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CASE REPORT

Cholelithiasis associated with haemolytic-uraemic syndrome

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Abstract

Cholelithiasis occurs infrequently in the paediatric age group. Hereditary spherocytosis, sickle cell anaemia and thalassemia are the haemolytic disorders most commonly associated with development of gall stones in paediatric age group. The question is whether an isolated episode of haemolysis can cause gallstones.

Key words: Cholelithiasis; Haemolytic anaemia; Haemolytic uraemic syndrome

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INTRODUCTION

Haemolytic uraemic syndrome (HUS) is characterised by acute haemolytic anaemia, thrombocytopenia and acute oliguric renal failure. Often the patient has a prodrome of gastroenteritic bloody diarrhoea caused by *Escherichia coli* (*E. coli*). We report a patient who presented with biliary colic four months after recovery from HUS and her abdominal ultrasound revealed gallstones.

CASE REPORT

A 15-year-old girl presented with a 10-day history of watery diarrhoea, oliguria, haematuria and vomiting. A diagnosis of HUS was made based on renal failure, anaemia, thrombocytopenia and the presence of schistocytes on peripheral smear. Stool culture grew *E. coli* O157, phage type 21. She received packed cell transfusion, but did not need any dialysis. Following satisfactory clinical and biochemical improvement, she was discharged a week after admission. On follow-up, she was doing well.

Four months after admission, she presented with an episode of intermittent colicky right upper quadrant abdominal pain and nausea. Clinical and biochemical examination was normal. An ultrasound examination revealed marginally dilated common bile duct (diameter 9 mm) and common hepatic ducts. Gall bladder contained a small amount of sludge, but was otherwise normal. She was treated conservatively with analgesics and intravenous fluids and was doing well at discharge, a couple of days later.

She was readmitted 2 mo later for another episode of colicky right upper quadrant abdominal pain and nausea. A repeat abdominal ultrasound revealed multiple small gall bladder calculi. Rest of the ultrasound examination was normal. She had a magnetic resonance cholangiopancreatography (MRCP), which revealed a normal biliary duct and a common bile duct, besides gallstones. She had an elective laparoscopic cholecystectomy 6 wk later. Multiple pigment gallstones were found. On follow-up, she remained asymptomatic and was doing well.

DISCUSSION

Gallstones are classified into three types according to their chemical composition, namely cholesterol, pigment and mixed stones. Mixed and cholesterol gallstones usually contain more than 70% cholesterol monohydrate plus an admixture of calcium salts, bile acids and bile pigments, proteins, fatty acids and phospholipids. Pigment stones are composed primarily of calcium bilirubinate containing less than 10% cholesterol.

Although cholelithiasis occurs infrequently in the paediatric age group, its incidence has increased during the last few decades. The reason why gall stones are not considered as a possible cause of jaundice or right upper quadrant discomfort in the past is the emphasis placed on the belief that haemolytic disease is a necessary prerequisite for gall stone formation in children[1].

Currently only about 20% of cholelithiasis cases in children are attributed to haemolytic conditions. Hereditary spherocytosis, sickle cell anaemia and thalassemia are the haemolytic disorders most commonly associated with development of gall stones. The question is whether an isolated episode of haemolysis can cause gallstones. The answer is yes because there are many reports in the literature.[2, 3] while the answer is no because none of the textbooks mentions it as a cause of gallstones. Hence, there is relatively low awareness that self-limiting haemolytic episodes can predispose to gall stones.

There are a few case reports of gall stones associated with HUS[2, 3]. Brandt *et al*[4] reported a high incidence of

gastrointestinal sequelae following typical HUS. Cholelithiasis might be related to haemolysis during the acute phase of HUS leading to pigment gall stones or to the use of parenteral nutrition. Parenteral nutrition was not used in the case presented.

In conclusion, neither is cholelithiasis mentioned as a complication of the HUS, nor is an acute haemolytic process listed as aetiology of gallstones. But gallstones should be suspected in both settings. An abdominal ultrasound examination can easily and readily confirm the diagnosis.

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