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Role of immunohistochemical analysis in the diagnosis of gastric carcinosarcoma, a rare tumour — case report

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ABSTRACT

Carcinosarcoma is a malignant tumour that has carcinomatous and sarcomatous components occurring rarely in the stomach with only a handful of case reports, mainly from Japan. We report a case of carcinosarcoma in a fifty-two-year-old female with clinical and histopathological features. The patient underwent complete workup followed by surgical resection. Macroscopically, the tumour was large and ulcerating. Microscopically, it was a carcinosarcoma with myogenic differentiation. Immunohistochemical analysis was done, which led to the diagnosis of gastric carcinosarcoma.

Carcinosarcoma can mimic an adenocarcinoma clinically, and making a diagnosis on the basis of endoscopy or radiology alone is not possible. Our case report highlights the importance of immunohistochemical analysis in the diagnosis of gastric carcinosarcoma.

Key words: carcinosarcoma, gastric, pathology, immunohistochemistry

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Introduction

Carcinosarcoma generally involves uterus, breast, thyroid, lung, and upper gastrointestinal (GI) system. In the GI tract it is frequently seen in oesophagus and rarely in stomach [1–4]. Gastric carcinosarcoma is a rare biphasic tumour that comprises both carcinoma and sarcoma components.

The main endoscopic characteristics are marked thickening of gastric wall and polypoid or ulcerative morphology [2, 5]. It is confirmed by using haematoxylin and eosin stain and immunohistochemical analysis [5].

We report a case that is not only a rare tumour, but also the objective is to highlight the significance of immunohistochemical analysis in reaching the diagnosis.

Case report

Our patient, a 52-year-old female, reported with a year-long history of epigastric pain, loss of appetite

and unquantified weight loss. The patient was frail and had a palpable epigastric mass on examination.

Labs showed microcytic hypochromic anaemia and electrolyte abnormalities. Endoscopic examination revealed a polypoid gastric tumour involving body, antrum, and pylorus. A computed tomography (CT) scan was obtained, which demonstrated a large mass with central ulceration and necrosis involving the greater and lesser curvature as well as within the antrum with multiple perigastric lymph nodes making it a clinical stage T3N2 gastric tumour.

Initial biopsy showed carcinosarcoma with myogenic differentiation. The epithelial component showed tubules lined by marked atypical cells surrounded by a mesenchymal component comprising bundles of spindle cells (Fig. 1A). Immunohistochemical analysis showed positive staining for epithelial membrane antigen (EMA) and desmin (Fig. 1B and 1C) whereas cytokeratin was focal positive (Fig. 1D).

Due to upper gastrointestinal bleeding, emergent subtotal gastrectomy Billroth type 11 was done. Histopathology showed carcinosarcoma with myogenic differ-

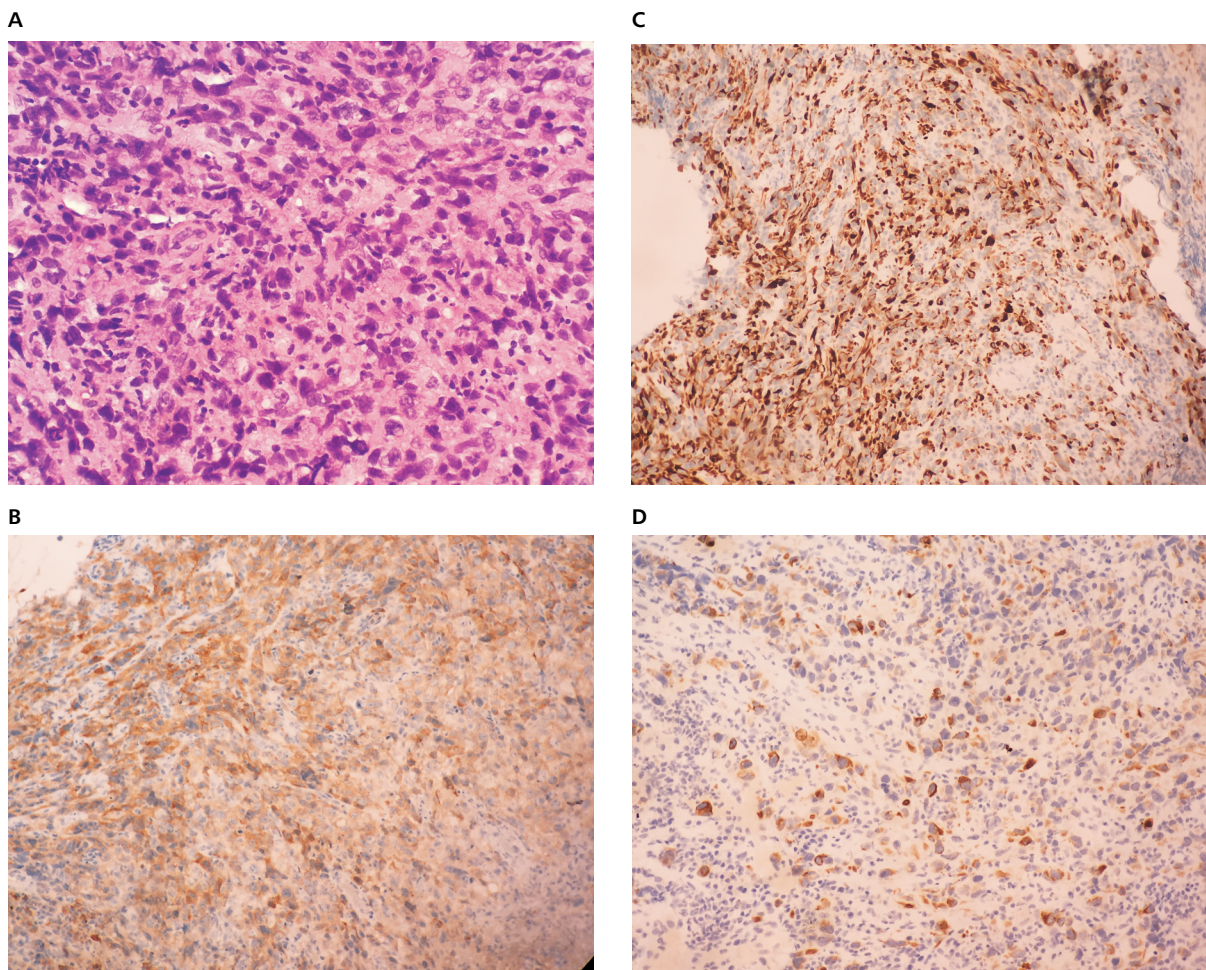


Figure 1A. Tubules lined by marked atypical cells surrounded by a mesenchymal component comprising bundles of spindle cells; B. Positive staining for epithelial membrane antigen (EMA); C. Positive staining for desmin; D. Focal positive cytokeratin

entiation. Four out of 16 lymph nodes were metastatic, making it a pathological stage of pT1bN2. Immunohistochemical analysis showed negative CD117, DOG 1 while CAM 5.2 and cytokeratin were patchy positive.

This led to a final diagnosis of gastric carcinosarcoma. The patient was discussed by a multi disciplinary team and referred for adjuvant treatment prior to which we ordered a post operative scan which showed new lymph nodes. Excisional biopsy of supraclavicular node showed necrotising granulomatous inflammation. The patient was started on anti-tuberculous therapy. Soon after that she was admitted with florid peritoneal disease and deteriorating clinical condition and passed away.

Discussion

Carcinosarcoma is defined by the World Health Organisation as a malignant tumour with intimately mixed epithelial and mesenchymal elements of a type

ordinarily found in malignancy of adults [1, 3]. Gastric carcinosarcomas are relatively rare [2, 4]. The median age is 62 years and it is more common in men [1].

The first case of carcinosarcoma was reported in 1904, while gastric carcinosarcoma was reported first in 1991 [2]. Only 56 cases have been reported so far, mostly in Japan. Most patients have a poor outcome due to advanced stage at presentation, with a mean survival of 10–15 months despite lower rate of metastasis [6].

Initial clinical presentation is mostly similar to gastric carcinoma. Endoscopy generally demonstrates polypoid morphology with ulceration in the centre [6]. Distinguishing between adenocarcinoma and carcinosarcoma on the basis of endoscopy and radiology is not possible [2].

Conventional haematoxylin and eosin staining and immunohistochemical analysis makes the histological confirmation [2, 3]. For the carcinomatous components, stains with high sensitivity are carcinoembryonic

antigen (CEA), epithelial membrane antigen (EMA), pancreatin, chromogranin A, CD 56, and synaptophysin. Whereas, for the sarcomatous component, the stains are desmin, vimentin, and alpha-smooth muscle actin [2, 7].

Treatment comprises radical, subtotal, or total gastrectomy. Standard treatment is D2 gastrectomy, with a good cure rate [3]. However, generally the prognosis of gastric carcinosarcoma is poor with an overall survival time of 10–15 months and with a recurrence rate of 50% in the first year after surgery [7].

Our patient unfortunately did not get a chance to undergo adjuvant therapy and succumbed to the florid tuberculosis.

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