
majority of patients succumbing to disease without treatment. Isolated MS has longer survival (median 78 months), compared to MS with synchronous intramedullary AML (median 16 months)^{1,3}. Treatment includes surgical resection followed by chemotherapy and/or radiotherapy^{1,3}. Each patient should be assessed individually, according to various prognostic factors when deciding on post-remission strategy. HSCT is considered in patients with extramedullary relapses¹.

Conclusion

We report a case of an isolated MS in ileum presenting with small bowel obstruction and a broad clinical differential diagnosis. As isolated MS is very rare; it is vital for the histopathologist to follow an algorithmic IHC panel to confirm diagnosis of MS and avoid misdiagnosis as NHL. It is imperative for these patients to have an early, definitive diagnosis so as to start treatment for AML before BM involvement.

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Influenza-associated Pancreatitis

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Influenza imposes a significant burden of disease on children worldwide, resulting in increased rates of hospitalization and substantial morbidity and mortality. Additionally, children play a pivotal role in transmitting viral infections within communities¹. Typically, children exhibit symptoms such as fever, cough, runny nose, sore throat, headache, muscle aches, and fatigue. Clinical signs commonly associated with influenza include clear nasal discharge, erythema of the nasal and throat membranes without exudate, and a temperature of $\geq 37^{\circ}\text{C}$ ¹. In children, symptoms like swollen lymph nodes in the neck and gastrointestinal issues such as abdominal pain, diarrhea, vomiting, and higher fevers are more prevalent as compared to adults¹. Following infection, common complications may include bacterial pneumonia, seizures, other bacterial infections, and exacerbations of pre-existing respiratory conditions^{2,3,4}. A study conducted by Bennet et al. in Sweden reported that 41% of children infected with the influenza virus experience various forms of complications.

Pancreatitis in the pediatric population occurs at 3-13 cases per 100,000 per year. According to a review article, approximately 8-10% of pediatric pancreatitis cases are attributed to viral infections, including hepatotropic viruses, herpes simplex virus, SAR-CoV-2, Coxsackie virus, cytomegalovirus, mumps, influenza virus, human immunodeficiency virus, varicella-zoster virus, and others⁵. While influenza infection has been documented in the literature as a cause of pancreatitis, there are only a few reported cases⁶. We present a case of acute pancreatitis in a child who tested positive for

influenza A via polymerase chain reaction (PCR) on a throat swab. The patient was treated with Oseltamivir and responded positively to the treatment.

Case Report

A 3-year-old boy presented with abdominal pain and vomiting persisting since 2 days, accompanied by one-day history of fever. On examination, he weighed 9.6 kg (<3rd percentile on the World Health Organization growth chart) and measured 86 cm in height (<3rd percentile on WHO growth chart). His heart rate was 128 beats per minute, respiratory rate 26 breaths per minute, and oxygen saturation was 96% on room air. Abdominal examination revealed mild distension with tenderness, while other general and systemic examinations were unremarkable. Laboratory investigations showed a hemoglobin level of 12.6 g/dL, white cell count (WBC) of 5,870 cells/mm³ (with polymorphs at 59.7%, lymphocytes at 31.2%, and monocytes at 7.4%), and a platelet count of 242 x 10³ cells/mm³. Additionally, the C-reactive protein level was 45.9 mg/dL, serum amylase was 774 U/L, and serum lipase was 447 U/L. Lipid profile results included a total cholesterol level of 80 mg/dL, serum triglyceride level of 50 mg/dL, high-density lipoprotein level of 33.1 mg/dL, very low-density lipoprotein level of 11.2 mg/dL, and low-density lipoprotein level of 35.7 mg/dL.

Abdominal ultrasonography revealed an enlarged and inflamed head of the pancreas, mild hepatomegaly, ascites, numerous enlarged non-necrotic mesenteric lymph nodes (with the largest measuring 1.6 cm), and an enlarged gall bladder containing sludge, multiple stones, and an edematous wall. On the second day of admission, the patient developed facial puffiness and reduced urine output. Nasopharyngeal swab PCR was positive for influenza A, while saliva PCR for mumps was negative. Tests for dengue and leptospirosis were also negative. Based on the clinical features and investigation findings, a diagnosis of acute pancreatitis secondary to influenza infection was made.

The patient was admitted to the pediatric intensive care unit, where oral intake was withheld. Treatment included oseltamivir tablets (30 mg twice daily for 5 days), continuous intravenous fluids, and analgesics. He showed improvement within twenty-four hours of treatment onset. Despite gallbladder findings, investigations for hemolysis

were negative, including normal peripheral smear, negative direct Coombs test, normal osmotic fragility test, and normal high-performance liquid chromatography.

The patient remained under supportive care for 7 days and was discharged with complete symptom resolution. A magnetic resonance cholangiopancreatography (MRCP) performed two weeks after discharge showed no biliary abnormalities, residual pancreatitis changes, and no gallbladder, biliary tract, or pancreatic duct stones. The patient continues to be monitored on an outpatient basis.

Discussion

Acute pancreatitis commonly manifests with severe abdominal pain, nausea, and vomiting⁷. In children, acute pancreatitis is a relatively uncommon yet potentially serious condition. While many cases are mild and resolve without intervention, up to one-third of patients may experience moderate to severe disease or progress to recurrent or chronic pancreatitis⁶. Causes of acute pancreatitis in children often include gallstones, anatomical abnormalities, infections, trauma, or drug-related factors⁷.

In 2023, Sarshari et al. documented three cases of acute pancreatitis associated with influenza virus⁸: a 37-year-old male who developed pancreatitis following a brief prodrome of fever, malaise, and myalgia; a 19-year-old boy who developed pancreatitis shortly after an H1N1 infection during the 2009 pandemic; and a 42-year-old female who presented with shortness of breath, epigastric pain radiating to the back, and hyperglycemia⁸. Diagnosis in all three cases was based on clinical presentation, elevated serum amylase and lipase levels, evidence of influenza infection, and response to treatment.

Additionally, in 2023, a case of hemorrhagic pancreatitis secondary to influenza was reported in a pregnant female, diagnosed postmortem⁹. Ours is the first case to be reported in a child less than five years of age.

Recent studies have demonstrated the ability of the influenza virus to infect pancreatic cells and replicate within them. The resulting acute severe immune response and overproduction of pro-inflammatory cytokines contribute to pancreatic damage⁵. Since we could not do a pancreatic biopsy in our patient and were unable to do influenza PCR on the pancreatic tissue, we cannot

Table 1: Laboratory Values through the course of illness.

Labs	Day 1	Day 3	Day 4	Day 18
Hemoglobin (g/dl)	12.6	9.9	10.8	11.7
WBC cells/mm ³	5,870	11,470	6,230	8,900
Platelet (cells/mm ³)	2,85,000	2,42,000	2,86,000	5,03,000
Total Bilirubin (mg/dL)		0.6		0.2
Direct Bilirubin (mg/dL)		0.3		0.1
ALT (IU/L)	9	11	14	14
AST (IU/L)	30	25	34	43
ALP (IU/L)	150			138
Amylase (IU/L)	774		159	
Lipase (IU/L)	442		122	
Calcium(gm/dl)	9.7	9.2		10.3
PT (sec)/INR		17/1.47		13/1.11
CRP (mg/dL)	45.9			
Serum Sodium (mmol/L)	134	141	134	139
Serum Potassium (mmol/L)	4.7	3.8	4.6	4.1
Albumin (g/dl)	4.2	6	3.4	4.6

WBC - White Blood Count, ALT - Alanine Transaminase, AST- Aspartate Transaminase, ALP - Alkaline phosphatase, PT - Prothrombin Time, INR - International Normalized Ratio, CRP - C-Reactive Protein.

be very certain on influenza virus being the cause of acute pancreatitis but the child responded to oseltamivir, suggesting that the influenza virus may be associated with acute pancreatitis in this patient.

The nucleic acid amplification test (NAAT), such as Reverse Transcriptase Polymerase Chain Reaction (RT-PCR), is considered the gold standard for diagnosing influenza due to its high sensitivity and specificity⁹. In our case, Nasopharyngeal PCR was positive for influenza A and negative for mumps. Although initial ultrasonography revealed the presence of gallstones, a subsequent magnetic resonance cholangiopancreatography (MRCP) performed after 15 days showed no evidence of biliary stones, suggesting that pancreatitis was unlikely due to a biliary stone. Additionally, liver function tests were normal in the child.

Early diagnosis of acute pancreatitis, along with nutritional support, aggressive hydration, and pain management, are the mainstays of treatment for childhood pancreatitis⁶. Prophylactic antibiotics have not been advantageous in treating pancreatitis of infectious origin¹⁰. Oseltamivir, an antiviral medication, is the primary treatment for influenza in children and should be initiated in those at high risk of complications⁹. All three

previously diagnosed patients received oseltamivir⁸, and our patient was treated similarly. All four patients showed rapid improvement upon receiving oseltamivir treatment.

Conclusion

In conclusion, although viral infections are acknowledged as a cause of pediatric pancreatitis, influenza-associated pancreatitis has been rarely documented. Long-term studies involving children are necessary to enhance our comprehension of the disease mechanism, management strategies, and preventive measures.

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Revealing the Unseen: A Huge Gall Bladder Neuroendocrine Tumor: A Rare Case Report

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Neuroendocrine tumors (NETs) are a type of heterogeneous tumors that develop from neuroendocrine cells and Kulchitsky cells that can release neurotransmitter

peptides. It was first described by Oberndorfer in 1907¹. Gastrointestinal tract (73.7%) followed by the respiratory system (21%) are the most common sites for NETs. NETs can be found in any location of the body; however, as mentioned above, they are commonly seen to involve gastrointestinal and pulmonary systems². Gall bladder neuroendocrine tumors (GB-NETs) are extremely rare, accounting for approximately 0.2% of all NETs and 2% of all gall bladder carcinomas³.

Case Report

We present a case of a well preserved (WHO performance status 1) 42-year-old lady, without co-morbidities, who came to us with complaints of a lump in the right side of her abdomen and abdominal pain for 4 months. To start with, the lump was small and had gradually progressed over 4 months to occupy the entire right side of the abdomen. This was associated with a non-radiating, dull-aching abdominal pain in the right hypochondrium, which was not associated with meals, nausea, vomiting, hematemesis, jaundice, fever or altered bowel habits. She had loss of appetite and weight loss of approximately 6 kilograms since then. On physical examination, she was pale, and a large tender hard mass, approximately 20 cm in size was palpable, occupying the right hypochondrium, epigastrium, and right lumbar region. Laboratory investigations revealed anemia, liver, and renal biochemistry were within normal limits. CA 19-9 was within normal limits. She underwent ultrasonography (USG) of the abdomen, which was suggestive of a hyperechoic exophytic right hepatic mass lesion of size approximately 20 cm involving the gall bladder wall and extending into the right paracolic gutter compressing and displacing the right kidney and adrenals (**Figure 1A and 1B**). CT abdomen was suggestive of a mass closely associated with the gall bladder, displacing the second part of duodenum and right kidney (**Figure 2A**). **Figure 2B** is suggestive of a mass occupying the right side of abdomen and displacing adjacent organs. In view of locally advanced disease, patient underwent USG guided biopsy of the mass. Histopathological examination (HPE) was suggestive of an infiltrating neoplasm composed of irregular nest of cells with pleomorphic hyperchromatic nuclei and scant cytoplasm. Immunohistochemistry