MACROAMYLASAEMIA IN AN ELDERLY LADY

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An 88 year old Caucasian lady was assessed at accident and emergency with one week history of increasing confusion by her daughter and increased urinary frequency and dysuria. She also reported a recent change in bowel habit (constipation) with weight loss and was awaiting an out-patient colonoscopy.

Past history includes breast carcinoma (managed with wide local excision and radiotherapy), transitional cell carcinoma of bladder (managed with intravesical chemotherapy) and benign essential tremor. There was no history of cognitive impairment. Her medications include tamoxifen and propanolol. She lived alone and was self-caring.

Clinical examination was unremarkable except for vague generalised abdominal discomfort on palpation. Initial investigations revealed a positive urine dip which subsequently grew beta-haemolytic streptococcus. Full blood count, bone profile, serum glucose, renal, liver and thyroid function were all within reference range. C-reactive protein was elevated at 50 mg/L.

A diagnosis of urinary tract infection was made. She was commenced on oral antibiotics and admitted as she was deemed unsafe for home discharge due to her confusion. A serum amylase was also requested due to her abdominal discomfort. This was raised at 2350 IU/L and persisted on a repeat sample. She was then treated as acute pancreatitis with aggressive fluid resuscitation. Clinical examination by the on-call surgical registrar suggested no evidence of acute pancreatitis. Subsequent Computerised Tomogram (pancreatic protocol) revealed a normal pancreas, sigmoid diverticular disease with normal liver, spleen, kidneys and adrenals and ovaries.

Her confusion resolved after a five-day course of antibiotic. A paired serum: urinary amylase ratio revealed a large gradient (2026: 6 IU/L; <1%); indicating probable macroamylasaemia. Other investigations include a negative myeloma screen, normal colonoscopy, normal mammogram and flexible cystoscopy. On discharge she was fully orientated but serum amylase remained elevated at 2227 IU/L.

DISCUSSION

Elevated serum amylase in most instances is diagnostic of acute pancreatitis along with appropriate clinical features. However, several other conditions are also associated with elevated amylase. These include pancreatic infection (mumps), pancreatic neoplasm, mesenteric ischaemia, intestinal
obstruction/ perforation and metabolic emergencies such as diabetic ketoacidosis. Macroamylasaemia should be suspected in an asymptomatic patient with hyperamylasaemia.

Macroamylasaemia is part of a spectrum of immunoglobulin-complexed enzyme disorders characterised by circulating complexes of immunoglobulins linked to normal amylase. Its large molecular size impairs renal filtration and subsequently the amylase: creatinine ratio is typically less than 1%. (1)

This phenomenon is thought to occur in approximately 2.5% of patients with raised serum amylase level. (1) Although aetiology is unknown; it has been associated with: advanced age (2), rheumatoid arthritis (3), coeliac disease (4) and several malignancies such as myeloma (5), breast (6) and ovarian (7). Various techniques have been described to confirm the diagnosis. These include measuring serum: urinary amylase ratio, polyethylene glycol precipitation test and gel filtration chromatography (8). Serum lipase level can be helpful in excluding pancreatic pathology.

Macroamylasaemia is a benign condition that requires no treatment and may be transient. (9) It does not manifest significant clinical features. However it should form part of the differential diagnoses in patients with hyperamylasaemia without clinical features of pancreatitis to avoid unnecessary investigations.

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REFERENCES