A rare case of gastric mixed adenoneuroendocrine carcinoma (MANEC) with gastric *Helicobacter pylori*-negative mucosa-associated lymphoid tissue (MALT) lymphoma

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DESCRIPTION

A 47-year-old African-American man presented to the emergency department with upper abdominal pain, nausea and vomiting. His symptoms were aggravated by eating. He reported 32 kg unintentional weight loss over 2 months’ period. Abdominal examination revealed tenderness in the epigastric region. Abdominal CT scan showed mural wall thickening involving the gastric antrum and pylorus (figure 1). Subsequent oesophagogastroduodenoscopy (EGD) revealed a large mass occupying the gastric antrum (figure 2). Initial biopsy from the gastric mass showed poorly differentiated adenocarcinoma.

The patient underwent partial gastrectomy with gastrojejunostomy and the gastric specimen was examined. There was a transmurally invasive adenocarcinoma that has a remarkable variety of cell types and growth patterns, including tubular, mucinous, clear cell and a microglandular component (figure 3). The immunohistochemical stains were positive for monoclonal antibody-31 and cytokeratin-7, indicating adenocarcinomatous differentiation, and clearly positive for neuroendocrine markers chromogranin and synaptophysin (figure 4). Therefore, this area has neuroendocrine as well as adenocarcinomatous differentiation, qualifying this neoplasm as mixed adenoneuroendocrine carcinoma (MANEC).

Gastric MANEC is a rare form of mixed exocrine-endocrine tumour with each component representing at least 30% to fulfil the diagnosis. These tumours were recently recognised in 2010 by the WHO classification of tumours as a separate entity. Recognition of MANEC is an important step since these tumours overall carry a poor prognosis and early treatment plays a vital role to improve survival.

*Helicobacter pylori*-negative gastric MALT lymphoma comprises only 10% of gastric MALT lymphoma with the remaining developing secondary to *H. pylori* infection. The proposed aetiological factors in this form of tumour are infection with...
Images in...

Figure 2  Upper gastrointestinal endoscopy showing a mass in the gastric antrum (A. B. C: different views).

Figure 3  Sections of invasive adenocarcinoma showing a variety of cell types and growth patterns, including (A) poorly differentiated adenocarcinoma (H&E, X400); (B) adenocarcinoma showing mucinous differentiation (H&E, X100); (C) microglandular pattern (H&E, X100); (D) microglandular pattern (H&E, X400).

Figure 4  An area of the neoplasm showing neuroendocrine as well as adenocarcinomatous differentiation by immunohistochemical staining, including (A) monoclonal antibody-31 stains both pure adenocarcinomatous area and an area of microglandular differentiation (immunoperoxidase, X40). (B–D) The microglandular area only shows expression of cytokeratin-7, synaptophysin and chromogranin, respectively (immunoperoxidase, X40).

Learning points

► Gastric mixed adenoneuroendocrine carcinoma (MANEC) is a rare and aggressive type of cancer and was included in the updated WHO classification of digestive system in 2010. Many cases, therefore, went unreported prior to this update.

► Helicobacter pylori-negative gastric mucosa-associated lymphoid tissue lymphoma can potentially be associated with MANEC tumour.

► The aggressive behaviour of gastric MANEC is largely secondary to characteristics of the neuroendocrine component and early detection and treatment can play a vital role to improve survival.

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only reported case up to date of gastric MANEC with H. pylori-negative gastric MALT lymphoma.

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Contributors BK and MO planned, designed, wrote and critically revised the manuscript. They had an important role to facilitate the work between different authors. They also did the literature review. They also participated in images preparation. DC and GB wrote and critically revised the manuscript. DC also did the literature review. He also participated in images preparation and figures caption and pathological description. GB also participated in images preparation and selection. He played a vital role in writing the learning points.

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REFERENCES

