mellitus and nephropathy is rare in Laurence-Moon Biedl Syndrome.

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Cholecystitis and Cholelithiasis in Children

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Cholecystitis and cholelithiasis are uncommon in children. Although the Western literature appears to suggest an increasing incidence of cholelithiasis in children, Indian studies are not available to substantiate this. In an Indian study of 228 cases of cholelithiasis and cholecystitis spread over a 15-year period the authors came across only one case aged 13 years(1). More recently in another study of 55 cases involving evaluation of cholecystitis both calculus and acalculus, in young patients, the authors reported only two cases in the age group of 0-10 years(2). It is, therefore, not surprising that biliary tract is often overlooked as a possible cause for abdominal pain in children(3). However, even with the increased awareness of cholecystitis and cholelithiasis in the pediatric age group there is still a lack of clear understanding of the etiology, natural history and a standard treatment in these patients. We report 3 cases of cholecystitis and cholelithiasis encountered over a 1½ year period in the age group of 4-12 years.

Case Reports

Case 1: A 4-year-old female child presented with recurrent attacks of right upper quadrant abdominal pain associated with vomiting of 4 months duration and she was afebrile during the attacks of pain. General and systemic examination was within normal limits. On abdominal examination, a soft, smooth, hepatomegaly, 4 cm in the midclavicular line, was the only positive finding. On investigations, the hemoglobin, the total and differential leucocyte counts and the liver function tests were normal. Peripheral blood smear was within normal

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limits. Ultrasonogram revealed multiple calculi in the gall bladder. During operation a thickened gall bladder containing multiple stones was removed. Histology showed chronic inflammatory changes in the gall bladder, and analysis of the gall stones showed them to be of the "mixed" type.

Case 2: A 7-year-old female patient presented with on and off mild to moderate pain in upper abdomen of 9 months duration with occasional vomiting. The patient had jaundice 1½ years ago which recovered after medical treatment. On abdominal examination, a soft, smooth, liver enlargement with a cystic, non-tender, gall bladder lump was palpable. All the biochemical and hematological tests were within normal limits. Ultrasonogram revealed dilated gall bladder with multiple calculi. During operation the gall bladder was thickened, inflamed and distended. It contained multiple calculi and one of the calculus was blocking the cystic duct. Common bile duct was normal. Cholecystectomy was performed (*Fig.*). The character of stones was of "mixed" type and bile collected during operation showed growth of streptococcus.

Case 3: A 12-year-old female patient was admitted in the emergency surgical ward with acute, colicky, abdominal pain, vomiting and fever of 18 hours duration without any jaundice. On examination, the patient was febrile, anicteric and had mild pallor. On abdominal examination, there was marked guarding and rigidity in the right hypochondrium. Hematological investigations showed a polymorphonuclear leucocytosis. Urgent ultrasonogram being not available, emergency laparotomy was performed and an inflamed gall bladder was removed. Histopathological examination of the gall bladder revealed acute acalculus cholecystitis.

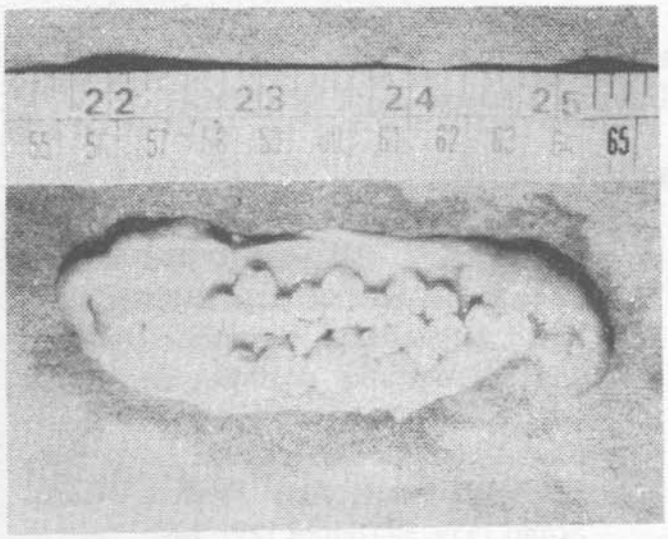

Fig. 1. Opened gall bladder showing multiple calculi (Case 2).

Discussion

Cholecystitis and cholelithiasis were documented in a pediatric patient more than 250 years ago when multiple common duct stones were found at autopsy of a 13-year-old boy(4). Although cholelithiasis remains infrequent in children, it is showing an increasing incidence of late. Whether this increase represents an actual rise in the prevalence or is due simply to improved recognition by better, non-invasive, diagnostic techniques is not clear. The factors implicated in the causation of childhood cholelithiasis include hemolytic disorders(5) and sepsis(6). More recently reports have shown association of gall stones in children with congenital biliary tract abnormalities, ileal abnormalities, total parenteral nutrition and diuretic therapy(7-9). However, none of our patients had any recognizable predisposing factor.

The symptomatology of bladder disease in childhood seems to be similar to that of adults, although abdominal pain may not

be well localised, and a history of fatty food intolerance may be difficult to elicit. Jaundice as a presenting symptom of cholelithiasis in childhood is uncommon. There is probably little doubt that cholecystectomy represents the treatment of choice for children presenting with symptomatic cholelithiasis. Controversy, however, still exists in the management of asymptomatic cholelithiasis. Jacir *et al.*(10) have suggested long term observation of asymptomatic children for spontaneous resolution of gall stones while others recommend cholecystectomy because of the associated sequelae and complications of gall stones(11).

In conclusion, it can be stated that though cholecystitis and cholelithiasis is an uncommon problem in childhood, it should be considered in all patients with upper abdominal pain. Ultrasonography is diagnostic and cholecystectomy is the treatment of choice both in symptomatic and asymptomatic children. In India, long term follow up for a possible spontaneous resolution of cholelithiasis is difficult due to poor socio-economic status of the patients.

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Acute Acalculous Cholecystitis

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Acute acalculous cholecystitis is rare in children(1-4). The acute symptom complex

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