tumor grows under the mesothelium. The observation of continuous mesothelial covering makes such a possibility less likely, but suggests a submesothelial origin. The focal Alcian blue positivity on histochemistry demonstrated acid mucopolysaccharide production which can originate from the submesothelial connective tissue cell. The special stains showed increased collagen between the tumor cells, suggesting active production by these cells.

The clinical behavior of localized pleural tumors with no cellular atypia is generally benign. Hepatic mesotheliomas reported in literature have benign histologic features, with no progression to malignancy. Hence, they too may be considered to have a benign course.

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Hepatic sarcoidosis responding to chloroquine as steroid-sparing drug

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We report a 59-year-old lady who presented with exertional dyspnea and was diagnosed to have sarcoidosis. She responded to steroids, but one year later developed abdominal symptoms and was found to have hepatosplenomegaly. Liver biopsy showed non-caseating granulomas. As she had developed steroid-induced diabetes she was started on chloroquine and responded well with regression of the liver and spleen during one year of treatment. [Indian J Gastroenterol 1999;18:177-178]

Key words: Liver granulomas
Although involvement of the liver in sarcoidosis is frequent, it is often asymptomatic. We report a patient with hepatic sarcoidosis and review the literature regarding steroid-sparing drugs, which were effective in this case.

A 59-year-old lady had history of progressive exertional dyspnea. Her blood count was normal; chest radiograph showed bilateral hilar lymphadenopathy. CT chest confirmed non necrotic bilateral hilar lymphadenopathy. Mantoux test (10 TU) was negative; ESR was 16 mm at the end of first hour. Serum angiotensin-converting enzyme (ACE) level was 91 unit/L (normal 8-52).

She was diagnosed to have sarcoidosis (stage I). Pulmonary function tests (PFT) showed normal expiratory flow rates but reduced total lung capacity (70%) and transfer factor (56%). She was started on prednisolone 30 mg/day. After a year, her symptoms had resolved; chest radiograph showed resolution and transfer factor improved to 80% of predicted. However, she developed steroid-induced diabetes and was started on oral hypoglycemic drugs. She was continued on 5 mg/day of prednisolone.

She stayed well till a year later when she presented with low-grade fever, marked abdominal fullness and loss of weight of over 5 kg since 3 months. On examination, she had hepatomegaly 15 cm below the costal margin with spleen just palpable.

Investigations: AST 60 IU/L, ALT 80 IU/L, gamma glutamyl transferase 74 UI/L (normal <60), serum bilirubin 0.3 mg/dL. Viral markers (HBsAg and anti-HCV) were negative. Ultrasonography showed hepatosplenomegaly with coarse echotexture and generalized increased echogenicity. PFT were normal with normal diffusion capacity. Serum ACE level was 134 UI/L. Hepatic sarcoidosis was suspected; since no tissue proof was obtained on her initially, liver biopsy was performed. This showed multiple non-caseating granulomas compatible with sarcoidosis (Fig.). There was no fibrosis or cirrhosis; Ziehl-Nelsen stain showed no acid-fast bacilli.

The patient was reluctant to increase her steroid dose again because of steroid-induced diabetes. Hence, chloroquine 150 mg base 300 mg as a steroid sparere was commenced daily, with regular retinal check. Within six months there was considerable clinical improvement and the dose of chloroquine was reduced to 150 mg daily. After a further six months, the liver and spleen were no longer palpable; liver profile and sonography were normal as well.

The liver is palpable in 20% of patients diagnosed to have sarcoidosis, but subclinical involvement is much more common; liver biopsies or autopsy have confirmed hepatic involvement in 75% of cases. Jaundice and hepatic failure are rare. Increased serum ACE level with raised alkaline phosphatase are often present. Portal hypertension and splenic vein thrombosis are known to occur as sequelae.

Histologically, hepatic sarcoidosis presents with non-caseating granulomas consisting of lymphocytes, histiocytes, giant cells, eosinophils and different types of inclusion bodies. Healing is by focal reticulin fiber deposition and Kuffer cell proliferation. Differentiation between sarcoidosis and biliary cirrhosis can be difficult in patients with chronic intrahepatic cholestasis. In such cases elevated serum ACE levels would favor sarcoidosis but this may also be elevated in other conditions.

Corticosteroids have been the standard treatment for symptomatic sarcoidosis. However, prolonged courses carry considerable side-effects; in addition, not all patients respond. Chloroquine has been used as a second-line agent with steroid-sparing properties. It is metabolized and sequestered in the liver, which may explain its efficacy in about 50% of cases. It is also used in sarcoidosis with cutaneous lesions and hypercalcemia. Retinal toxicity should be monitored every 3 months; monitoring of hepatic and renal function is also necessary.

Our patient tolerated chloroquine for a year without adverse effects. Our patient had relapsed whilst on steroid and her subsequent clinical recovery after starting chloroquine argue for a beneficial effect of this drug. Other steroid spares used as second-line therapy include methotrexate, chlorambucil, azathioprine and cyclophosphamide.

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