

ACUTE CHOLECYSTITIS IN CHILDREN

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Acute cholecystitis and cholelithiasis do not follow the same pattern in children that is usually seen in adults. The diagnosis is often obscure since the usual findings of fatty food intolerance, body build, age, and sex are rarely if ever associated with this disease in childhood. If we draw from the experience of Glenn¹, Gross², Ulin³, and others, we find the following data most pertinent.

Most cases of acute cholecystitis in childhood are associated with acute systemic diseases such as acute hemolytic streptococcal septicemia, typhoid fever, erysipelas, and scarlet fever. Schwegman⁴ pointed out that a certain incidence of acute cholecystitis is seen in adults following unrelated surgical procedures. The factors present in the post operative period in adults may well be the same as those seen in childhood cholecystitis complicating acute systemic disease. Decreased or absent oral food intake and dehydration contribute to biliary stasis, concentration of the bile, and a diminished hormonal stimulation of gallbladder contractions. The use of narcotics to control pain may further aggravate this problem by producing sphincter spasm.

The incidence of cholelithiasis in childhood cholecystitis is 57%-69% as compared with an incidence of 93%-95% in this disease in adults. Over 60% of the childhood stones are of the pure pigment variety and most are associated with a demonstrable hemolytic disorder.

A history of jaundice has been reported in 26%-43% of children with gallbladder disease. It would seem that extra hepatic obstructive jaundice associated with cholecystitis in childhood is not commonly related to stones and is more likely the result of cholangitis and periductal edema. If we consider children with a recent history of jaundice, only 8% will reveal common duct stones while 48% of adults will have common duct stones. In 326 cases of primary gallbladder disease in children, Ulin³ found only 6% with common duct stones. Gerrish⁵, in 35 cases of jaundice in children from 6 months to 12 years of age, found 33 cases of intra-hepatic disease and only 2 cases of extra-hepatic ductal obstruction — both of these due to pancreatitis. Jaundice per se, particularly in the absence of stones in the gallbladder, does not appear to be nearly as strong an indication for common duct exploration in children as it is in the adult variety of the disease.

The rather typical history and somatic pain patterns seen in the adults are not found in children with any consistency. The only facet of the usual historical information which may be helpful is the familial history of gallbladder disease. The usual ratio of females to males of 4:1 in adults changes to 2:3 in children.

The case summary that follows illustrates some of the points that have been discussed.

A. J. #988391 was a three year old Negro male who had been perfectly well until 6 days prior to admission. At that time he began to appear somewhat lethargic. The following day he was anorexic, whined a good deal, and was noted to have some

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enlarged glands in the neck. Three days prior to admission he was treated by his family physician because of the onset of a rash on the abdomen and the soles of the feet. This was diagnosed as measles. At that time his temperature was 102°F.

The following day he was seen at another hospital in the city because of continued high fever, sore throat, and rash. At that time a diagnosis of scarlet fever was made and the child was admitted to the hospital for infectious diseases. The following data were reported at that time: Hgb 8.6 gms, WBC 49,000, Polys 61%, Bands 33%, Lymphocytes 3%, Monocytes 2%, Eosinophils 1%. Blood sugar 82 mgm. %, CO₂ 23.8 mEq/l. Chest Film: Compatible with pneumonitis. Abdominal films: Enlarged Liver and gas in the transverse colon. Lumbar puncture revealed no cells in the fluid. The following day the WBC was 36,400 with Polys 72%, and Bands 24%, and the serum bilirubin was 8.4 mgm.%. The sickle cell preparation was negative. The child was then transferred on the sixth day of his illness to the Henry Ford Hospital with the diagnosis of possible hepatitis or liver abscess.

On admission he was acutely ill, dehydrated, febrile (102°F), and icteric. The eyes, ears, nose, throat and chest were not remarkable. The abdomen was somewhat distended and tympanitic, but soft. The liver was greatly enlarged reaching down to the pelvic brim.

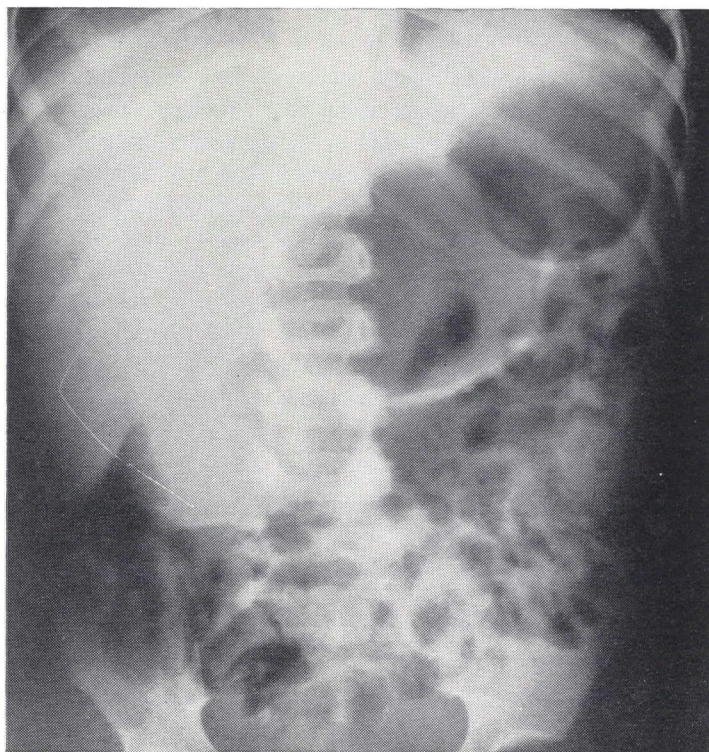


Figure 1

Flat film of abdomen showing mass in right upper quadrant which appears confluent with the liver.

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Figure 2

Upper gastrointestinal study showing the duodenal loop displaced to the left of the midline.

He was treated with naso-gastric suction, intravenous fluids, and large doses of penicillin in the infusion fluid. Over the next seven days his fever gradually subsided to near normal. The serum bilirubin fell from Direct 4.48 mg.%, Total 6.36 mg.% to Direct 1.1 mg.%, Total 1.8 mg.%. The leucocytes ranged from 33, 750 on admission to 26,600 on the sixth day, with polymorphonuclear count of 86% to 95%. Liver flocculation tests were normal. Serial blood cultures for bacteria were all negative. Stool culture was negative for pathogenic bacteria. No virus was isolated from the stool collected the day after admission.

Clinically the child improved. However, a mass remained in the right upper abdomen and as the abdominal discomfort improved the mass could be more easily defined. It appeared to be part of the liver. X-ray studies (figures 1 and 2) showed the mass to displace the lower pole of the right kidney laterally, the hepatic flexure of the colon downward, and the duodenum to the left of the midline. The diagnosis of a mass in the area of the porta hepatis was considered most likely. Our first consideration was liver abscess, and the second was tumor.

On the seventh day after admission laparotomy was performed and the mass was found to be a very large thin walled gall bladder filled with "white bile" (figure 3). There were no stones in the gallbladder. The cystic duct appeared obliterated, and the

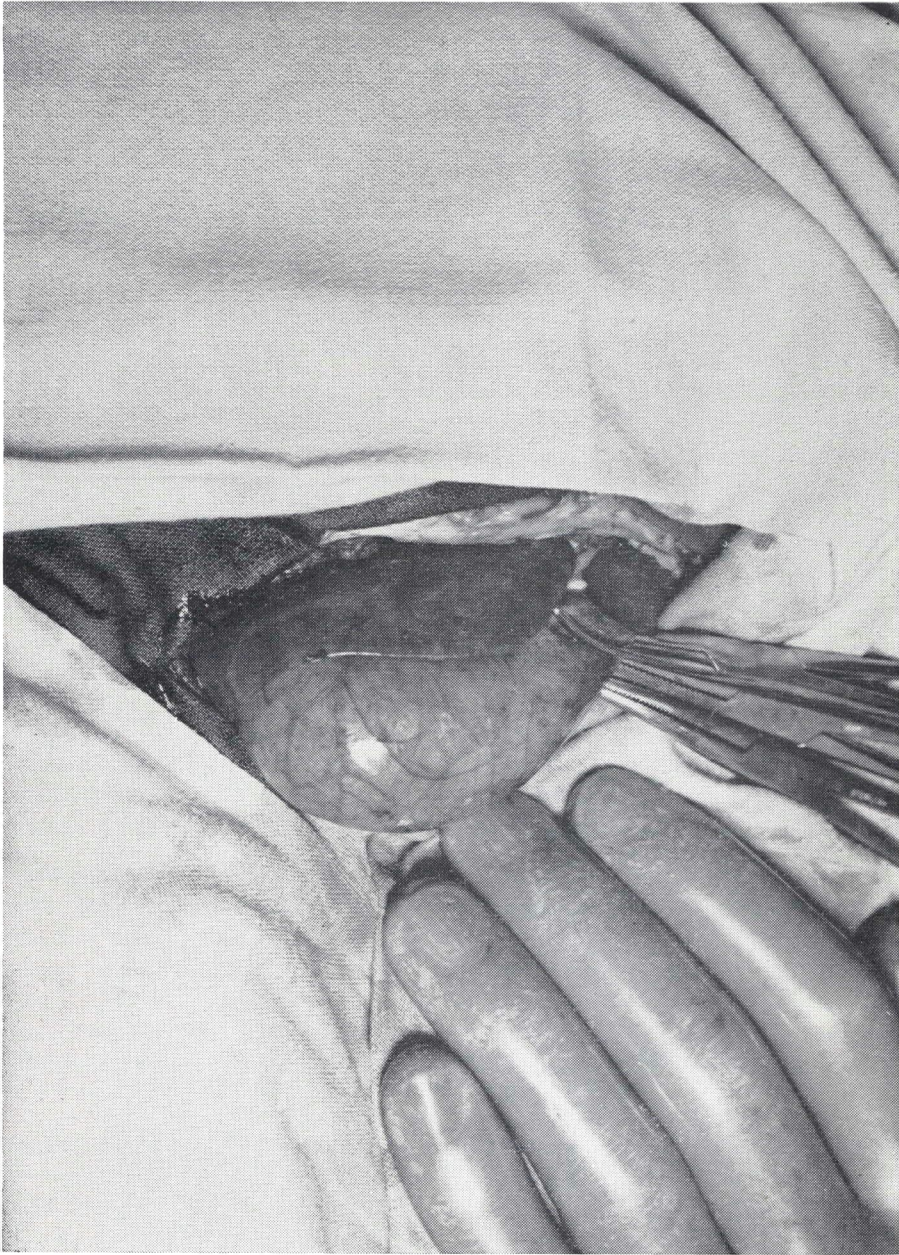


Figure 3

The large distended hydropic gallbladder. The liver appears normal.

structures in the porta hepatis were injected and thickened with moderate edema. The gallbladder, however, was not thickened but was moderately injected. After aspiration of the material within the gallbladder, the structure was removed without

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difficulty. Cultures of the aspirate as well as of peritoneal fluid were all negative for bacterial growth. The pathology report on the tissue removed revealed acute and chronic cholecystitis.

Post operatively the child recovered uneventfully, and he was released from the hospital on the tenth day following surgery. Five months later he is perfectly well and has had no illness during that time that has required the service of a physician.

In summary, this case illustrates how gallbladder disease in children is frequently not considered very prominently in the differential diagnosis. Acute cholecystitis is not common in children and a preceding acute systemic disease, so frequently a forerunner of this problem, may obscure the problem and make correct diagnosis difficult. Its detection, however, is extremely important so that proper treatment may be instituted. The treatment of choice is cholecystectomy. Common duct exploration is not mandatory on the basis of jaundice alone, as jaundice is so infrequently associated with common duct stones in the absence of stones in the gallbladder in childhood.

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