Elderly Lady with Ascites

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Abstract

An elderly lady with amylase-rich ascites is presented, whose isoenzyme estimation revealed salivary type amylase. Tumour hyperamylasemia is an important group among the nonpancreatic causes of elevated amylase.

INTRODUCTION

Various causes of elevated amylase have been documented apart from pancreatic cause. It has been found in acute abdominal conditions like esophageal perforations, intestinal perforations, infarctions, ruptured ectopic pregnancy and a variety of non abdominal conditions like tumours, renal insufficiency, hyperamylasemia, drugs and shock. There are two distinct isoenzyme types of amylase, p-amylase produced by pancreas and s-amylase produced by salivary glands and other non-pancreatic sources.

CASE REPORT

A 61 year old lady presented with 20 day history of productive cough with mucoid sputum, 2 weeks history of loose stools and distension of abdomen and loss of appetite. Stool frequency was 2-3 times/day and it was watery. There was no history of fever. She was suffering from ischaemic heart disease for which she was on isosorbide dinitrate for the past 6 years. There was no other significant medical history in the past. She used to consume portwine occasionally. On examination she was moderately built and nourished with stable vitals. She had mild pallor, tenderness in the left iliac fossa, umbilical hernia and moderate ascites with normal bowel sounds. There was no hepatosplenomegaly. Respiratory system examination was unremarkable except for few crepitations in the left suprascapular area. Breast examination was normal.

Her hemoglobin was 11.4g%, WBC 8,900 N 62%, L 37% ESR 120mm /1hr.LFT was Bilirubin 0.6mg/dl, Direct 0.2mg/dl, Total protein 7.7 g/dl, Albumin 3.4 g/dl AST 17U/L, ALT 17U/L ALP 139U/L. Renal functions were normal. Chest X ray was normal. Ultrasonography of abdomen showed mild hepatomegaly with moderate ascites. Transvaginal sonography was normal. Ascitic fluid analysis revealed Glucose 113mg/dl, Protein 6.1g/dl, Albumin 2.5g/dl, Amylase 12,699 U/L, Lipase 59 U/dl. Ascitic fluid WBC count was 450cells/mm³ with N 60% and L 40%. There were no bacteria in Gram stain or culture. Serum amylase was 2315U/L and lipase 134U/dl. Ascitic fluid adenosine deaminase level was 20 U/L. Ascitic fluid smear revealed few clusters, acini and singly scattered malignant polygonal cells with high N/C ratio, round to oval nucleus, vesicular chromatin and single prominent nucleolus (Fig. 1). It was positive of metastatic adenocarcinoma possible primary from GIT or ovary. CT scan of the abdomen and pelvis was normal except ascites. Oesophagogastroduodenoscopy and colonoscopy were normal. CEA level was 2.2 ng/ml (0-5); CA 125 was 293.8U/ml (0-35). Amylase isoenzyme estimation revealed 80% salivary type both in ascitic fluid and serum. A diagnosis of malignant ascites from ovarian adenocarcinoma with tumour hyperamylasemia was made. Patient was advised chemotherapy and surgery. However they were not willing for the same and got discharged.

Fig. 1 : Ascitic fluid cytology smear, papanicolaou stain, 40x magnification.
DISCUSSION

The differential diagnoses of this exudative ascites are pancreatic ascites, alcoholic cirrhosis with SBP, TB peritonitis, intestinal perforation with peritonitis, intraperitoneal carcinomatosis. Our patient consumed alcohol only occasionally and the investigations ruled out cirrhosis. There were no bacteria on Gram stain and culture ruling out any peritonitis. Ascitic fluid and sputum were negative for acid fast bacillus and chest x-ray and gastrointestinal series did not show any evidence of tuberculosis. Ultrasonography did not reveal any pancreatitis.

The finding of elevated amylase in body fluids generally leads to consideration of pancreatic cause, yet many other sources of hyperamylasemia and amylase rich ascites or pleural effusion exist. Amylase isoenzyme estimation is of extreme value in differentiating pancreatic from non-pancreatic sources of increased amylase. Tumour hyperamylasemia is an important group among the nonpancreatic causes of elevated amylase. It is reported with carcinoma ovary, lung, breast, esophageal leiomyosarcoma, stomach, colon, prostate, pancreas, parotid and renal carcinoma. Among these organs primary site of tumour is common in lung and ovary. Persistent elevation of serum amylase, salivary type isoenzyme dominant in body fluids and tumor extracts, greater amylase content in the primary and metastatic tumours than in the serum, and cellular localisation of the amylase in the tumors by immunohistochemical staining are characteristic of tumor hyperamylasemia. Amylase is usually elevated 2-10 times the normal in such cases. However, elevation over 100 times the normal are reported. Amylase levels come down with cytotoxic chemotherapy.

In conclusion, non pancreatic causes of hyperamylasemia are to be considered during the work up of ascites or pleural fluid to avoid the prolonged search for pancreatic cause. This can be facilitated by prompt estimation of amylase isoenzyme type which will divert the search to the relevant cause.

Learning points

- Several non pancreatic causes of amylase rich ascites and pleural fluid exist
- Salivary type amylase is elevated in non pancreatic causes of hyperamylasemia
- Timely amylase isoenzyme estimation is invaluable in the work up of hyperamylasemia
- Tumor hyperamylasemia is reported with cancer of ovary, lung, stomach, colon etc
- Amylase level is higher in body fluids compared to serum and is highest in primary and metastatic sites in tumor related hyperamylasemia
- Immunohistochemical stains have localised the amylase activity in the tumour cells.

REFERENCES