Spider nevi: A presenting feature of chronic liver disease

Sir,

The vascular spider, arterial spider or spider angioma is the most classical vascular lesion that is sometimes a presenting sign of chronic liver disease. Spider telangietasia occur in up to 15% of normal individuals and may also be seen in pregnant women. The main vessel of the spider is an arteriole represented by a red point from which numerous, small, twisted vessels radiate. Application of pressure on the central arteriole with the head of a pin or a match stick causes blanching of the whole lesion. We report here a case with profusion of spider nevi predating the onset of liver disease.

A 36 year-old, non-alcoholic man presented to the Dermatology OPD for evaluation of multiple, eight months old, erythematous, asymptomatic macules distributed mainly over the front of the chest, with a few on the upper arm and back [Figure 1]. The rash was earlier diagnosed as an allergic reaction and was treated with antihistamines by a general physician. Six months after the patient presented to us, he developed jaundice and was investigated and found to have chronic liver disease.

Figure 1: Spider nevi

Dermatological examination showed hundreds of erythematous macules 2–5 mm in size, mainly over the front of the chest, upper abdomen and a few on the upper arm and back [Figure 1]. The central body and the vessels radiating from it, could be seen clearly in a few lesions; mucous membranes were spared. There was no other dermatological evidence of chronic liver disease.

Hematological investigations revealed thrombocytopenia: 1,25,000 (Normal = 1,50,000–4,50,000); prothrombin time = 17 s (control: 13 s) and activated partial thromboplastin time = 36 s (control: 26 s) were prolonged. Viral markers for hepatitis were all absent. Total estrogen level was 85.7 pg/mL (normal < 56 pg/mL) and the total testosterone level was 218 mg/dL (normal: 245–1836 mg/dL). Tests for antinuclear antibody and alpha fetoprotein were also negative. Liver function tests showed elevated bilirubin (total 4.3 mg/dL) and elevated enzyme levels (ALT: 93 IU/L, ALP: 328 IU/L) (expand abbreviations). Blood sugar and renal parameters were normal. An ultrasound of the whole abdomen showed a shrunken liver with a coarse and nodular echo texture, suggestive of chronic liver disease, splenomegaly and ascites. A liver biopsy was not done as the patient was unwilling to have it done. Based on the above findings, a diagnosis of cryptogenic cirrhosis was made.

Spider angioma or nevus araenus is a dilatation of preexisting vessels under several circumstatnces.[1] Common causes of spider nevi are listed in Table 1.

Spider nevi are commonly distributed over the face, necklace area, forearms, hands and the upper part of chest, *i.e.,* mainly over the region drained by the superior vena cava.[2] Vascular spiders have been attributed to excessive levels of estrogen because estrogens cause blood vessels to enlarge and dilate.[3] Serum estradiol and total testosterone

Table 1: Causes of spider nevi

10–15% normal adults and young children
Pregnancy
Familial
Chronic liver disease
Thyrotoxicosis
Estrogen therapy for rheumatoid arthritis
Oral contraceptive pills

levels are altered particularly in male patients with cirrhosis and spiders. Serum estradiol levels are increased and the total free testosterone level is reduced, thus leading to high estradiol/free testosterone ratios in male patients with spiders. Regression of spiders in patients with liver disease is possible with an improvement in the underlying condition although persistence of these spiders is more likely.[4]

Morphological studies and reconstruction methods demonstrated that spiders represent an arteriole and an organ with five separate parts:

1. A cutaneous arterial net,
2. A central spider arteriole,
3. A subepidermal ampulla
4. A star-shaped arrangement of afferent spider vessels, and
5. Capillaries[5]

Awareness of the association of spider nevi with systemic illnesses is essential to determine the underlying pathology. This case is presented for two reasons: 1. As spider nevi can precede liver diseases, it would be advisable to screen the patients with spider nevi for liver disease as early detection could prove to be beneficial to the patient, 2. The presence of spider nevi is also considered to be one of the physical findings predicting the presence of esophageal or gastric varices in patients with advanced liver disease.[6] It could therefore be cost-effective to screen and identify a group of patients who would most benefit from endoscopic screening for varices.

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REFERENCES

1. Robin AC Graham–Browne, Rathbone B, Marks J. The skin and disorders of the alimentary tract. In: Freedberg IM, Eisen AZ, Austen KF, Goldsmith LA, Katz SI *et al,* editors. Dermatology in internal medicine. 5th ed. New York: McGrowHill; 1999. p. 1909–29.
2. Champion RH. Disorders of blood vessels. In: Champion RH, Burton JL, Ebling FJ, editors. Rook / Wilkinson / Ebling Textbook of Dermatology. 5th ed. Oxford: Blackwell science Publishers; 1992. p. 1827–49.
3. Akiyama M, Inamoto N. Arteriovenous haemangioma in chronic liver disease – clinical and hisopathologic features of four cases. Br J Dermatol 2001;144:604–9.
4. Whiting DA, Kallmeyer JC, Simson IW. Widespread arterial spiders in a case of latent hepatitis with resolution after therapy. Br J Dermatol 1970;82:32–6.
5. Requena L, Sangueza OP. Cutaneous vascular anomalies Part I, Hamartomas, malformation and dilation of preexisting vessels. J Am Acad Dermatol 1997;37:523–49.
6. Zaman A, Hapke R, Flora K, Rosen HR. Bennerk in Factors predicting the presences of esophageal or gastric varices in patients with advanced liver disease. Am J Gasteroenterol 1999;95:3292–6.