NEEDLE BIOPSY OF THE LIVER IN PEDIATRIC PRACTICE*

An Experience with 256 biopsies

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Hepatomegaly is one of the commonest conditions with which an infant or a child presents himself to the pediatrician in India. Vyas (1959) reported that 21.7 per cent of apparently normal children had a palpable liver varying in size from 1.5 cm. to 9 cm. below the costal margin. In most cases of hepatomegaly, the diagnosis can be reached to a fair degree of certainty by clinical examination and a few biochemical tests. In some patients, however, confirmation through histopathology is mandatory. Fortunately, such a group is a small one. Liver biopsy is not only a diagnostic procedure but may help in judging prognosis and assessing the response to treatment.

Material and Methods

Two hundred and fifty-six patients with hepatomegaly were admitted to J.I.P.M.E.R Hospital, Pondicherry, over a six-year period (1960-66). The diagnosis was made through clinical examinations substantiated by laboratory tests. Liver biopsy was done by Vim Silverman’s needle and the tissue preserved in 10% formalin fixed in paraffin and stained with hematoxylin and eosin. Percutaneous liver biopsy was done in 228 cases and a postmortem biopsy was taken in 28. No complications were encountered.

Observations

The age of the children varied from 1 month to 12 years, and there were 156 boys. Most of the patients presented at the ages of 0-3 years (106 cases) and again at 7-10 years (56 cases). The clinical diagnoses included cirrhosis 81 cases, malnutrition 56, iron deficiency anemias 31, infective hepatitis 11, hepatoma 5, neuroblastoma secondaries 1, congestive splenomegaly 4, tuberculous meningitis 10, pulmonary tuberculosis 3, tuberculous abdomen 9, and miliary tuberculosis 1. There were 11 patients with various C.N.S. diseases and the rest belonged to unclassified hepatomegaly. A few isolated patients had rare metabolic disorders such as Hurler’s syndrome 1, Morquio’s disease 1, and others with leukemia 1, syphilis 1, bleeding diathesis 3, mucoviscidosis 1, histoplasmosis 1 and various infections 7.

Histopathological findings in patients suspected to have cirrhosis. The diagnosis of cirrhosis was confirmed
in 41 out of 81 cases, these included early active cirrhosis 19, infantile cirrhosis 8, portal cirrhosis 6 and unclassified cirrhosis 8. Nine children showed focal necrosis, 8 diffuse fatty change, 6 portal fibrosis, 5 septal fibrosis, 3 cloudy swelling, focal necrosis and Kupfer cell activity, 2 cloudy swelling, Kupfer cell activity, focal necrosis and hypoproteinemia, 4 fatty change plus other mild changes, 2 periportal fibrosis with hypoproteinemia and 1 cloudy swelling with periportal fibrosis.

**Histopathological changes in malnutrition.**

The findings included moderate to severe hypoproteinemia in 35, diffuse fatty change in 24, focal fatty change in 8, moderate Kupfer cell activity in 20, focal necrosis in 13, periportal fibrosis in 8, cloudy swelling in 5, lymphocytic infiltration in 5, granular degeneration of the liver cells in 4, portal fibrosis in 3, early active cirrhosis in 2 and normal liver tissue in 2.

**Iron deficiency anaemia.** The changes noted included hypoproteinemia either alone in 10 patients, or associated with focal necrosis, Kupfer cell activity and periportal fibrosis in 8, focal necrosis with Kupfer cell activity in 5, moderate fatty change in 4, cloudy swelling and early active cirrhosis in 2.

**Infective hepatitis.** The histopathology was compatible with the diagnosis in 6 cases, it revealed infantile cirrhosis in 2, moderate fatty change in 1, hypoproteinemia in 1 and moderate Kupfer cell activity in 1.

**Unclassified hepatomegaly.** Histopathology established the diagnosis of Indian childhood cirrhosis in 2, cloudy swelling in 1, and hypoproteinemia with focal fatty change in 1. Normal tissue was seen in 1.

**Tuberculosis.** In 23 of these cases, hypoproteinemia with sometimes fatty change was seen in 9 cases, diffuse fatty change in 4, moderate fatty change with focal necrosis in 3, hepatic tuberculosis in 3, cirrhosis of the liver in 1, autolytic changes in 1 and normal liver tissue in 1.

**Neoplasms.** Two patients showed hepatoblastoma, 1 hepatoma, 1 granuloma of liver, 1 infantile cirrhosis and one secondary deposits of retinoblastoma.

**Systemic diseases.** In 36 such patients, the diagnoses made were cirrhosis one, normal tissue in 3, cloudy swelling in 1, fatty change with necrosis in 3, fatty change in 11 and hypoproteinemia in 15. In children with congestive splenomegaly, the liver showed portal cirrhosis in 2 cases, infantile cirrhosis in 1 and cloudy swelling in one.

**Discussion**

It is evident from our observations that the liver has got the capacity to undergo a wide range of pathological changes due to which it may be enlarged. It is interesting to note that the commonest cause of hepatic enlargement on clinical impression is cirrhosis of the liver, (31.6%), followed by protein calorie malnutrition (21.3%) and iron deficiency anemia.

The clinical diagnosis of cirrhosis was suspected in 81 cases but could be proved by liver biopsy in only 41 cases (50.5%) and in the rest, certain non-specific changes only were seen. The bulk of cases in this group showed evidence of early active cirrhosis and