

## Original Article

# Cutaneous manifestations of chronic liver disease

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**Abstract** *Background* Hepatobiliary diseases are frequently associated with abnormalities of the skin, nails and hair.

*Objective* This study was undertaken to determine the cutaneous manifestations of chronic liver disease (CLD) and particular pattern associated with aetiology of disease.

*Patients and methods* Patients suffering from chronic liver disease of any aetiology presenting to department of gastroenterology Hayatabad Medical Complex, Peshawar from 1<sup>st</sup> December 2004 to 30<sup>th</sup> April 2005 were enrolled in the study. All the relevant details regarding history and clinical examination were recorded on a specially designed pro forma.

*Results* A total of fifty patients, 32 males and 18 females were included. Thirty (60%) patients were suffering from chronic hepatitis C virus infection, 14 patients were suffering from Chronic hepatitis B virus infection and 2 patients each were suffering from primary biliary cirrhosis and Wilson's disease. In two cases the aetiology could not be ascertained. Different manifestations included pigmentation (82%), Terry's nails (80%), xerosis and excoriations (72%), non-scarring hair loss from axilla and pubic region (64%), and spider naevi and palmar erythema (36%). Lichen planus was seen in 4%, vitiligo and hepatocutaneous syndrome in (2%) of patients each.

*Conclusion* Cutaneous manifestations in chronic liver disease are non-specific and do not point towards specific aetiology. Physicians caring for patients with chronic liver disease should pay attention to its multisystemic nature.

*Key words* Chronic liver disease, cutaneous manifestations.

## Introduction

Chronic liver disease (CLD) is a major health problem in Third World countries and responsible for major burden of disease presenting to hospitals in Pakistan.<sup>1</sup> An association between the skin and the liver disease has been recognized since ancient times. The term *spider* originated in the New

York underworld, where barmaids noted "spiders" as evidence of advanced liver disease in their customers.<sup>2</sup> Hepatobiliary disease can cause cutaneous manifestations in several ways; liver disease may cause skin changes, the skin and liver may be involved by the same pathologic process, skin disease may cause liver abnormalities and the liver may be damaged by drugs used to treat skin diseases.<sup>3</sup>

CLD can give rise to numerous extrahepatic disorders among which

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dermatological diseases occupy a central place and at times point to etiology of disease.<sup>4</sup> Jaundice, pigmentation, spider telangiectasias,<sup>5</sup> striae distensae, leukonychia, palmar erythema,<sup>6</sup> xerosis and loss of pubic and axillary hair are recognized sequelae of CLD.<sup>7</sup>

Besides, these certain dermatoses are frequently associated with hepatobiliary disorders including lichen planus,<sup>8,9</sup> pyoderma gangrenosum, urticaria, porphyria cutanea tarda, vitiligo and hepatocutaneous syndrome. Other skin disorders which may be linked to CLD are erythema multiforme and nodosum, Behcet's disease and malakoplakia.<sup>10</sup>

The present study was aimed to study the cutaneous manifestations of CLD and particular pattern linked to aetiology of disease and degree of liver dysfunction.

### **Patients and methods**

This prospective observation study was conducted in the department of Gastroenterology, Hayatabad Medical Complex/Postgraduate Medical Complex, Peshawar, from 1<sup>st</sup> December 2004 to 30<sup>th</sup> April 2005. Patients suffering from CLD of any etiology and either sex presenting to inpatient and outpatient department of Gastroenterology, Hayatabad Medical Complex, Peshawar, were enrolled in the study. In majority of the cases the diagnosis of CLD had been established and they presented for the management of complications.

All the patients underwent complete investigations including biochemical and

hematological tests, ultrasonography and antibody profile where required. In most of the cases the cause of the disease was known and patients had admissions in the hospital in the past.

A comprehensive pro forma was completed for every case. It included careful history, cutaneous and systemic examination. During history taking, emphasis was on presenting complaints, age of onset, duration of disease and drugs taken for CLD and hakim medication. Particular inquiry was made regarding intake of alcohol. Cutaneous examination included inspection of the oral cavity, examination of hair, nails, mucosae, genitalia and skin of the trunk and limbs. Patients were also evaluated for skin diseases associated with CLD.

### **Results**

Out of 50 patients evaluated, 32 (64%) were males and 18 (36%) were females. Their age ranged from 28 to 77 years and the duration of disease ranged from 1 to 4 years. 40 (80%) patients were suffering from decompensated disease. Thirty (60%) patients were suffering from chronic hepatitis C virus infection, 14 (28%) from chronic hepatitis B virus infection, 2 (4%) patients each had primary biliary cirrhosis and Wilson's disease. In 2 (4%) cases the etiology could not be ascertained as they presented with advanced liver disease necessitating management of complications (**Table 1**).

Different cutaneous manifestations are enlisted in **Table 2**. Pigmentation was the commonest finding observed in 41(82%) cases. Xerosis (dryness) of the skin and excoriations were seen in 36 (72%) patients.

.Terry's nails, a proximal white nail and distal pinkish margin a characteristic sign of CLD was seen in 40 (80%) cases. Non-scarring hair loss from axilla and pubic region was recorded in 32 (64%) patients. Spider nevi and palmar erythema was observed in 18 (36%) cases. In associated disorders lichen planus associated with chronic hepatitis C virus infection was seen in 2 (4%) patients whereas vitiligo and hepatocutaneous syndrome was recorded in 2% of patients each.

### Discussion

Chronic liver disease is a multisystemic disorder affecting majority of patients presenting to medical units for the management of variety of its complications arising as a result of its long standing course. Hepatobiliary diseases are frequently associated with abnormalities of the skin, nails and hair.<sup>11</sup>

In our study, 60% of patients were suffering from chronic hepatitis C virus infection, which is considered to be AIDS of the Third World countries.<sup>12</sup> Hepatitis B virus ranked second (28%) in causing chronic liver disease in our series. These results are similar to other studies conducted in this region which reported increased prevalence of hepatitis C virus infection in patients suffering from CLD.<sup>13,14</sup> The increased frequency of HCV infection may be explained by the fact that HCV has a higher propensity for liver disease.<sup>15</sup> In addition screening for HBsAg has been carried out routinely for some time now. Greater awareness against HBV infection and availability of vaccine may have also

**Table 1** Etiology of chronic liver disease in the study population

Disease	n (%)
Chronic hepatitis C	30 (60)
Chronic hepatitis B	14 (28)
Primary biliary cirrhosis	2 (4)
Wilson's disease	2 (4)
Unknown etiology	2 (4)

**Table 2** Frequency of different cutaneous manifestations in chronic liver disease.

Disease	n(%)
Pigmentation	41 (82)
Terry's nails	40 (80)
Xerosis	36 (72)
Nonscarring hair loss	32 (64)
Spider nevi & palmar erythema	18 (36)
Lichen planus	2 (4)
Vitiligo	1 (2)
Hepatocutaneous syndrome	1 (2)

contributed in slightly lower rate of CLD due to HBV infection in recent years.<sup>16</sup>

Primary biliary cirrhosis and Wilson's disease accounted for 4% of cases causing CLD, whereas in two cases the aetiology of disease could not be ascertained as they presented for the management of complications. Although primary biliary cirrhosis and Wilson's disease have distinctive cutaneous manifestations but our series failed to detect these.

Pigmentation was the commonest finding observed in 41(82%) cases. Pigmentation was seen in the form of diffuse muddy-grey hypermelanosis which had yellowish tinge due to additional jaundice and was more prominent in sun-exposed areas. Nadeem *et al.*<sup>17</sup> reported jaundice in 64% of cases. Xerosis as a result of prolong and decompensated nature of disease and resultant excoriations were noted in 72% of patients. Terry's nails, a proximal white nail

and distal pinkish margin a characteristic sign of CLD was seen in 40 (80%) cases. Another study from Karachi reported Terry's nails in 21% of patients.<sup>17</sup> This difference may be due to decompensated disease in our patients.

Non-scarring hair loss from axilla and pubic region was recorded in 32 (64%) patients. Spider nevi and palmar erythema was observed in 36% of patients in our series. Caput medusae and Dupuytren's contractures were not recorded. Most of these findings were non-specific and had no correlation to degree of liver dysfunction and etiology of disease. These findings are in accordance with earlier studies and this holds true when various textbooks of dermatology are scanned.<sup>2,3,17</sup>

Lichen planus associated with chronic hepatitis C virus infection was recorded in 2 (4%) cases. Although a study from Lahore reported 23.4% frequency of anti-HCV antibodies in patients suffering from lichen planus,<sup>18</sup> the association between lichen planus and hepatitis C virus infection remains controversial as studies in the past regarding prevalence of hepatitis C virus infection among patients suffering from lichen planus and control subjects were not statistically significant.<sup>19</sup>

### Conclusion

We conclude that cutaneous findings in CLD are nonspecific and do not point to particular aetiology. Importance should be given to overall picture of patient rather than presence of particular signs and symptoms.

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