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Case Report

Internal Medicine Section

Gullo's Syndrome: A Case Report

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ABSTRACT

Benign Pancreatic Hyperenzymemia (BPH) or Gullo's Syndrome is a new entity with only few reported cases till date. It is characterized by persistently elevated pancreatic enzymes without any clinical or pathological evidence of pancreatic disease. Gullo's syndrome is a diagnosis of exclusion and clinician should be aware of various other conditions which can cause elevation of pancreatic enzymes. There are no reported cases of Gullo's syndrome from Indian subcontinent till date.

A 42-year-old lady presented to us with complaints of fever and cough for which she was evaluated and diagnosed to be having left upper zone pneumonia. However, her routine investigations showed persistently elevated serum amylase and lipase levels. She was extensively worked up for pancreatic hyperenzymemia but no pancreatic disease was detected. She was followed up for a period of one year and raised levels of serum lipase and amylase persisted even after a year.

Keywords: Benign pancreatic hyperenzymemia, CFTR mutation, Macroamylasaemia

CASE REPORT

A 42-year-old unmarried lady presented to the medical emergency with complaints of low grade intermittent fever associated with cough for the last 10 days. Cough was associated with minimal mucopurulent expectoration. However, there was no history of haemoptysis, breathlessness, chest pain or pain abdomen. On examination, she had a BMI of 18.6kg/m^2, pulse rate was 98/minute, regular, normal volume and character, Blood pressure in supine position was 120/70 mm Hg, she was febrile with a temperature of 103^{O}F and had a respiratory rate of 16/minute. Respiratory system examination showed bilateral normal vesicular breath sounds with inspiratory crepitations in left infraclavicular region. Other systemic examination was essentially normal.

Her haemoglobin was 12.1 gm/dl with a total leucocyte count of 12,000/cu mm and a platelet count of 150,000/cu mm. Serum urea, creatinine, bilirubin, transaminases, and alkaline phosphatase levels were normal. Blood sugar, total cholesterol, triglyceride and calcium levels were also normal. Chest roentgenogram showed homogenous opacity in left upper zone with air bronchogram suggesting consolidation. Sputum examination did not show any acid fast bacilli and culture was also sterile. HIV, anti HBsAg and anti HCV were non-reactive.

However, her serum amylase on the day of admission was 277 IU/L(Normal 40-140 IU/L) and serum lipase was 2281 IU/L(Normal 30-300IU/L). Blood iso-amylase level could not be done due to financial constraints. Amylase and lipase levels were monitored every alternate day and levels were persistently elevated [Table/Fig-1].

In view of significantly raised pancreatic enzymes without any symptoms, a work up for pancreatic disease was done. Ultrasound abdomen, Contrast CT (Computed Tomography) Scan of abdomen and MRCP (Magnetic Resonance Cholangio Pancreatography) were absolutely normal.

Day of Admission	Serum Amylase (IU/L)	Serum Lipase (IU/L)
Day 1	277	2281
Day 3	316	1050
Day 5	261	1051
Day 7	351	939
Day 9	256	865

[Table/Fig-1]: Monitored levels of amylase and lipase levels.

Macroamylasaemia causes chronic elevation of serum amylase levels without any pancreatic disease and is commonly associated with celiac disease, inflammatory bowel disease and autoimmune disease like systemic lupus erythematosus. To rule out macroamylasaemia, serum anti transglutaminase, anti saccharomyces and anti nuclear antibody test were done. Serum IgG4 levels were measured to rule out autoimmune pancreatitis. However, all these investigations were absolutely normal.

Serum lipase and amylase levels of her first degree relatives were also done and were found to be within normal range. She was treated for community acquired pneumonia. Empirical antibiotics, intravenous ceftriaxone and azithromycin were given. She responded to antibiotics and her fever subsided in three days. She was discharged on 10th day of admission. She was followed up for a period of one year. She never developed pain abdomen during this period. Serum amylase and lipase levels were repeated after a year, and were found to be elevated. Serum amylase was 260 IU/L and serum lipase was 764 IU/L. Repeat ultrasound abdomen was also normal.

DISCUSSION

An elevated pancreatic enzyme usually denotes pancreatic disease. However, there is a new entity called as Benign Pancreatic Hyperenzymemia (BPH) characterized by persistently elevated pancreatic enzymes without any clinical or pathological evidence of pancreatic disease. In 1996, Gullo's first described raised pancreatic enzymes in normal individuals without any pancreatic disease [1]. Later he published several papers on the same and this entity is now known after him as Gullo's Syndrome [2].

In Gullo's syndrome there is persistently raised pancreatic enzyme levels like amylase, lipase and iso-amylase without any evidence of pancreatic disease. After detection of hyperenzymemia atleast a year must pass before labelling it as Gullo's syndrome. Often enzyme levels show considerable fluctuation with transient normalization too. Almost 90-95% of these patients show raised level of all pancreatic enzymes and rarely 5-10% of this patient can have only elevated amylase or lipase levels [3]. Till date 140 cases have been documented and affect males and females in ratio of 1.5:1 [3]. BPH has been documented in children also. It can occur sporadically or in familial distribution [4,5]. Clustering of this entity

within family members has lead to the hypothesis that there could be some genetic basis for Gullo's syndrome. However, molecular mechanism behind Gullo's Syndrome is not known till date.

Patients of BPH were screened for SPINK1 and PRSS1 mutation in a study by Gullo, but no PRSS1 mutation were detected and the frequency of SPINK1 variant was similar to the general population [6]. CFTR mutation can present as asymptomatic persistent pancreatic hyperenzymemia without any pancreatic insufficiency [7]. However, there is no increase in frequency of CFTR mutation in BPH patients as compared to general population [8]. Asymptomatic pancreatic hyperenzymemia could be an early manifestation of pancreatic carcinoma (1-2% cases), especially in elderly age group. So, before labelling hyperenzymemia as benign, patient should be followed up for a period of atleast one year.

Mechanism behind fluctuation of pancreatic enzyme levels is not known till date. It is believed that there could be some cellular defect leading to leakage of enzymes, however it needs to be proven. Secretin can stimulate enzyme secretion in circulation and a study was done to look for the effect of secretin on the Wirsung's duct but it showed that change in Wirsung's duct diameter was similar to controls [9].

CONCLUSION

Patients of BPH are not at high risk for having pancreatitis episode and knowledge of this entity is crucial as it could prevent performance of complex and multiple diagnostic investigations. This case is the first reported case of Gullo's syndrome from India.

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