

Spectrum of Mucocutaneous Manifestations among Patients with Various Liver Disorders

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ABSTRACT

Introduction: Skin is the first barrier against any external agent and a reflection of any deviation in the internal milieu. Any systemic disorder or organ dysfunction can leave its imprints on the skin and so also the liver certainly has cutaneous manifestations in case of any disorder affecting it. Study objective was to investigate the spectrum of cutaneous manifestations of various liver disorders and liver disease specific association.

Material and methods: A total of 220 patients with primary liver disorders were taken up for the study after proper ethical clearance. A detailed clinical history was taken from the patients regarding liver disorder and cutaneous symptoms. A thorough clinical examination was done and all specific and nonspecific cutaneous manifestations were recorded.

Results: Out of 220 patients, 135(61.3%) were males and 85(38.6%) were females with a male preponderance. Among the various liver disorders, most commonly seen was alcoholic liver disease seen in 84(38%) patients, nonalcoholic fatty liver disease (NAFLD) and nonalcoholic steatohepatitis(NASH) in 51(23.2%) patients, cirrhosis in 35(16%) patients. The most common cutaneous manifestation seen was icterus in 190(86.3%) patients, pruritus in 178(80.9%) patients, xerosis in 112(51%) patients.

Conclusion: The knowledge of the cutaneous manifestations in liver disorders can be of great help as many liver disorders can easily be detected at their incipient stage. This study was done to assess the spectrum of cutaneous manifestations in liver disorders and a significant observation made was liver disease wise specific evaluation of cutaneous manifestations thus providing better insight into the type of liver diseases.

Keywords: Skin, Liver Disorders, Mucocutaneous Manifestation

this study to assess various cutaneous manifestation across the spectrum of various liver diseases and look for any prognostic relation with the liver function tests.

MATERIAL AND METHODS

A total of 220 patients with primary liver disorders were taken up for the study after proper ethical clearance. These patients were taken up after applying inclusion and exclusion criteria. Written informed consent was taken up from each of them. Inclusion criteria included all patients with primary liver disorders and those giving consent. The exclusion criteria were: non consenting patients, primary skin diseases leading to liver pathology, various drugs used for the treatment of skin diseases leading to liver disorders, liver transplant patients, and improper diagnosis of liver diseases. A proper diagnosis of liver disorders was assessed from the patients' records and noted down. A detailed clinical history was taken from the patients regarding onset, duration of liver pathology, drugs taken for the treatment of liver pathology. Regarding cutaneous manifestations, history included onset, duration, evolution and temporal association with respect to liver diseases, various signs and symptoms, their severity, lastly history of alcohol consumption with quantity and duration of consumption. A thorough clinical examination was done and all specific and nonspecific cutaneous manifestations were recorded. Biopsies were done wherever necessary. Liver function tests were done in all patients. In patients with pruritus, assessment of severity was done using visual analog scale (VAS) where the patient was asked to rate his severity on a scale of 0-10.

RESULTS

Out of 220 patients, 135(61.3%) were males and 85(38.6%) were females with a male preponderance. There were 32(14.5%) patients below the age of 14 years. The youngest patient was 5 years old and the oldest 83 years. The duration of liver disorders ranged from 2 months to 3.5 years.

INTRODUCTION

Skin is the largest organ of our body and is the gateway to inside. It acts as the window and reflects the overall wellbeing. Any systemic disorder can leave its imprints on the skin and many disorders can easily be detected through detailed and thorough cutaneous examination.¹ The liver is the second largest organ of the body and any discrepancies and deviation from the normal can leave its footprints on the skin. Thus knowledge of the cutaneous manifestations in liver disorders can be of great help as many liver disorders can easily be detected at their incipient stage thus helping in averting major effects.¹ There has been a dearth of studies studying the cutaneous manifestations of liver disease more so in the Indian context. Thus it is imperative to carry out more studies to further enlighten this area. Hence we conducted

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How to cite this article: Sameer Abrol, Rohini Sharma. Spectrum of mucocutaneous manifestations among patients with various liver disorders. International Journal of Contemporary Medical Research 2019;6(5):E7-E10.

DOI: <http://dx.doi.org/10.21276/ijcmr.2019.6.5.44>

Type of liver diseases	No. of patients
Alcoholoc liver disease	84
Non alcoholic steatohepatitis	51
Cirrhosis	35
Viral hepatitis	25
Auto immune hepatitis	12
Malignancies/mass lesions	10
Coeliac disease	2
Extra hepatic portal vein obstruction(ehpvo)	1

Table-1: No. of patients with various liver disorders

Cutaneous manifestations	No. of patients
Icterus	190
Pruritis	178
Xerosis	112
Dupuytren's contracture	54
Paper money skin	21
Palmar erythema	25
Loss of hair	57
Xanthelasma	23
Acanthosis nigricans	29
Spider angiomas	45
Caput medusae	31
Clubbing of nails	38
Muehrke's bands	22
Terry's nails	14
Beau's lines	49
Poly arteritis nodosa	12
Leukocytoclastic vasculitis	5
Lichen planus	9
Porphyria cutanea tarda	5
Gianotti crosti syndrome	4
Icthyosis	10
Gynacomastia	26

Table-2: Cutaneous manifestations among patients with liver diseases

Among the various liver disorders, most commonly seen was alcoholic liver disease seen in 84(38%) patients, nonalcoholic fatty liver disease (NAFLD) and nonalcoholic steatohepatitis(NASH) in 51 (23.2%) patients, cirrhosis in 35 (16%) patients. The distribution is given in table 1.

Children below the age of 14 years were most commonly affected by viral hepatitis in 19 patients followed by auto immune hepatitis in 8 patients, coeliac disease in 2.

Various cutaneous manifestations were seen. The most common cutaneous manifestation seen was icterus in 190(86.3%) patients, pruritis in 178(80.9%) patients, and xerosis in 112(50.9%) patients. All the cutaneous manifestations are mentioned in table 2.

Pruritis was commonly associated with alcoholic liver disease, NASH, cirrhosis and also in malignancies/mass lesions. The mean VAS score was 15.7 ± 5.2 .

Certain manifestations were more commonly associated with a particular liver disease. In patients of alcoholic liver disease, the most common manifestation was icterus in 81 (96.4%) patients, pruritis in 75(89.2%), xerosis in 44 (52.3%), dupuytren's contracture in 40 (47.8%). Other manifestations

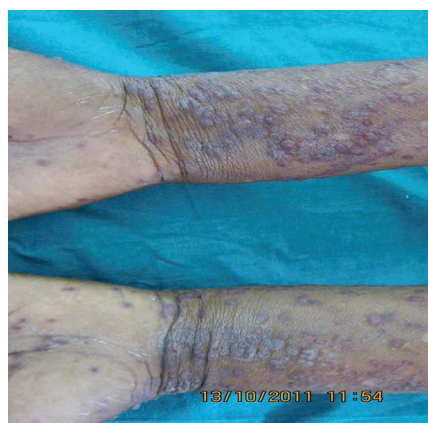


Figure-1:

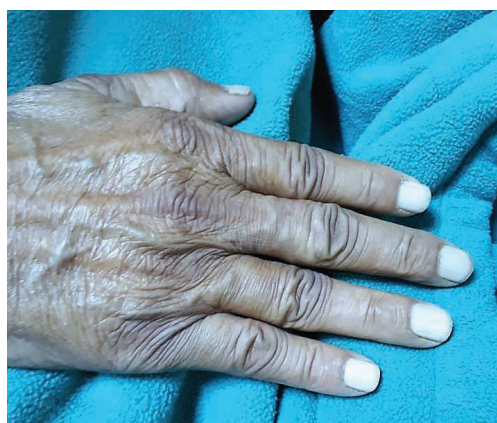


Figure-2:

being palmar erythema 17(20.2%), loss of hair 41(48.8%), spider angioma 23 (27.3%), clubbing of nails 16 (19%), beau's lines 21 (25%), muehrke's bands 12 (14.2%), terry's nails 6 (7%, figure 1), gynacomastia 14 (16.6%).

Among patients of NAFLD and NASH, icterus was seen in 39(76.4%), pruritis in 47(92.1%) patients, xerosis in 40 (78.4%), xanthelesmas in 18(35.2%), acanthosis nigricans in 18(35.2%) patients, spider angiomas in 10(19.6%) and muehrke's band in 6(11.7%) patients, beau's lines in 11(21.5%) patients. Features of polycystic ovarian disease like hirsutism, acne, seborrhea was seen in 3 females who had NASH with PCOD.

Among patients of cirrhosis, icterus was seen in all 35(100%), pruritis in 31(88.5%), xerosis in 28(54.9%) patients, caput medusa in 31(88.5%), clubbing of nails in 18(51.4%), beau's lines in 12(17%), terry's nails in 8(22.8%), spider angiomas in 12(17%) patients, paper money skin in 21(60%) patients. Features like dupuytren's contracture 14(40%), palmar erythema 8(22.8%), loss of hair 16(45.7%), gynacomastia 12(34.3%) were more commonly associated with cirrhosis due to underlying alcoholic liver disease. Features like xanthelesmas 5(14.2%), acanthosis nigricans 11 (31.4%) were more common in cirrhosis due to nonalcoholic fatty liver disease.

In 25 patients of viral hepatitis, icterus was seen in 19(76%) patients, pruritis was seen in 15 (60%) patients and beau's lines in 2 (8%) patients. Other manifestations exclusively seen in patients of viral hepatitis were: polyarteritis nodosa

(PAN) in 12 (48%) patients, porphyria cutanea tarda (PCT) in 5 (20%) patients, lichen planus in 9 (36%), vasculitis in 3 (12%, figure 2) and Gianotti-Crosti syndrome in 4 (16%) patients.

In patients with malignancies and mass lesions, icterus was seen in all 11 patients, pruritis was seen in 10 (91%) patients and it was severe, ichthyosis in 10 (91%), Beau's lines in 3 (27.2%), Muehrcke's band in 4 (36.3%).

In patients of autoimmune hepatitis, icterus was seen in 5 (41.6%), pruritis in 3 (25%), clubbing in 4 (33.3%) patients. In 2 patients of coeliac disease, vasculitis was seen in both and pruritis in 1 one patients.

DISCUSSION

Liver disorders can present with a protean of cutaneous manifestations. Cutaneous manifestations resulting from disorders of the liver have been reported to be the most common extra hepatic manifestation of liver diseases in various studies.^{2,3} In our study, males outnumbered the females which was similar to another study. Also children below the age of 14 years formed a sizeable portion similar to the above study.⁴ Among the various liver disorders, alcoholic liver diseases was the most common seen in 38% in our study whereas other studies reported malignancies and cirrhosis to be the most common.^{4,5} In our study nonalcoholic steatohepatitis was the second most common followed by cirrhosis. The rising trend of NAFLD and NASH can be attributed to the altered life style and obesity epidemic in today's world.

Among the various manifestations, the most common symptom was icterus followed by pruritis and xerosis. This was well in accordance with various other studies which showed icterus to be the most common and pruritis also commonly encountered. Another study reported dilated abdominal veins to be the most common followed by icterus, ichthyosis and hyperpigmentation.^{5,6,7}

On comparison of various liver disorders, among patients of alcoholic liver disease, in addition to above symptoms of icterus, pruritis and xerosis, other characteristic features seen were Dupuytren's contracture, loss of hair, gynecomastia, clubbing of nails, Muehrcke's bands, palmar erythema and spider angiomas. These were similar to other studies where these symptoms were more commonly associated in patients of alcoholic liver disease.^{8,9,10} Spider angiomas when present are an indication of increased risk of esophageal varices in patients of alcoholic liver disease and palmar erythema result from increased vasodilation due to androgen imbalance.¹¹ Also Dupuytren's contracture when present is a strong pointer towards alcohol related liver damage.¹² Thus all these findings were present in our study. However one study found a lower incidence of spider angiomas, Dupuytren's contracture and palmar erythema in alcoholic liver disease patients.⁴

In our study, NAFLD and NASH formed a higher percentage of patients (23.8%) among all liver diseases. This carries immense significance as it signifies the rampant increase in metabolic syndrome and obesity in today's population. The prevalence of NAFLD has been reported to be at 10-39% in

various studies.¹³ It is a result of complex interplay of various factors like high fat diet, unhealthy life style, genetic factors, insulin resistance.¹⁴ Among cutaneous manifestations other than pruritis was most common followed by icterus and xerosis. Also pruritis was seen early and thus signified its role in early detection. Also specifically seen with it were acanthosis nigricans, xanthelasma, features of PCOD in our study thus adequately corroborating with the underlying pathogenesis.

In patients of cirrhosis, features of pruritis, xerosis, icterus were present as in other liver diseases, but features like clubbing, Terry's nails, caput medusae, gynecomastia were more significantly present. Many patients reported similar findings.⁴ Moreover some of the features present represented the inherent cause which led to cirrhosis.

In patients of viral hepatitis, many studies have reported pruritis to be the most common symptom whereas another study reported xerosis.^{4,15,16} In our study also we reported pruritis to be a very common complaint but icterus was the most common symptom. Other symptoms like PAN, PCT, lichen planus and vasculitis which have been commonly reported in various studies were present in our study as well.¹⁷ In patients with malignancies, commonly observed symptoms like icterus, pruritis, ichthyosis, clubbing and Terry's nails were observed similar to earlier study from south India. In our study we had 2 patients of coeliac disease affecting the liver. Cutaneous vasculitis in the form of palpable purpurae have been reported rarely in studies and in our study we had vasculitis in both the patients.^{15,16}

In our study a significant observation made was liver disease wise specific evaluation of cutaneous manifestations which can be useful in the proper identification of the causation of certain liver disorders, although more studies with bigger sample size may further be required.

CONCLUSION

This study was helpful in assessing various cutaneous manifestations of the different types of liver diseases. In our study a significant observation made was liver disease wise specific evaluation of cutaneous manifestations thus providing better insight into the type of liver diseases and it carries immense significance for practicing dermatologists in identifying the inherent disorder from cutaneous signs and symptoms.

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Source of Support: Nil; **Conflict of Interest:** None

Submitted: 05-04-2019; **Accepted:** 28-04-2019; **Published:** 20-05-2019