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CASE REPORT

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Gallbladder stone as a possible cause of acute and recurrent abdominal pain in Nigerian adolescent sicklers: a report of two cases

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Abstract*:* Nigeria has the highest population of people with sickle cell disease globally. As these patients live longer chronic complications are bound to be encountered more frequently. This case report presents two adolescents with gallbladder stones, to highlight the increasing importance of the condition as a cause of acute and recurrent abdominal pain in Nigerian sicklers.
First patient is a 14year old male sickler with recurrent abdominal pain, and typical changes in the stool, over a period of six months. Abdominal ultrasonography revealed gallbladder stones as the most likely cause of the pain. The second patient is a 17-year-old male who presented with a day history of abdominal pain. Ultrasonography also revealed gallbladder stone as the most likely cause of the pain.
It is concluded that gallbladder stone is becoming an increasing important cause of abdominal pain in Nigerian sicklers. Abdominal ultrasonography with a deliberate search for gallbladder stones should be routine in sicklers presenting with abdominal pain.

Keywords: Sickle cell disease, cholelithiasis, abdominal pain.

Introduction

Nigeria has the largest number of people with sickle cell disease (SCD) in the world, estimated at 3% of the population, while the frequency of the sickle cell trait is about 25%.[1]The condition is characterised by chronic anaemia. The acute events include hyper-haemolytic anaemia, sequestration crisis, acute chest syndrome and infarctive crisis which may occur in any part of the body causing pains.[2,3,4]Other chronic conditions associated with SCD include delayed growth, delayed sexual maturation, neurological deficits and organ damage.[5,6]
The longevity of these patients has improved recently due to early treatment with antibiotics, better pain management, vaccination for common bacterial diseases and especially the use of hydroxyurea.[7,8]As these patients live longer, chronic complications are bound to be encountered more frequently. One of such possible complications is cholelithiasis, arising from chronic haemolytic state and episodes of hyper-haemolysis.[9] This can cause abdominal pain.

The causes of abdominal pain in children are many and varied. Sickle cell disease further widens the spectrum.[9,10]We present here two cases of abdominal pain in adolescent Nigerian sicklers probably caused by gall bladder stones. The aim is to highlight the emerging importance of gall bladder stones as a cause of abdominal pain in Nigerian sicklers, with increasing longevity.

Case Report

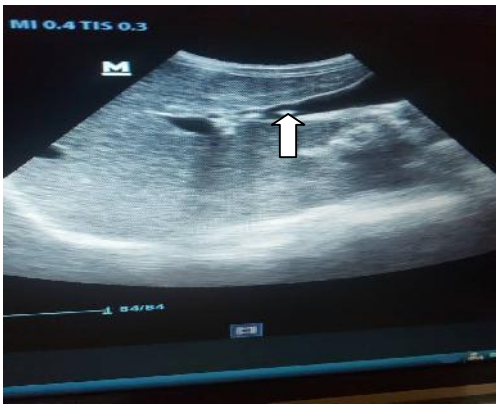
Case No. 1

NE is a 14-year old male and a known sickler. He complained of intermittent abdominal pains in the previous six months. Pains would last 3-4 days with about a month of relief in-between. Pain was located in the left middle and left upper abdomen, colicky in nature and would interfere with school attendance. During episodes eyes became more yellow, urine deeper yellow, stools become oily but not pale. Episodes were not associated with itching and appetite remained good. Examination revealed a fairly well-nourished adolescent, mildly pale with a tinge of jaundice, no clubbing and no significant lymph nodes. His weight was 36kg and length 152cm.Abdomen was flat with no area of tenderness. Both liver and spleen were not palpable. Murphy's sign was positive.

Haemoglobin was 6.7 gm/dl, PCV 22% and Platelet count $315x10^9$/L. Total WBC was $13.6x10^9$/L; Neutrophils 42.8%, Lymphocytes 37.6%, Monocytes 10.0%, Eosinophil 9.2% and Basophils 0.4%. Liver function test was as follows: SGPT 39.5 U/L (normal range 0-40 U/L);alkaline phosphatase 340.1 U/L (normal range245-270 U/L); Total bilirubin 95.59 umol/L (normal range 0.0-17.1 umol/L); conjugated 11.46 umol/L (0.0-6.84 umol/L); Unconjugated 84.13 umol/L (0.0-10.26 umol/L). Urinalysis showed onlyurobilinogen and pus cells 1-

2/hpf. *H. pylori* IgG antibody was negative.
Abdominal ultrasonography showed hepatomegaly with liver span (14.06cm) and homogenous parenchymal echo-pattern. The gall bladder harboured multiple calcific densities in the lumen, casting posterior acoustic shadows. The wall thickness of the gall bladder was within normal limits (Fig. 1). There was splenomegaly with homogenous echo-pattern. The splenic span was 16.36cm. Both kidneys were normal in size and had good corticomedullary distinction. The urinary bladder was regular in outline and had clear content. A diagnosis of recurrent abdominal pain secondary to gallbladder stones was made and conservative management started.

Fig 1: Abdominal ultrasound scan of a 14 year old sickler showing multiple gall bladder stones

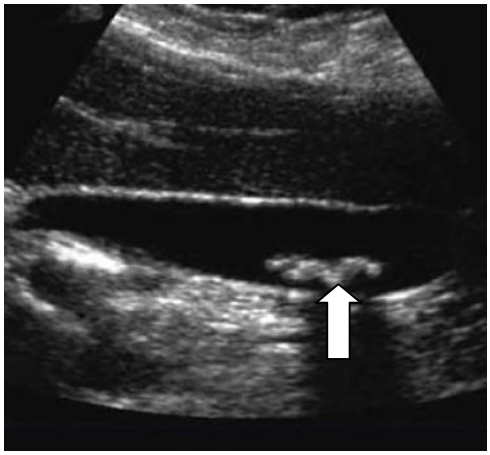


Case No. 2

EP is a 17year old male known sickler who presented with one day history of abdominal pain located at the upper abdomen. The pain was colicky in nature and necessitated presentation at the hospital. There was no associated increased yellowness of the urine during the episode. The stool was normal, not oily. Patient vomited brownish vomitus three times during the episode. Examination revealed a well-nourished, a febrile adolescent. He had a tinge of jaundice but not pale and there was no clubbing. His weight was 47.4kg and length was 1.64m.The abdomen was flat, no area of tenderness and Murphy's sign was negative. There was hepatosplenomegaly and the kidneys were normal in size.
Haemoglobin was 8.8 gm/dl, PCV 29.7% and Platelet count 271 x 10^9/L. Total WBC was 9.6 x 10^9/L; Neutrophils 34.5%; Lymphocytes 51.2%; Monocytes 11.6%; Eosinophils 2.4% and Basophils 0.3%. Liver function test was as follows: SGPT 5.5 U/L (normal range 0-40U/L);alkaline phosphatase 300.2U/L (normal range 245-270 U/L); total bilirubin 40.70umol/L (normal range 0.0 – 17.1 umol/L); conjugated 15.05 umol/L (0.0 – 6.84 umol/L); unconjugated 25.65 umol/L (0.0 – 10.26umol/L). Urinalysis: pus cells 1-2/hpf. *Helicobacter pylori* IgG antibody test was negative.

Abdominal ultrasonography showed an enlarged liver with a span of 17.3cm. The liver had normal echotexture. The gall bladder measured 8.09x2.32x0.32cm, and harboured multiple calculi with posterior acoustic enhancement (Fig.2). Both kidneys were normal in size and echotexture and had good corticomedullary distinction. The spleen was atrophic and had a span of 4.93cm. The urinary bladder was regular in outline and had clear content. A diagnosis of acute abdominal pain secondary to gallbladder stones was made and conservative management started.

Fig 2: Abdominal ultrasound scans of a 17 year old sickler showing multiple gall bladder stones



Discussion

Abdominal pain is an important feature of older patients with SCD.[11]As patients with sickle cell disease live longer, gallbladder stone is bound to become increasingly important as a cause of abdominal pain. Our first patient illustrates gallbladder stone as a possible cause of recurrent abdominal pain in sicklers. Normal urinalysis result and negative *Helicobacter pylori* anti-body test excluded possible renal causes of pains *and Helicobacter Pylori* infection respectively.

Recurrent abdominal pain, defined as three episodes of abdominal pain occurring in the space of three months, severe enough to affect daily activities, can be caused by a wide variety of conditions including gallbladder stone.[11,12]The risk factors for gallbladder stones include increasing age, chronic haemolysis, high cholesterol diet, high calcium intake and use of oral contraceptive.[5] SCD is characterized by chronic haemolysis and episodic hyper-haemolytic crisis.[2] With increasing age of sicklers in Nigeria, some of whom may use contraceptives, gallbladder stones are bound to become increasingly important as a cause of recurrent abdominal pain.
Our second patient presented with acute abdominal pain severe enough to bring child to hospital. Normal urinalysis result and negative *Helicobacter pylori* anti-body test excluded possible renal causes of pains and *Helicobacter pylori* infection respectively. Ultrasonography revealed gallbladder stones as a possible cause of the acute abdominal pain. Thus, gallbladder stone can be the cause of acute abdominal pain in sicklers.

Cholelithiasis tends to occur at about the fourth decade of life in obese people, with a predilection for the female

gender.[13] In south-eastern Nigeria gallbladder stone has been reported to occur at an average age of 35.5years.[13]Both patients in the current study are in the adolescent age group and are males. The chronic haemolysis in this condition can explain the early occurrence of cholelithiasis in these male children. Gallbladder stone has been described as early as two years of age in Nigerian sicklers.[15]Both children in the current report responded to conservative management with fluids, analgesics and antispasmodics.

Conclusion

It is concluded that with increasing longevity of sicklers in Nigeria, gallbladder stones should be considered as possible cause of acute and recurrent abdominal pain among these children. Abdominal ultrasonography with the deliberate search for gallbladder stone should therefore be a routine investigation for sicklers with abdominal pain. Large scale studies to define the epidemiology, clinical diagnosis and course of gallbladder stones in sicklers are required in our environment.

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