflict of interest.

ETHICAL CONSIDERATION

Informed consent was obtained to publish this case report and use of images by the patient's next of kin. This manuscript has no data-set

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