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Case Report

A Very Rare Case of Pancreatic Acinar Variant of Gastric Adenocarcinoma with Review of the Literature

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Abstract

A pancreatic acinar variant of gastric adenocarcinoma is a very rare presentation, and only six cases have been reported worldwide. A 55-year-old male came with complaints of vomiting and weight loss. By PET-CT, a growth was found in the gastric antrum. Distal gastrectomy was done and a histopathology report of a pancreatic acinar variant of gastric adenocarcinoma was done.

Key words: Biopsy, Gastric adenocarcinoma, Pancreatic acinar variant

INTRODUCTION

Adenocarcinoma of the stomach is a malignant epithelial neoplasm of the gastric mucosa, with glandular differentiation. It is a common malignancy of the stomach. There are seven different subtypes mentioned in the WHO, and new subtypes are being studied in various institutes. A pancreatic acinar variant of gastric adenocarcinoma is a rare new variant with classic histopathological features. These patients are associated with poor prognosis.

CASE REPORT

A 55-year-old male patient of Northeast Indian origin presented with complaints of vomiting after intake of food and subsequent significant loss of around 9 kg weight. An upper GI endoscopy revealed an ulceroproliferative growth in the antrum. A biopsy was taken, which showed a poorly differentiated adenocarcinoma.

The patient was subjected to a PET-CT, and a hypermetabolic malignant mass was found in the antrum which was seen extending into the first part of the duodenum. Radiologically, the pancreas showed no abnormalities, and the laboratory tests were normal. The patient underwent distal gastrectomy with D2 dissection, and the specimen was sent for histopathological evaluation.

On gross examination, an ulceroinfiltrative gray-white firm to the hard lesion was present in the antral region measuring 5.5 × 5 × 1.7 cm, extending up to the muscularis propria. Multiple lymph nodes from Level I to Level XII were sent separately. The specimen was adequately sampled according to standard guidelines.

The microscopy was reported according to the College of American Pathologists protocol. The lesional site showed neoplastic cells invading into the muscularis propria. The neoplastic cells showed three growth patterns: Acinar (50%), glandular (30%), and solid (20%). The acinar areas showed a moderate to abundant eosinophilic cytoplasm, and the nuclei were round to oval with finely dispersed chromatin and indistinct nucleoli. The glandular element

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consisted of columnar to cuboidal cells with scant eosinophilic cytoplasm and pleomorphic nuclei, increased nuclear-cytoplasmic ratio, and prominent nucleoli. Brisk mitosis (6/10 HPF) was noted. The adjacent gastric mucosa showed no dysplastic changes. The resected margins and serosa were free of tumor. Regional lymph nodes examined to show no involvement by tumor. Perineural and lymphovascular invasion was not identified.

The possible H&E differentials were hepatoid variant of poorly differentiated adenocarcinoma, parietal cell carcinoma, and pancreatic acinar variant of poorly differentiated adenocarcinoma. Immunohistochemistry for alpha-fetoprotein was negative which ruled out hepatoid adenocarcinoma. EMA was positive which ruled out parietal cell carcinoma. Hence, a final diagnosis of Grade 3 poorly differentiated pancreatic acinar variant of gastric adenocarcinoma pT2 pN0 was given, and margins were free of tumor [Figures 1-4].

DISCUSSION

Gastric carcinoma is a common cancer worldwide. Usually, four common variants are recognized: Tubular adenocarcinoma, papillary adenocarcinoma, mucinous adenocarcinoma, and signet ring cells carcinoma. Other rare variants include adenosquamous cell carcinoma, squamous cell carcinoma, mixed adenocarcinoma-carcinoid, small cell carcinoma, choriocarcinoma, endodermal sinus tumor, embryonal carcinoma, and hepatoid adenocarcinoma.[1] The case mentioned above, a pancreatic acinar variant of adenocarcinoma is rarer variant with only six cases being reported worldwide.[2]

The tumor cells which are arranged in acini may be cuboidal to columnar cells with a moderate amount of

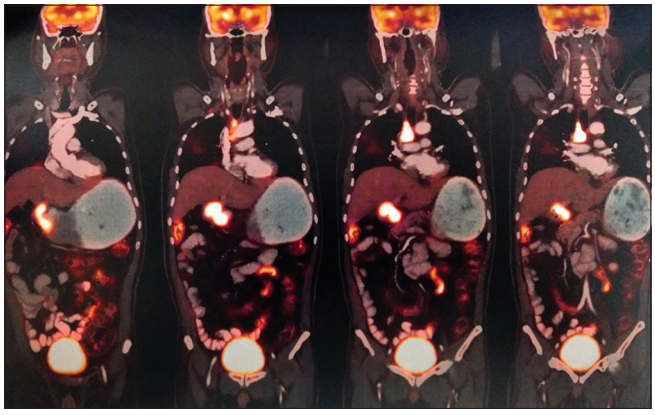

Figure 1: PET-CT shows a hypermetabolic malignant mass in the antrum of the stomach extending into the first part of the duodenum

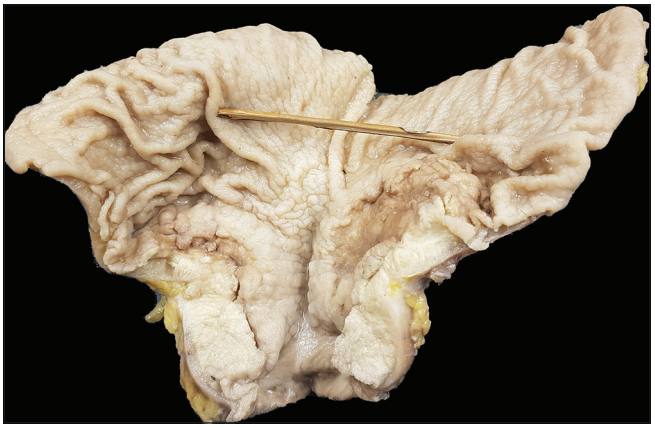

Figure 2: Gross of a distal gastrectomy with D2 dissection specimen showing a gray-white, solid, firm, ulcerative, and infiltrative lesion measuring 5.5 × 5 × 1.5 cm

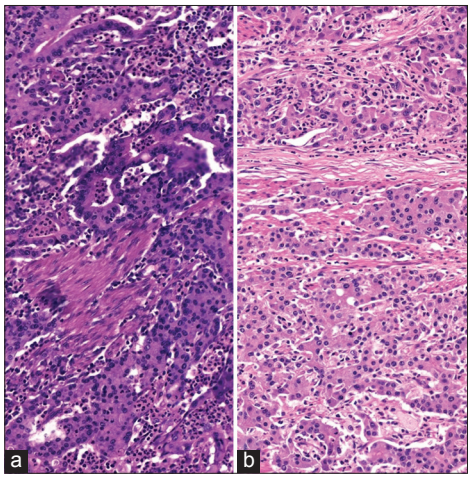

Figure 3: (a) Poorly differentiated neoplastic cells showing vague glandular patter ×40. (b) Neoplastic cells with abundant eosinophilic cytoplasm arranged in the form of acini ×40

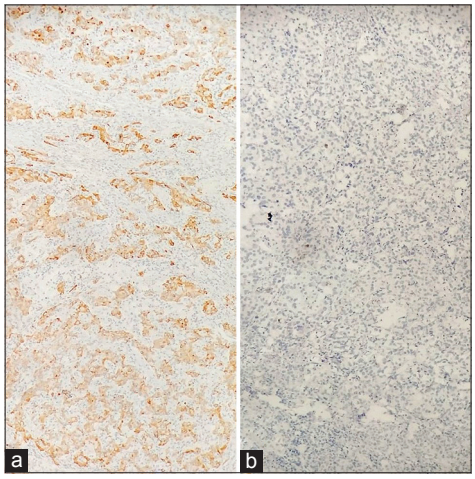

Figure 4: (a) Immunohistochemistry, ×10, EMA shows membrane positivity in the neoplastic cells. (b) Immunohistochemistry, ×10, AFP is negative in the neoplastic cells

eosinophilic cytoplasm, round to oval nuclei showing pleomorphism. Few of them showing prominent nucleoli.[3] The adjacent gastric mucosa can show intestinal metaplasia or features of chronic gastritis. The tumor cells may arise from pancreatic heterotrophy in the gastric mucosa, but it is questionable.[4] The extra-pancreatic acinar cell carcinoma is very rare.[2] There can be congenital acinar metaplasia of the gastric mucosa which can differentiate into pancreatic acinar cells and can later turn malignant.[2]

The tumor cells express pancreatic exocrine enzymes and can be detected by immunohistochemistry. They express predominantly trypsin and other enzymes such as chymotrypsin, alpha-1-antichymotrypsin, and lipase may also be expressed.[3,5] Another diagnostic feature is the presence of zymogen granules which are homogeneous dense granules seen electron microscopy.[3] The prognosis of this case is not known due to the limited number of cases studied.[2,5]

CONCLUSION

A pancreatic acinar variant of adenocarcinoma is a rare variant which can be diagnosed by H&E and immunohistochemistry features. The prognosis of this variant is not known due to the scarcity of published cases. However, most of the cases are associated with early metastasis; thus, it can have a poor prognosis.

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