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Atrophic pancreas following immunotherapy

IMAGES IN MEDICINE

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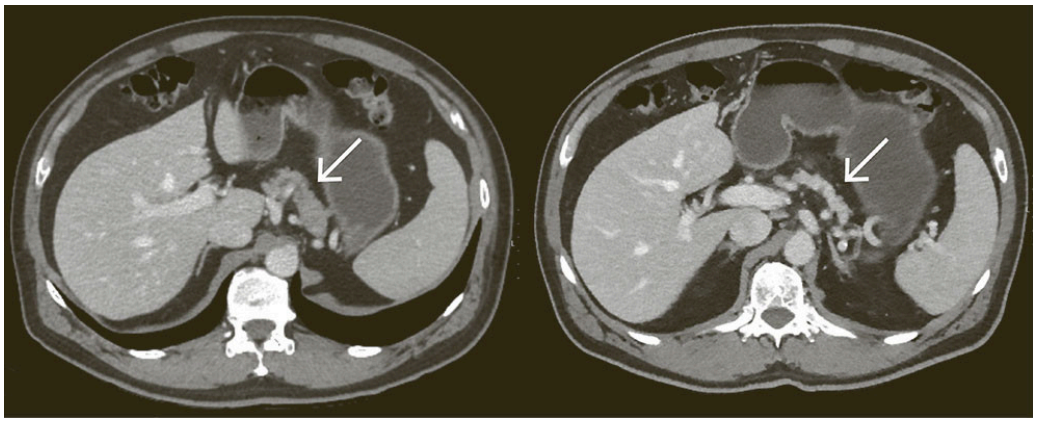

The CT image on the left shows an axial cross-sectional image of the abdomen with a normal-appearing pancreas (arrow) in a man in his fifties with malignant melanoma, taken three weeks before initiation of immunotherapy with nivolumab, a monoclonal antibody that blocks the PD-1 receptor. Due to new-onset steatorrhea and a 10 kg weight loss, a repeat CT examination was performed seven months after completion of treatment (image on the right), which demonstrated new-onset atrophy of the pancreas (arrow). Further investigations showed reduced levels of pancreatic enzymes: serum amylase 3 U/L (reference range 10–65), serum lipase 8 U/L (13–60) and faecal elastase < 15 µg/g (> 200), consistent with exocrine pancreatic insufficiency. Endocrine pancreatic function was normal: HbA1c 41 mmol/mol (20–42) and fasting C-peptide 431 pmol/L (375–1,480). The patient had no known pancreatic disease or history of harmful alcohol consumption.

Cancer immunotherapy is associated with immune-related adverse events that can potentially affect any organ system, but exocrine pancreatic insufficiency is uncommon (1–3). The underlying pathogenesis remains unclear, but activation of CD8-positive T cells with subsequent autoimmune destruction of exocrine pancreatic tissue may play a role.

The patient was started on pancreatic enzyme replacement therapy. At an eight-week follow-up, body weight had increased by 4 kg, and stool consistency and frequency had normalised. Diarrhoea following immunotherapy is often – but not always – attributable to colitis, and in cases of steatorrhea, exocrine pancreatic insufficiency should be considered as a differential diagnosis.

The patient has consented to publication of the article.

The article has been peer-reviewed.

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