Excessive traction should be avoided to prevent further tightening of the knot.[9] A skull radiograph can be performed to look for a knotted tube. Endoscopy is useful for both confirmation and retrieval. After confirmation, the knotted tube can be retrieved either by the nasal or oral route. For retrieval through nasal route, a 7.5 mm red nasopharangeal tube is passed over the nasogastric tube after adequate lubrication of the nostrils with lignocaine gel. The nasopharyngeal tube is pushed down the nostril while maintaining adequate tension over the nasogastric tube.[3] After adequate insertion, the knot can be pulled into the lumen of the nasopharyngeal tube and both tubes are removed nasally.[3] For oral retrieval, either general or adequate topical anaesthesia can be used depending on the patient's condition. Under vision, the distal knotted part is grasped with a Magill forceps and is pulled out of the mouth after cutting the proximal part free.[9] We retrieved the knotted tube through the oral route.

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Acute necrotizing pancreatitis following olanzapine therapy

Introduction

Acute pancreatitis, a common gastrointestinal emergency, is often caused by gallstones and alcohol.[1] Medications are infrequent but important causes for acute pancreatitis. Olanzapine, a dopaminergic and serotoninergic receptor antagonist, is an atypical anti-psychotic agent of thienobenzodiazepine class and is known to have several side effects. It has been rarely reported to cause acute pancreatitis.[2-8] We report a patient with acute necrotizing pancreatitis probably induced by olanzapine and review reports of this rare condition from the literature.

Case report

A 25-year-old man presented with sudden onset, severe epigastric pain radiating to his back, accompanied by bilious vomiting. Investigations, after 12 hours of onset of pain, revealed a serum amylase level of 2300 units per litre (normal: 23 to 85 U/l), total leucocyte count (TLC) 14700/mm^3 (normal: 4,000-10,000 leucocytes/mm^3) with 94% neutrophils. He had paralytic ileus, which improved over next three days. There was no oliguria, gastrointestinal bleed or altered sensorium. Contrast enhanced computed tomography (CECT) of the abdomen (**Figure 1**) on day 3 of illness, showed necrotizing pancreatitis with mild ascites with a CT severity index of 8/10.[9]

The patient was being treated with olanzapine (10 mg/d) for 'psychosis, not otherwise specified', since seven months. He was a non-smoker, non-alcoholic, and did not take any other medication or suffered any other illness. The patient presented to our centre on 11th day of illness with respiratory distress and fever. His PO_2 while on room air was 68 mmHg and TLC was 22800/mm^3 (80% neutrophils). Other investigations included serum creatinine: 0.9 mg/dl (normal: 0.8 to 1.4 mg/dl), bilirubin: 1.1 mg/dl (normal: 0.3 to1.5 mg/dl), triglycerides: 162

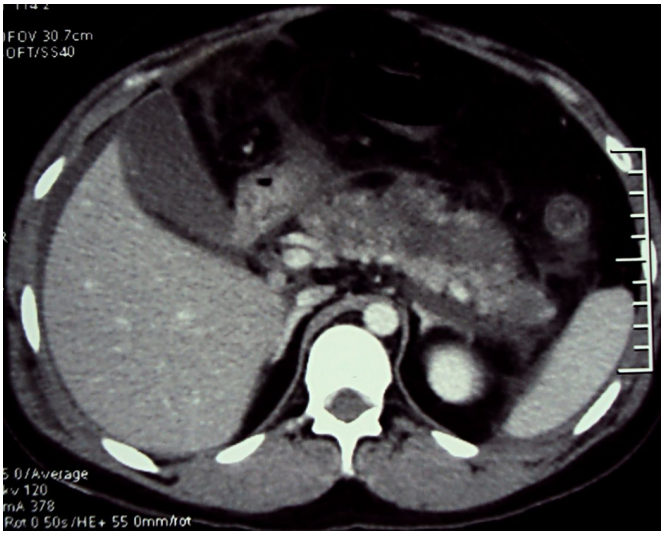

Figure 1: Contrast enhanced computed tomography of abdomen showing pancreatic necrosis with mild ascites (CT severity index: 8/10)

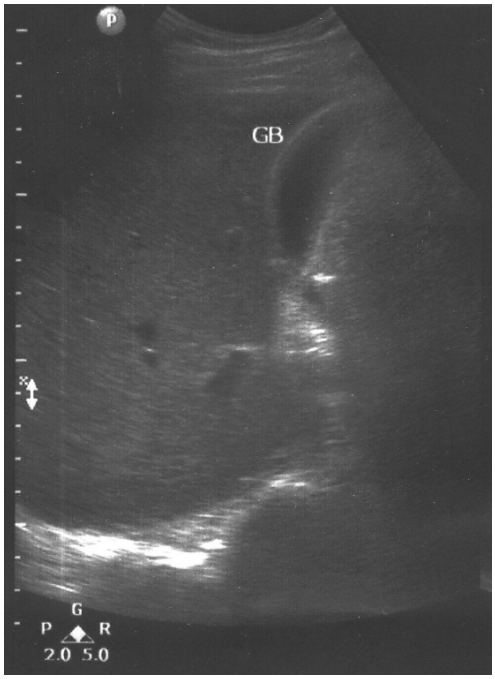

Figure 2: Abdominal ultrasound showing an anechoic gallbladder

mg/dl (normal: less than 150 mg/dl) and serum calcium: 8.3 mg/dl (normal: 8 to 10 mg/dl). An abdominal ultrasound showed normal gall bladder (**Figure 2**) and bile duct. He was successfully treated by discontinuing olanzapine therapy, and was instituted on parenteral imipenem, cilastatin and oxygen inhalation and was later discharged from the hospital. He remained well during a follow-up period of 2 months.

Discussion

Our patient had acute pancreatitis as evidenced by typical pain, elevated serum amylase and supportive imaging.[10] It was most likely caused by olanzapine given its temporal association with the illness, absence of other etiological and risk factors, improvement on discontinuation of the drug and its known association with acute pancreatitis, even though rare. Though, recurrence on re-challenge would have confirmed the association, it was not ethical.

Using Naranjo causality scale[11] acute pancreatitis in our patient qualified as a probable adverse drug reaction to olanzapine. Koller et al[12] studied anti-psychotic associated pancreatitis and noted that 32 of 51 (63%) patients with pancreatitis thought to be due to olanzapine had 6 months or less of drug exposure before developing pancreatitis, which is somewhat similar to the duration of exposure in our patient. Olanzapine is a commonly used drug in psychiatry. In an Indian survey, 30% of prescriptions for psychosis contained olanzapine.[13] In another outpatient survey, olanzapine accounted for 609 of 1477 (41.2%) prescriptions for psychosis.[14] Similar prescription patterns have been reported from the West.[15] Considering the above data on frequency of olanzapine use and rarity of reports of pancreatitis associated with this drug, it seems like an uncommon complication; however, under-reporting may also be a confounder.

We found seven reports on ten patients of acute pancreatitis associated with olanzapine use, in the English medical literature. Male to female ratio is 6:4. Six of these 10 patients had concomitant risk factors such as other medications, alcohol consumption or pre-existing hypertriglyceridemia, hence it is difficult to incriminate olanzapine as the only agent inciting pancreatitis in these patients. Duration of olanzapine use varied from 6 days to 60 months. Three of these patients had hypertriglyceridemia. In one of the patients, hypertriglyceridemia was shown to improve on follow-up, after olanzapine was stopped. This might suggest that hypertriglyceridemia may be one of the mechanisms for olanzapine induced acute pancreatitis.

We conclude that olanzapine is a rare cause of acute pancreatitis. Olanzapine induced acute pancreatitis is reported more often in males and can occurs 6 days to 60 months after continued intake of the drug. Most of the patients recover with cessation of olanzapine and supportive management. Although the definite mechanism of this drug-induced illness is not known, some patients have been reported to have hypertriglyceridemia. Awareness about this entity is important while treating patients with olanzapine.

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