Human immunodeficiency virus in a tribal family: Issues and challenges

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Abstract
A 35-year-old married tribal female presented with well-defined crusted ulcers with purulent exudates on the right side of the face involving both lips and right forearm since last 6 months. On investigation, she turned out to be human immunodeficiency virus (HIV) positive with CD4 count of 7 cell/mm$^3$ and also having probable abdominal tuberculosis (TB) as suggested by ultrasonography abdomen. Her husband and son were also found to be HIV positive. Her skin lesions were suggestive of cutaneous TB. She was started on antituberculosis treatment (ATT), antiretroviral treatment (ART), and injectable antibiotics. As her skin lesions failed to respond after 1 month, herpes simplex virus infection was suspected as a cause of ulceration, and she was given oral acyclovir therapy to which she responded well and later she was discharged. She stopped both ART and ATT and came with recurrence of skin lesions after 1½ month. Her husband left her for another woman. The purpose of reporting this case is to discuss the issues related to HIV infection affecting all the members of a tribal family.

Key words: Cutaneous tuberculosis, herpes, human immunodeficiency virus, tribal

INTRODUCTION
Migrating tribal laborers acquiring human immunodeficiency virus (HIV) by indulging in high risk sexual behavior and bringing it back to home is a reality. Such cases are diagnosed late with lower CD4 counts and hence present with atypical manifestations. Diagnosing such cases for HIV and related opportunistic infections, putting them on antiretroviral treatment (ART) and ensuring compliance poses many challenges.

CASE REPORT
A 35-year-old illiterate married woman, working as a laborer and residing in a tribal area presented with ulcerative skin lesions over both lips extending to the right side of the face and also over right forearm since last 6 months. The lesions initially appeared on the face and then on right forearm. Lesions were tender with purulent discharge. She was also complaining of weight loss and reduced appetite since 12 months. She did not have any other major complaints.

She had received treatment from a private clinic on and off for many months, but the symptoms did not improve. She had no history of tuberculosis (TB), diabetes, jaundice or any major operation or blood transfusions. Patient was married and co-habiting since last 15 years. Her menstrual history was normal and regular. She had 3 full term normal vaginal deliveries at home without any complications. Her first child died at the age of 15 months due to TB while second child died at the age of 5 years due to pyrexia of unknown origin. Third child is a 2½-year-old boy who was healthy without signs or symptoms of any major illness.
On general examination, the patient was poorly built and nourished and weighed 32 kg. Cutaneous examination revealed one well-defined ulcer with crusted and purulent exudates present on the right side of the face involving both lips [Figure 1], and mouth opening was restricted. A single well-defined tender crusted ulcer with purulent discharge was present on right forearm involving elbow [Figure 2]. Diffuse noncicatricial alopecia was present over the scalp. Oral mucosa showed presence of whitish granular exudate suggestive of oral candidiasis. Cervical and axillary lymph nodes were enlarged and non tender. No systemic abnormality was noted.

Complete blood count showed hemoglobin of 4.2 g/dl, total white cell count of 1100/mm$^3$, platelet count of 170,000/mm$^3$ and erythrocyte sedimentation rate (ESR) of 146 mm at 1 h. Renal and liver function tests were within the normal limits. Patient was reactive for HIV 1 and 2 by enzyme linked immunosorbent assay with a baseline CD4 count of 7 cells/mm$^3$. Serum venereal disease research laboratory and hepatitis B surface antigen were nonreactive. Chest X-ray was normal, and sputum acid fast bacilli (AFB) was negative for TB. Ultrasonography abdomen suggested few enlarged subcentrimetric and mesenteric lymphnodes in the periumbilical region and few lymphnodes in the region of the head of the pancreas, which led to the suspicion of abdominal TB. Culture and sensitivity and AFB stain from the ulcer were negative. Skin biopsy was inconclusive showing hyperplastic squamous epithelium with dermal nonspecific inflammatory infiltrates.

Based on her history, examination and investigations, patient was diagnosed as having acquired immunodeficiency syndrome (AIDS) with probable abdominal TB with severe anemia and skin lesions were considered as cutaneous TB as patient had a probable active focus of TB in the abdomen with raised ESR.

Patient's husband was a 42-year-old laborer who used to go to different towns for earning his daily wages. He had no signs and symptoms of any major illness. Her husband was reactive for HIV with baseline CD4 count of 107 cells/mm$^3$.

Patient had a 2½-year-old male child who was healthy without signs or symptoms of any major illness. However, he was also found to be reactive for HIV with baseline CD4 count of 226 cells/mm$^3$. Thus, all three family members were found to be HIV reactive [Figure 3].

The patient was admitted and administered intravenous cefotaxime 1 g every 12 hourly for 10 days to control superadded bacterial infection. Capsule fluconazole was given once daily for 2 weeks for oral candidiasis. Category I antituberculosis treatment (ATT) which included isoniazid (300 mg), rifampicin (450 mg), pyrazinamide (1500 mg), and ethambutol (1200 mg) was started for abdominal TB along with tablet cotrimoxazole (480 mg) once a day. Since the patient was severely anemic, 2 units packed cell volume was given along with injection iron sucrose intravenous for 10 days. Daily ulcer dressing with 1% silver sulfadiazine cream was done. Twenty days later ART was initiated (tenofovir [300 mg]/lamivudine [300 mg]/efavirenz [600 mg]). After 4 weeks of admission, as there was no response of the ulcers on lips and right arm to either of antibiotics or ATT, herpes infection was suspected as a cause of ulceration. Tzank smear was done, which showed multinucleated giant cells and IgM and IgG anti-herpes simplex virus (HSV) I/II were found to
be positive. Tablet acyclovir 400 mg 3 times a day was started. Signs of healing were observed within 1 week of initiation of acyclovir and same treatment was continued for 25 days until the lesions healed completely [Figures 4 and 5].

The patient’s husband was given ART which included zidovudine (300 mg/day), lamivudine (150 mg/day), and nevirapine (200 mg/day). Her son was not started on ART.

The patient came for follow-up after 1½ months with recurrence of herpetic lesions at the same sites, that is, both lips [Figure 6] and right forearm [Figure 7]. Patient had stopped taking both ART and ATT for the past 1 month. The patient’s husband had left home and ran away with another woman. She had brought her son who was apparently healthy. The patient was depressed and had reduced food intake.

Patient was again admitted and treated with oral acyclovir (400 mg 3 times a day) for 20 days; daily hydrogen peroxide cleansing of the ulcers followed by 1% silver sulfadiazine cream application and the capsule fluconazole (150 mg) twice/week for Tinea faciei and oral candidiasis. She showed marked improvement within 20 days. She was again started on ART (tenofovir/lamivudine/efavirenz) and ATT category II which included isoniazid (300 mg), rifampicin (450 mg), pyrazinamide (1500 mg), ethambutol (1200 mg), and streptomycin (750 mg). Then she was discharged. She did not come for follow-up and lost to follow-up.

**ISSUES AND CHALLENGES**

**Epidemiological issues**

Permanent and seasonal migration patterns as well as having multiple sex partners are a normal practice within tribal communities. In this case, the patient's husband might have been a source of infection in the family because he was a migrant laborer and might have indulged in high risk sexual behavior.

Many people in tribal areas might be living with undiagnosed HIV infection due to lack of awareness and nonavailability of screening facilities. These
patients usually present at a later stage with atypical presentations like HSV infection manifesting as painful, persistent ulcers as in our case. These people usually belong to lower socioeconomic class and their education and nutritional status are far from adequate. As our case was coming from the tribal area, she presented at a very late stage with severe ulceration, severe anemia and very low CD4 count (7 cells/mm$^3$). There is a possibility of existence of many such hidden pockets of undiagnosed HIV infection responsible for perpetuating the epidemic. This needs to be explored.

Homelessness, poverty, illiteracy and ignorance are the factors associated with delayed entry into health care that lead to late diagnosis of disease. Tribal women do not undergo antenatal checkups during pregnancy as most of them have home deliveries thus having potential of vertical transmission. If we could detect the infection earlier, transmission to offspring could be prevented by proper education and provision of “prevention of parent to child transmission.” Early recognition of the disease process will help in decreasing viral load and transmission to other people.

The issue of prevailing widespread discrimination toward HIV positive cases especially women is a harsh reality in our country. Gender issues are likely to play a significant role amongst tribal population. Here, the index case was left alone with her child by the husband. It will be difficult for her to make a livelihood and access the available health care facilities. The husband who has started living with another woman, despite being HIV positive, is unlikely to disclose his HIV status to other women, thus spreading the infection.

A major problem in treating HIV positive patients is compliance. Successful virological, immunological and clinical results of ART can be achieved only if compliance is more than 90-95%. Tribal cases are not likely to go to ART/linked ART centers regularly. In our case, it is not certain whether she will come for follow-up and will take ART regularly for herself as well as her child. She needs to be motivated and offered logistic and financial support so that she can come for regular follow-up.

Psychosocial factors play an important role in ensuring compliance. In the present case, being deserted by her husband, the woman suffered from depression. Most cases, more so in tribal setup require psychosocial support in terms of self-help group and social support services that can improve compliance.$^{[1]}$

As reported by Naik et al. rural Indian tribal communities are an emerging high-risk group for HIV/AIDS because of ignorance, high-risk practices, migration, and inadequate health practices.$^{[2]}$

**Clinical issues**

Herpes simplex virus infection is a common cause of ulcerative mucocutaneous disease in both immunocompetent and immunocompromised individuals.$^{[3]}$ Atypical and more serious clinical manifestations of HSV infection occur in the setting of HIV-induced immunosuppression.$^{[4]}$ With the increase in immunosuppression in an HIV infected person, HSV lesion tends to become subacute or chronic, indolent and atypical responding less promptly to oral antivirals.$^{[5]}$

Herpes simplex virus is likely to be underdiagnosed clinically especially in the presence of HIV infection. Diagnosis of herpes requires high index of suspicion, particularly in atypical presentation and subclinical reactivation.$^{[4]}$ Here, in this case initially TB cutis was suspected as a cause of ulceration as the patient was having abdominal TB and raised ESR. Because of the failure to respond after 4 weeks of ATT category I and antibiotics, herpes infection was suspected as a cause of ulceration.

Bagdades et al. study suggested that the frequency of cutaneous ulcerations caused by HSV rises sharply as CD4 cell counts fall below 50 cells/mm$^3$.$^{[6]}$ In our case, low CD4 count (7 cells/cumm) predisposed the patient to severe cutaneous ulceration and other opportunistic infections like Tinea faciei and oral candidiasis.

Patients coming from remote areas are likely to present with atypical and severe ulceration.
Future challenge
The woman’s compliance to treatment further poses a formidable challenge, since she is left alone by her husband. She is expected to collect and take treatment for herself and her child, the implementation of which, is questionable. Such issues need to be addressed on one to one basis.

CONCLUSION
It is likely that many such families with multiple seropositive members exist in the tribal areas, and if not diagnosed early they are likely to perpetuate the ongoing HIV epidemic. Periodic surveillance and targeted interventions in remote areas will go a long way to achieving the goal of “Getting to zero: Zero new HIV infections, zero discrimination, and zero AIDS related deaths”.

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Source of Support: Nil. Conflict of Interest: None declared.