

Case Report

Syphilitic hepatitis in an HIV co-infected patient: A case report

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Abstract

Syphilitic hepatitis is a rare complication of secondary syphilis, which may be misdiagnosed or overlooked during management.

A 33-year-old male presented with a penile ulcer and rash over the penile shaft and scrotum for a 10-day duration. He had multiple sexual exposures with male partners. He was not icteric, but had macular rashes over his palms and soles with multiple macular scaly skin lesions over the penile shaft and scrotal skin. The non-tender syphilitic ulcer was suggestive of a healing chancre. Bilateral painless inguinal lymphadenopathy was noted. There was no hepatic tenderness. His VDRL test titre was R64, and the TPPA test was positive. The HIV confirmatory test was positive too. Liver enzymes and total bilirubin were elevated with negative Hepatitis B Surface Antigen and Hepatitis C Antibody.

Following treatment of syphilis, hepatitis resolved, indicating that, while evaluating a young male with elevated liver enzymes, early syphilis needs to be considered.

Keywords: syphilis, HIV, elevated liver enzymes, sexually transmitted infections

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Introduction

Treponema pallidum subspecies *pallidum* is a spirochete that causes syphilis. It can involve almost any organ, particularly the gastrointestinal tract, where it can lead to hepatitis, gastritis, colitis, and proctitis (1). Hepatitis is a known manifestation of secondary syphilis, which involves the dissemination to the liver.

In Sri Lanka, the number of syphilis cases is rising. The total number of reported cases increased

from 2021 to 2023, from 666 to 770 and to 1383 cases, respectively (2). Similarly, the statistics revealed escalating trends in infectious syphilis cases among males between 15-49 years. In the United States, the incidence of both primary and secondary syphilis cases has been on the rise since 2000, particularly among men who have sex with men (3,4).

Therefore, clinicians should consider syphilis as a possible cause of elevated liver enzymes or hepatitis, particularly among young males. Hepatitis possibly caused by syphilis is described in this case report.

Case presentation

A 33-year-old unmarried male presented to the sexual health clinic with the complaint of a small painless penile ulcer along with small non-itchy skin lesions over the scrotal and penile area for 10 days duration. He did not have fever, malaise, loss of weight, nausea, vomiting, or abdominal pain. He denied any change in urine color or bowel habits. On further inquiry, he revealed that he had unprotected sexual encounters with multiple casual male partners over the last 5-year period. He was a smoker and used inhalational illicit drugs, but not intravenous drugs. He was not an alcoholic, and not on any hepatotoxic or herbal medications.

He was not icteric but had a macular rash over both palms and soles (Figure 1, 2). He did not have hepatomegaly. Bilateral inguinal lymph nodes were enlarged, firm, and non-tender. He had macular scaly skin lesions over the penile shaft and the scrotum with a small non-tender indurated ulcer on the ventral aspect of his glans penis (Figure 3). His VDRL titre was R64, and the TPPA (Serodia®) test was positive. The HIV confirmatory test was positive too. Liver enzymes were elevated with aspartate transaminase (AST) 226 U/L, alanine aminotransferase (ALT) 407 U/L, alkaline phosphatase (ALP) 1616 U/L, and total bilirubin 22 micromole/l. His renal function tests were normal, and his Hepatitis B surface antigen and Hepatitis C antibody tests were negative.

Figure 1. Macular rashes over both palms



Figure 2. Macular rash over both soles



Figure 3. macular scaly skin lesions over the penile shaft and the scrotum



He was diagnosed as having secondary syphilis and treated with a single dose of intramuscular benzathine penicillin 2.4 million units. His liver enzymes and bilirubin level became normal two weeks after benzathine penicillin treatment (Table 1)

Table 1. Values of liver enzymes and total bilirubin before and after benzathine penicillin treatment

Variable	On presentation	After 1 week of treatment	After 2 weeks of treatment	Ref. ranges
AST	226 U/L	48 U/L	14 U/L	(0 – 50 U/L)
ALT	407 U/L	102 U/L	12 U/L	(0 – 50 U/L)
ALP	1616 U/L	463 U/L	165 U/L	(0 – 150 U/L)
Total bilirubin	22 umol/L	7 umol/L	0.3 umol/L	(0 – 21 umol/L)

After the treatment, the lesions healed. Subsequently, the anti-retroviral treatment was commenced.

Discussion

The number of syphilis cases reported in Sri Lanka has been increasing. The rise is notable, particularly among males aged between 15 to 49 years (2).

Syphilitic hepatitis is a known complication of secondary syphilis, which is most often misdiagnosed or overlooked. In a retrospective study conducted in Japan among 112 patients with early syphilis, a significant proportion (39%) had liver enzyme abnormalities (5).

A systematic literature review of syphilitic hepatitis revealed that many of them were MSM, and most were diagnosed during the early stage of syphilis with fever, malaise, weight loss, hepatomegaly, and lymphadenopathies. Considering the liver enzyme changes, there was disproportionately high ALP noted, followed by a slight increase in ALT and AST. All these biochemical changes were reverted to normal after the penicillin treatment (6).

This patient presented to the sexual health clinic with a penile ulcer, skin rashes, and bilateral inguinal lymphadenopathy. However, there were no clinical features of hepatitis. He was diagnosed as having secondary syphilis and HIV infection. Investigations revealed elevated AST and ALT with a disproportionate elevation in ALP levels, along with high total bilirubin. Two weeks following treatment with benzathine penicillin, the liver enzymes and bilirubin levels returned to normal.

There are no definitive criteria for the diagnosis of syphilitic hepatitis. In a series of case reports done in the United States among 7 cases of syphilitic hepatitis in HIV- positive individuals, Mullick et al. proposed that a reasonable diagnosis can be established with abnormal liver enzyme levels of cholestatic pattern, serological evidence of syphilis, exclusion of other causes of liver injury/diseases and liver enzymes returning to normal after appropriate antimicrobial treatment for syphilis (7). Our patient fulfilled all the above-mentioned criteria.

Though the pathophysiology of syphilitic hepatitis is hardly studied, liver biopsies performed in some studies showed non-specific features of portal and lobular inflammatory cell infiltrates with hepatocellular necrosis and cholestasis. However, it was difficult to demonstrate the syphilitic organism in the liver. Therefore, liver biopsy is not considered essential for the diagnosis of hepatitis caused by syphilis (8).

Conclusion

Syphilis infection is rising in Sri Lanka, especially among young males. As hepatitis is a known complication of secondary syphilis, it should be considered as a possible cause for hepatitis, particularly among young males. In suspicious cases, obtaining a sexual history may be beneficial. Early diagnosis and adequate treatment would lead to complete recovery.

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