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Case Report

Unique case of drug induced liver injury

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ABSTRACT

Drug-induced liver injury are common in Asian Countries [1] because of less awareness about the drugs causing liver injury when consumed in excess quantity or when unindicated. India is the most populous country right now and its population is not aware about the side effects caused by commonly used Ayurvedic drugs. [2]

1. Introduction

Various drugs cause liver injury by many different mechanisms like Ayurvedic,[3] Homeopathic,[4] and Allopathic,[5] but since most modern medicine is evidence and research-based, there is enough knowledge of the mechanism of action, effects, side effects, and dosing of the drugs (which is lacking in the conventional medicine), which reduces the disastrous effects to major extent which is not the case with other conventional and alternative medicines (CAM).[6]

2. Case History

This is a case of a 46-year-old lady, a housewife by occupation, with a known case of Type II diabetes mellitus and hypothyroidism came with complaints of fever, yellowish discoloration of eyes, pain in the epigastric region, nausea and decreased appetite for 3 days. The patient was admitted, investigated, and was started on empirical third generation Cephalosporin with other symptomatic management, keeping acute cholecystitis the working diagnosis along with symptomatic treatment including IV fluids, antiemetics and antipyretics. Blood investigations revealed liver parenchymal injury with bile duct obstruction and fibrosis. Ultrasound of the abdomen was done which revealed altered liver texture with mild hepatomegaly suggesting liver injury. Since the cause of liver injury could not be ascertained according to the history, clinical examination, and investigation, a liver biopsy was planned for this patient to get the microscopic picture of the liver and to ascertain the cause of the liver injury. Serial blood investigations were done, which revealed a decreasing trend in various liver enzymes (an indicator of healing liver). On repeated probing of any history of addiction, consumption of CAM, or any toxic substance, to our surprise, the patient was consuming some ayurvedic medication for the treatment of her Diabetes which was later found to be Giloy (*Tinospora cordifolia*),[7] and since the patient was under observation being admitted in the hospital and not getting exposed to Giloy (*Tinospora cordifolia*), the liver started healing thereby causing the liver enzymes to reduce. During the entire course of admission at the hospital, the patient being Diabetic who was on oral hypoglycemic agent (OHA) before admission didn't require any drugs

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Table 1: Serial blood investigations

	8/11/2022	11/11/2022	12/11/2022	14/11/2022	15/11/2022	18/11/2022
Hemoglobin	12.6 gm/dl	11.6 gm/dl	11.0 gm/dl	9.9 gm/dl		
WBC	8000 /μm^3	9500 /μm^3	9700 /μm^3			
Albumin	3.1 gm%	2.7 gm%		1.9 gm%		3.0 gm%
Globulin	4.1 gm%	3.7 gm%		3.4 gm%		3.8 gm%
SGPT	511 mU/ml	553 mU/ml	510 mU/ml	470 mU/ml	359 mU/ml	210 mU/ml
SGOT	437 mU/ml	399 mU/ml	328 mU/ml	35 mU/ml	25 mU/ml	10 mU/ml
Direct bilirubin	2.2 mg%	4.5 mg%	6.3 mg%	7.4 mg%	8.8 mg%	6.3 mg%
Indirect bilirubin	0.3 mg%	0.5 mg%	0.7 mg%	1.7 mg%	1.4 mg%	1.3 mg%
PT-INR	1.2	1.2	1.16	1.13	1.02	
LDH	525 mU/ml	392 mU/ml		491 mU/ml		376 mU/ml
GGTP	382 mU/ml	357 mU/ml	286 mU/ml	228 mU/ml		217 mU/ml
ALP	358 mU/ml	399 mU/ml	373 mU/ml	294 mU/ml		271 mU/ml

or insulin to control the blood sugar (liver disease results in hypoglycemia). The patient improved gradually over 2 week-long stays at the hospital with her blood glucose level rising and requiring insulin, decreasing trend of liver enzymes, and alleviation of her symptoms, she was discharged.

3. Case Discussion

Giloy (*Tinospora cordifolia*), is a herbal plant with many known benefits to the human body[8] and used extensively in India and many developing nations by Ayurvedic practitioners, but it acts as a double-edged sword if not used cautiously and under supervision. Giloy (*Tinospora cordifolia*) is known to cause Hepatitis.[9]

In this patient, we did magnetic resonance cholangiopancreatography (MRCP) suspecting acute cholecystitis since the patient fit the category of 4F [Female, Fertile, Fatty, Forties (age)].[10] MRCP revealed hepatomegaly and attenuation of hepatic ducts with terminal narrowing of the common bile duct (CBD), ruling out the possibility of acute cholecystitis. (Figures 1, 2, 3 and 4)

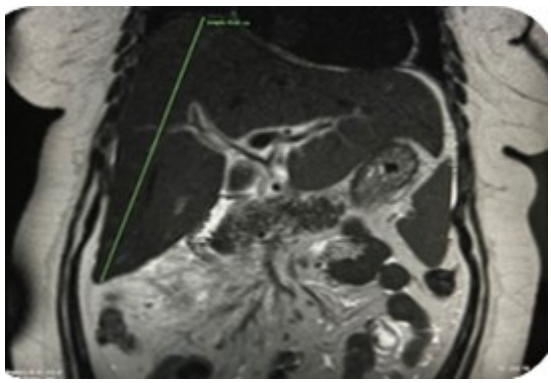

Figure 1: Hepatomegaly measuring 20.8 cm

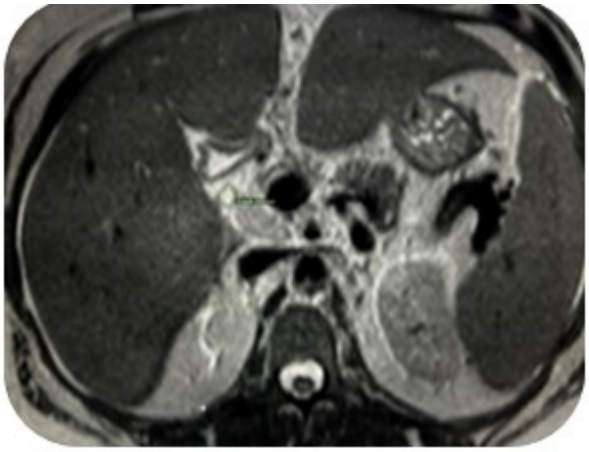

Figure 2: Common hepatic duct measuring 6 mm

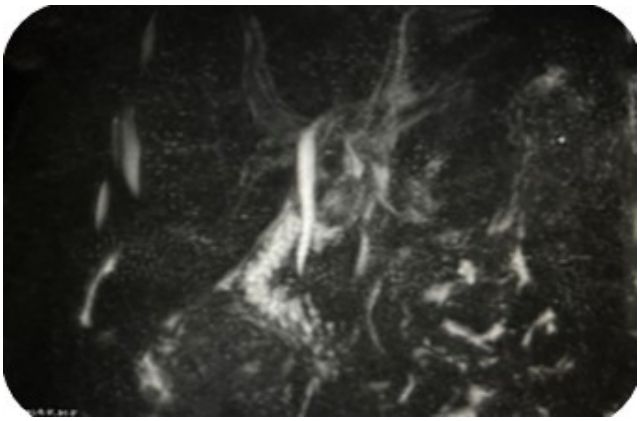

Figure 3: Smooth tapering of common bile duct

Suspecting viral hepatitis, we did serum tests for viral markers, all the viral markers [HBV (Hepatitis B virus), HAV (Hepatitis A virus), HEV (Hepatitis

E virus), HCV (Hepatitis C virus), and HIV (Human immunodeficiency virus] all were negative. Hence, we suspected autoimmune (AI) hepatitis and did serum markers for AI hepatitis [Immunoglobulins (Ig), ANA (weak positive), ANA blot (negative), AMA (positive), Anti-LKM1 antibody (positive)]. The results for all serum markers were inconclusive hence the decision for a liver biopsy was made to rule out drug-induced liver injury as there was a history of consumption of Giloy (*Tinospora cordifolia*).

Liver biopsy was done and on staining with Masson Trichome stain there was periportal fibrosis. The tissue was stained negative for hemochromatosis with a Prussian blue stain. On the H&E (hematoxylin and eosin) stain, there was portal inflammation with inflammatory cells predominantly lymphocytes with bile duct destruction and cholestasis.(Figures 5, 6, 7, 8, 9 and 10)

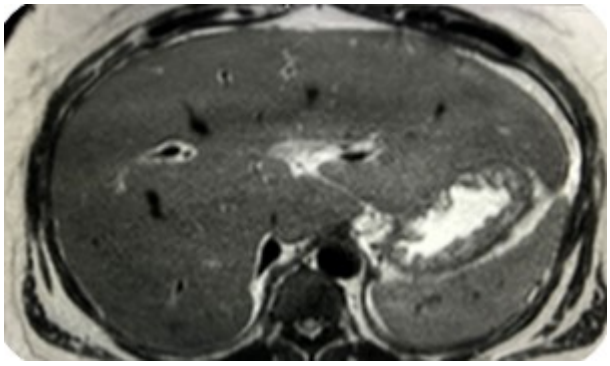

Figure 4: Paucity of the liver parenchyma

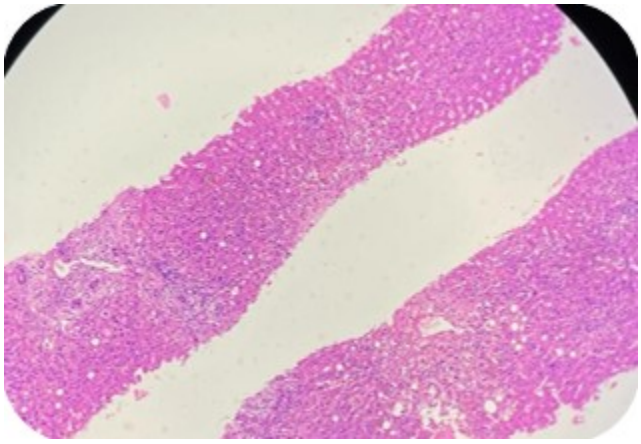

Figure 5: H & E stain showing inflammatory cells scattered throughout liver

4. Conclusion

Drug induced liver injury are commonly encountered in less developed nations and where the population are not

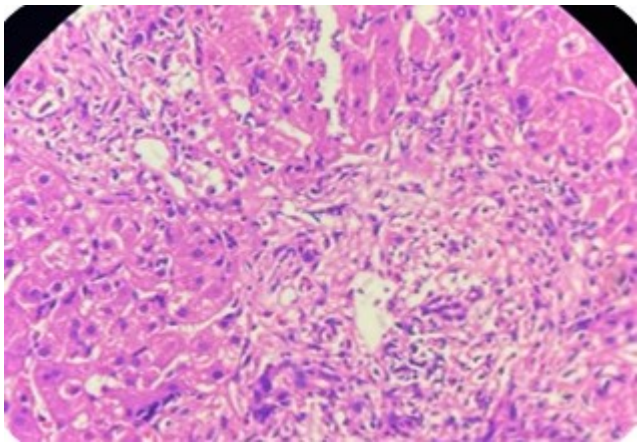

Figure 6: H & E stain with abundant periportal lymphocytes

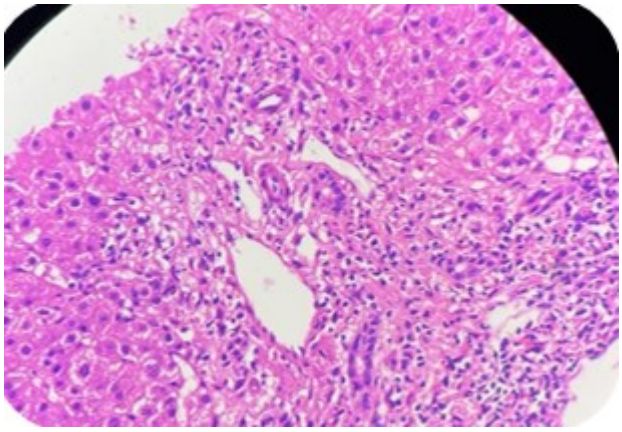

Figure 7: H & E showing inflammatory cells

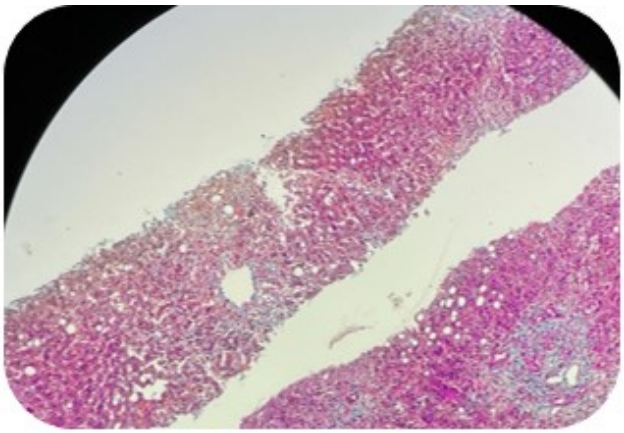

Figure 8: Prussian blue stain showing areas of fibrosis

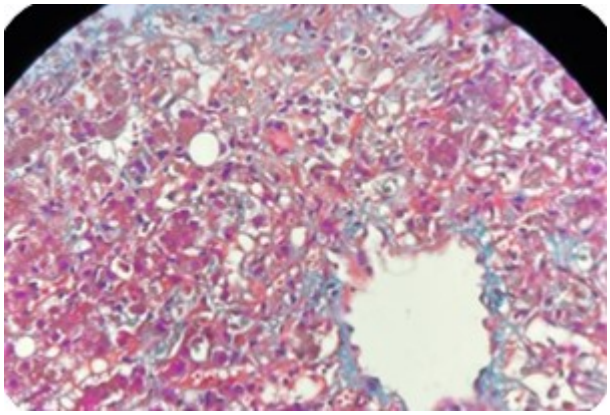

Figure 9: Masson trichome stain showing fibrosis

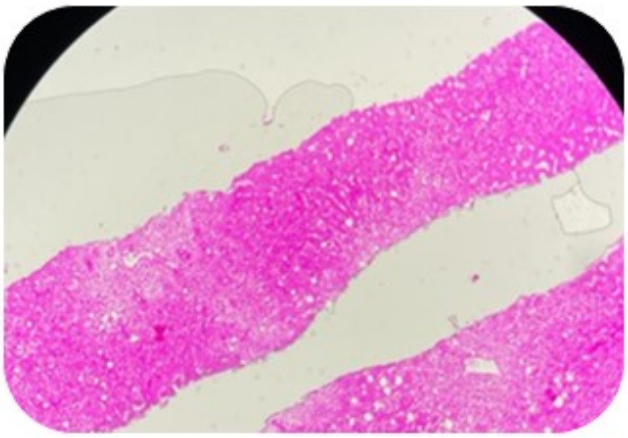

Figure 10: Negative Prussian blue stain

aware about the dangerous side effects that can lead to hepatitis and in severe cases liver failure.[11] Now there are enough studies and data suggesting harmful effects of herbal medicines when consumed without supervision can lead to health and financial burden for the patient.

5. Conflicts of Interest

None.

6. Source of Funding

None.

7. Human Ethics

Written informed consent was obtained from the next of their kin for publication of case report.

Acknowledgments

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