RECURRENT PANCREATITIS: CHALLENGES IN MANAGEMENT

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Background

Recurrent Acute Pancreatitis (RAP), is an uncommon clinical condition, usually seen in the setting where the underlying risk factors remain unresolved. Diseases of the pancreas peak in the 3rd and 4th decades and are commonly caused by gall-stones (Cholelithiasis) which are detectable by abdominal ultrasonography and computerised tomography. Microlithiasis, a leading cause of RAP, often presents with diagnostic challenges in resource limited settings.

Case Report

We present a case of a 19 year old female with recurrent bouts of epigastric pain within a two year period. Laboratory investigation revealed fluctuating levels (high and normal) of serum amylase and lipase while repeated abdominal Ultrasonography were normal. Computerised tomography was initially normal but later scans revealed features of pancreatitis. Microlithiasis was identified following Endoscopic Ultrasonography which had to be done outside the shores of the country as this facility is not available in our practice. She had laparoscopic cholecystectomy and after an episode of abdominal pain has remained pain free.

Conclusion

This case has highlighted the constraints faced by practising physicians as well as the morbidity suffered by patients with this uncommon condition due to non-availability of appropriate diagnostic tools in our setting necessitating our patient seeking assistance abroad. It underscores the need to ensure their availability as well as that of adequate skilled personnel by stakeholders in the health sector.

Key Words: *Acute Pancreatitis, Microlithiasis, Endoscopic Ultrasound*

Introduction

Acute pancreatitis is defined as the presence of inflammation in the pancreas[1,2] and is usually diagnosed with the aid of laboratory parameters and imaging studies.

Acute pancreatitis can lead to recurrent acute pancreatitis (RAP) if the underlying factor remains uncorrected.[4,5] Determining the aetiology of pancreatitis is important because it helps to direct therapy. RAP usually results from excessive alcohol use and gallstone disease, especially microlithiasis. Initial evaluation fails to detect the cause of RAP in 10-30% of patients and as a result the diagnosis of idiopathic recurrent acute pancreatitis (IRAP) is given.

There have been very few reports of RAP in adolescents worldwide and data in Nigeria is lacking. Studies in the US and UK however, indicate an increase in incidence of acute pancreatitis in adolescents. In the US, the incidence rose over a 3 year period, from 6-8 per 100,000 with biliary lithiasis as the leading cause, accounting for 48% of cases studied. Females were noted to be affected four times more than males.[6]

Although terms are used interchangeably, microlithiasis specifically refers to a condition in which cholesterol monohydrate, calcium bilirubinate or calcium carbonate stones measuring less than 2mm are present within the gall bladder lumen or bile duct, whereas sludge is a suspension of crystals, mucin, glycoprotein and cellular debris.[1] Microlithiasis may be evaluated by crystal analysis of bile aspirate obtained during an ERCP. A negative result does not rule out microlithiasis. Endoscopic Ultrasound Scan (EUS) is of benefit in excluding other causes of RAP such as chronic pancreatitis, cysts and tumours[7].

Microlithiasis may lead to pancreatitis through several mechanisms including the impaction of the papilla by small stones, leading to pancreatic duct obstruction and eventual pancreatitis.[8]Repeated exposure to microlithiasis may lead to papillary stenosis and dysfunction of the sphincter of Oddi, both of which are associated with pancreatitis.[9]

As with stones, sludge may cause obstruction (often transient) which may recur depending on initiating factor and lead to subsequent stone formation in 12.5% of patients.[10]

We present a case of a young female Nigerian with RAP, highlighting the constraints encountered in her management.

Case Presentation

A.T is a 19-year old female who was admitted under the Gastroenterological Unit of the Lagos State University Teaching Hospital, Ikeja, on account of a 2-year history of recurrent epigastric pain that radiated to the back and was worsened by lying supine. An acute exacerbation of the pain had been noted 2 weeks prior to admission. It was associated with intense nausea and episodes of non-bilious vomiting.

She had no history of peptic ulcer disease, ingestion of NSAIDS, hematemesis or passage of melena. Minimal relief was obtained with anti-secretory drugs. She had neither a history of alcohol ingestion nor jaundice.

She was from a monogamous family of 2 children.

Examination revealed, a young woman, not pale, febrile or jaundiced. She had a body-mass index of 19kg/m^2. Her pulse rate was 88 per minute, regular and normal volume; blood pressure was 110/70mmHg. Only the first and second heart sounds were heard on auscultation of the heart. Severe tenderness was noted in the epigastrium while the rest of the examination was unremarkable.

An impression of Acid-peptic disease (Gastro-Oesophageal Reflux Disease) to exclude Acute Pancreatitis was made and she was started on parenteral proton-pump inhibitors, antacids and parenteral analgesics without relief.

Investigations done in the course of her admission are outlined in Table 1.

After a series of initially normal tests, a repeat CT-Scan of her abdomen done on the 8^{th} week of admission showed evidence of Grade B acute pancreatitis. A corresponding assay of her serum amylase (repeat) showed marked elevation (187u/l). These results are shown in Table 1 and figure 1.

She was managed symptomatically for Acute Pancreatitis with Dyslipidemia, started on Atorvastatin and Dihydrocodeine (DF118) tablets and discharged pain free on the 9^{th} week of admission, to be seen on outpatient basis.

However, six months after discharge, she had recurrent bouts of pain prompting re-evaluation.

A repeat CT-Scan of the abdomen revealed a swollen and inflamed pancreas while an Endoscopic ultrasound scan (EUS), revealed gall-stones obstructing her biliary tract, necessitating Laparoscopic Cholecystectomy. Findings at Laparoscopic Surgery included: Minimal adhesions, sludge and minute calculi in the gall-bladder.

She was discharged home pain free on the 4^{th} day post-op on a 3 day course of paracetamol and a week's course of a proton pump inhibitor (Pantoprazole).

Table 1: Progression of Investigation Results on Admission

Time Course	Serum Amylase (Normal: 25-125 u/l)	Serum Lipase (Normal: 8-53 u/l)	Abdominal CT Findings
On admission	**140**	**25**	No significant anomaly seen
8 weeks on admission	**187**	**34**	*Multiple, small, ill-defined, non-enhancing, hypo dense areas within the body and tail of the pancreas, in keeping with Necrosis.*
6 months post discharge	**195**	**17**	*Bulky tail of pancreas with homogenous enhancement.*

Other investigations done on admission (with normal findings): Full Blood Count, Erythrocyte sedimentation rate (ESR), serum electrolytes, urea, creatinine, Fasting Blood Sugar & 2hrs post-prandial; plain chest radiographs, urinalysis, electrocardiography, echocardiography, Human Immunodeficiency virus I&II, Urea Breath Test, upper gastro-intestinal endoscopy, abdominal ultrasound scan.

Investigations done on the 8th week of admission: Fasting Lipid Profile: Total Cholesterol: **235mg/dl; LDL: 172mg/dl; HDL: 45mg/dl; TG: 92mg/d**l; Serum lactate dehydrogenase (LDH): **607u/l (Normal: 230-460 u/l)**. The urinary porphyrin screen, stool microscopy, serum Helicobacter pylori Antibody screen, Auto-antibody screen: repeat abdominal ultrasound scan **were normal.**

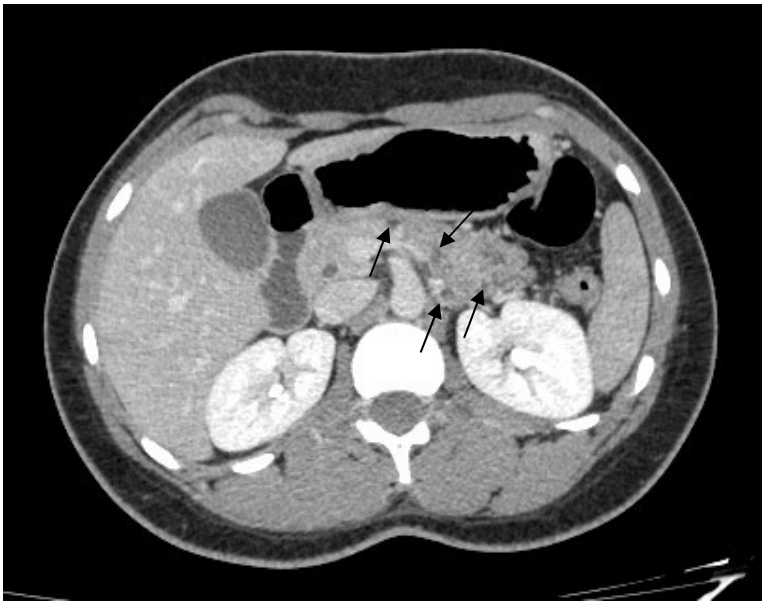

Figure 1: Contrast-enhanced CT-Abdomen 8 weeks on admission showing multiple, small, ill-defined, non-enhancing, hypodense areas within the enlarged body and tail of the pancreas, in keeping with necrosis (arrows).

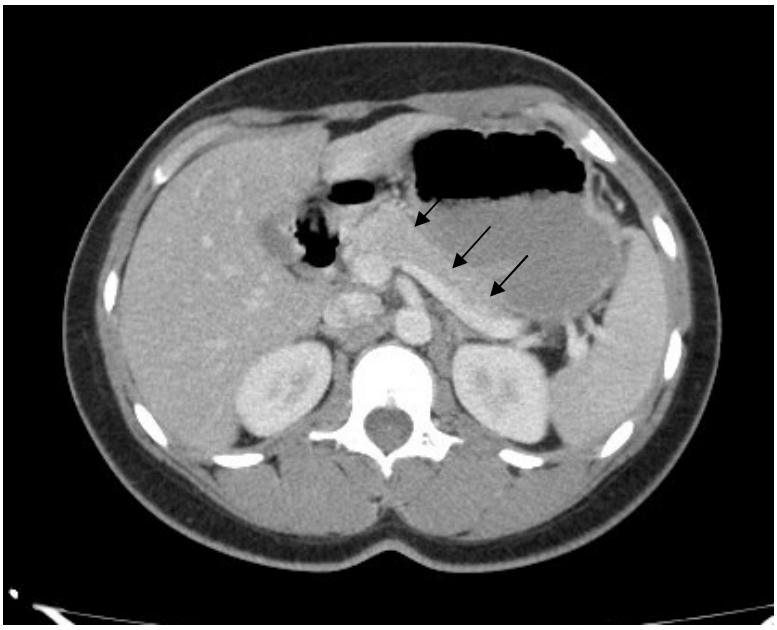

Fig 2: Contrast- Enhanced CT-Abdomen after 6 months showing bulky body and tail of the pancreas with homogenous enhancement (arrows).

Discussion

Management of RAP continues to be very challenging because diagnosis requires documentation of recurrent inflammatory process in the pancreas as well as underlying precipitating factors. This would entail clinical features as well as biochemical evidence of pancreatic damage as shown by pancreatic enzyme elevation as well as imaging features of the organ.

The pancreatic enzyme in our patient showed only mild elevation of the serum amylase, with normal lipase values, despite recurrent attacks of severe abdominal pain, a notable feature of pancreatitis.[1] The enzyme values noted were equally not very high (less than four times the upper limit of normal) unlike reports in other series[2].

The imaging features of acute pancreatitis have been graded into five (A-E) based on the severity[3]. The initial CT scan was normal (Grade A) while later scans revealed features consistent with Grade B. It is noteworthy that repeated abdominal ultrasound scans in this patient were normal. This scenario is not out of place with a diagnostic sensitivity of 50% reported with ultrasound scan[11-13.] In cases of microlithiasis however, it is said to improve with repeated examination.

An alternative would be to employ another diagnostic tool with greater sensitivity: an Endoscopic Ultrasound Scan (EUS) [14] though this is operator dependent and is not widely available. Following diagnosis, an appropriate management would entail removal of the gallbladder as well exploration of the common bile duct either intra-operatively or by Endoscopic Retrograde Cholangio-Pancreatography (ERCP).

Our patient had laparoscopic cholecystectomy but owing to lack of facilities ERCP could not be done. However she has being placed on ursodeoxycholic acid to prevent recurrence and has remained pain free.

Conclusion

The case has highlighted some of the constraints faced by practising physicians as well as the morbidity suffered by patients with this uncommon condition due to non-availability of appropriate diagnostic tools in our setting. It underscores the need to ensure their availability as well as that of adequate skilled personnel by stakeholders in the health sector.

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