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Gastric Adenocarcinoma with Choriocarcinomatous Differentiation Presenting As Greater Omental Mass.

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ABSTRACT

Choriocarcinomas are usually of gestational, intrauterine and gonadal in origin. Nongestational and nongonadal choriocarcinoma arising in stomach is very rare and has got a bad prognosis with tendency for early metastasis.We present a case of 55 years old male with abdominal pain for one week duration. Clinical examination revealed a mass lesion above the umbilicus. CT scan showed 14 x 11 cm mass in the greater omentum adherent to greater curvature of stomach and transverse colon. Clinically intraperitoneal bleeding was suspected and emergency laparotomy was done. 250 ml of blood collected from peritoneal cavity and the mass was resected along with wedge gastrectomy , transverse colectomy and omentectomy. Histopathological diagnosis was gastric adenocarcinoma with choriocarcinomatous differentiation. Out of three lymphnodes, one showed complete replacement by tumor deposits. Pancytokeratin and βHCG immunohistochemistry markers were positive.

Keywords: Adenocarcinoma, Choriocarcinoma, Gastric Tumor.

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INTRODUCTION

Gastric adenocarcinoma usually present with tubular pattern or as signet ring cell carcinoma. Choriocarcinomatous differentiation in gastric adenocarcinoma is very rare, aggressive and has got a poor prognosis [1]. Primary gastric choriocarcinoma accounts for about 0.08 % of all gastric cancers [2]. Choriocarcinoma is a highly aggressive malignant tumor of trophoblastic cell origin. Usually these tumors arise from uterus and gonads but can also arise in the mediastinum and retroperitoneum [3]. We report a case of gastric adenocarcinoma with choriocarcinomatous differentiation presented as a greater omental mass.

CASE REPORT

A 55 years old male presented with abdominal pain for one week duration. Clinical examination revealed a mass lesion above the umbilicus. CT scan showed 14 x 11 cm mass in the greater omentum between stomach and transverse colon. Other intraabdominal organs were normal. Clinically intraperitoneal bleeding was suspected and emergency laparotomy performed. Intraoperatively a mass was identified between the stomach and transverse colon adherent to greater curvature of stomach. 250 ml of blood collected from peritoneal cavity and the mass was resected along with wedge gastrectomy , transverse colectomy and omentectomy.

Gross specimen consisted of an omental mass measuring 14 x 11 x 6 cm firmly adherent to a wedge of gastric wall measuring 6 x 2.5 cm with an ulcer measuring 2 x 1 cm surrounded by thickened mucosa (Fig-1). The mass was also attached to a segment of transverse colon measuring 12 cm in length. Lumen of transverse colon grossly unremarkable. Cut section of the omental mass showed brownish areas and necrosis with gross continuity with the gastric lesion (Fig-2). Three lymphnodes were procured from the omentum larger one measuring 1.5 x 1 cm and smaller measuring 0.5 x 0.5 cm.

Microscopy of gastric wall showed ulceration , intestinal metaplasia , areas of dysplasia and intestinal type adenocarcinoma (Fig-3) invading through the muscularis propria and serosa.The tumor was extending into the omental mass which showed similar features of intestinal type adenocarcinoma along with choriocarcinomatous differentiation. Choriocarcinomatous component showed cytotrophoblasts and syncytiotrophoblasts along with extensive areas of hemorrhage and necrosis (Fig-4,5). Transverse colon microscopically free from tumor. Out of three lymphnodes one showed complete replacement by tumor deposits. Immunohistochemistry (IHC) for pancytokeratin (Fig-6) and βHCG (Fig-7)were positive. The histopathological diagnosis was gastric adenocarcinoma with choriocarcinomatous differentiation.

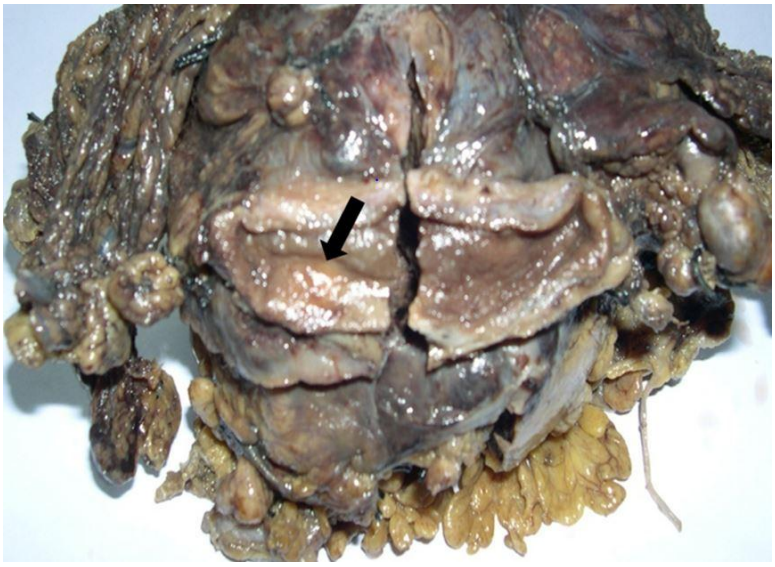

Figure 1: Shows an omental mass adherent to a wedge of gastric wall with an ulcer (thick arrow) surrounded by thickened mucosa.

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Figure 2: Cut section of the omental mass was brownish with areas of necrosis.

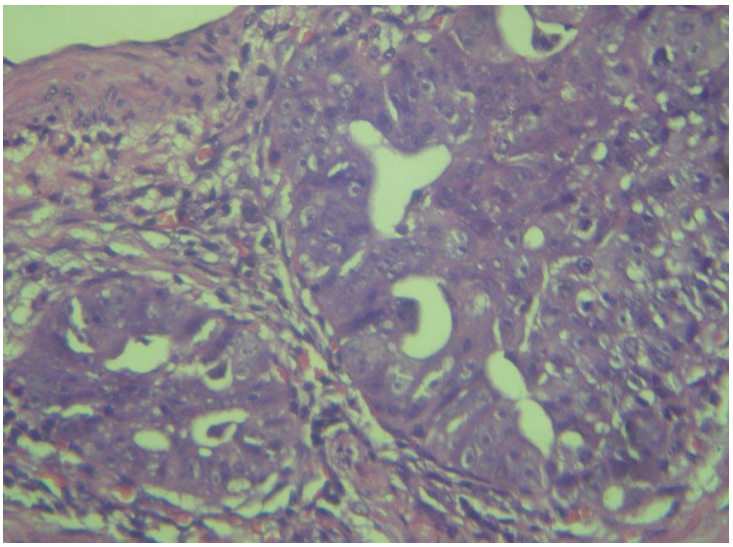

Figure 3: Microphotograph from the gastric ulcer show irregular glands lined by malignant cells with loss of polarity and marked pleomorphism (H&E stain, 40x).

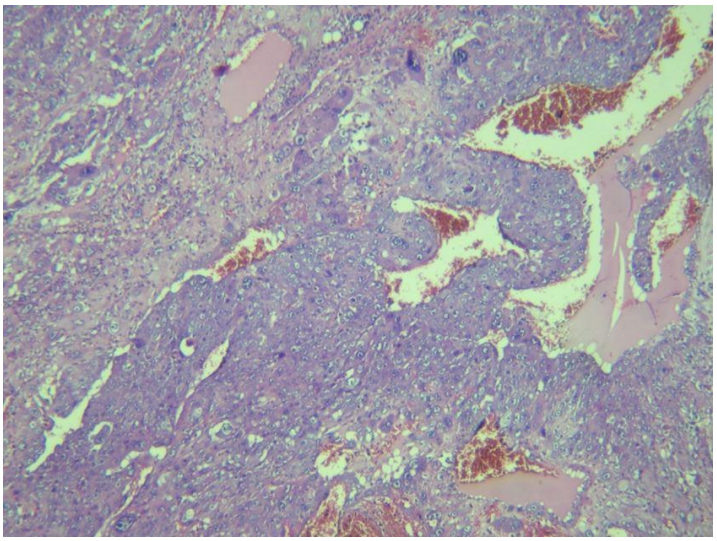

Figure 4: Microphotograph from the omental mass show malignant cells with marked pleomorphism arranged in sheets and clusters along with areas of hemorrhage (H&E stain,10x).

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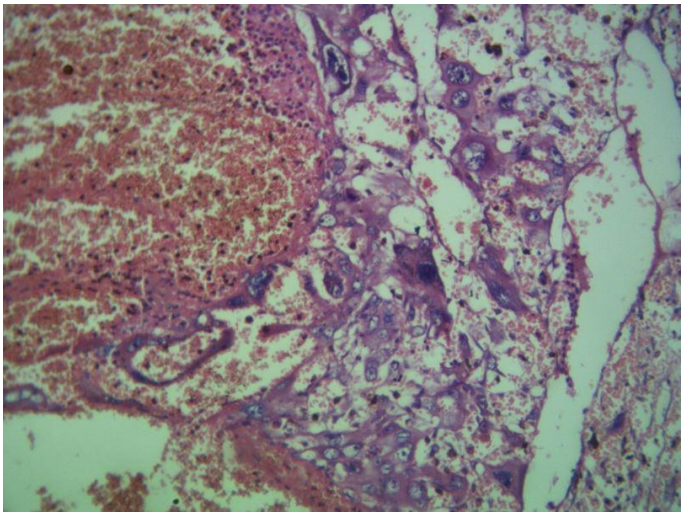

Figure 5: High power microphotograph (H&E stain, 40x) from omental mass show malignant cells forming syncytium with areas of hemorrhage.

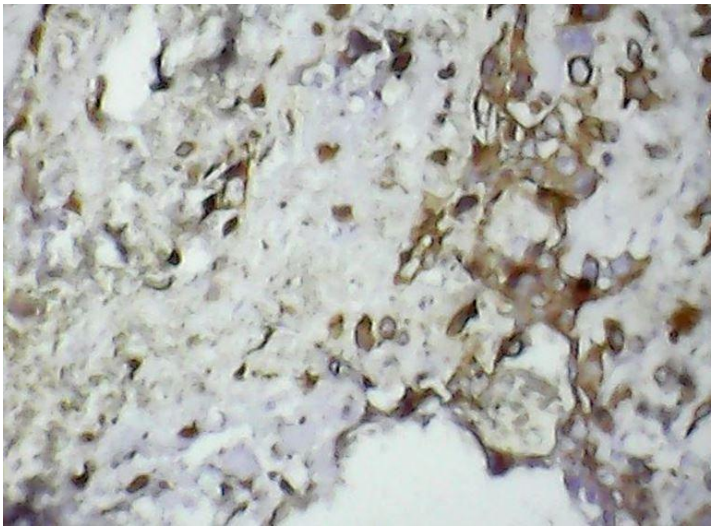

Figure 6: Immunohistochemistry for pancytokeratin show strong membrane positivity of some tumor cell cluster in the omental mass (40x).

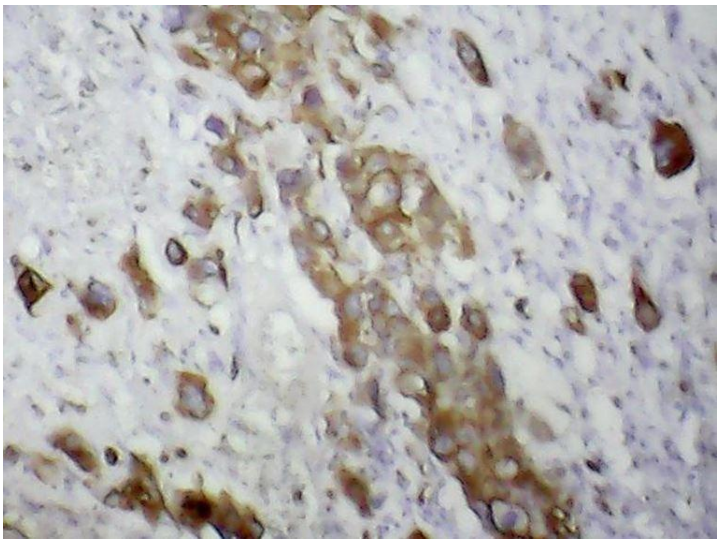

Figure 7: Immunohistochemistry for β HCG show strong cytoplasmic positivity (40x).

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Postoperatively, ultrasonogram of both testicles showed normal echotexture. Serum βHCG was not done preoperatively in this patient as choriocarcinoma was not suspected clinically and emergency laporatomy was done because of bleeding in to the peritoneal cavity. Serum βHCG was done three weeks after surgery and was with in normal limits.

DISCUSSION

Table 1: Characteristics of gastric adenocarcinoma with choriocarcinomatous differentiation in the literature

Study	Age/ sex	Location	βHCG level in serum	Surgery	Size (cm)	Histology	Metastasis	Ascites	Survival post op (months)
Dye DW et al[7] (2005)	35/F	Gastric cardia	↑	Partial gastrectomy with chemotherapy	4	Adenocarcinoma with choriocarcinoma	Lung Lymphnode (1)	Absent	12 months follow up uneventful
Yoon JH et al[1] (2008) (case1)	62/ M	Pylorus	↑	Subtotal gastrectomy With chemotherapy	7	Adenocarcinoma with choriocarcinoma	Lung Liver (Multiple)	Absent	16
Yoon JH et al[1] (case2)	45/ M	Lesser curvature	↑	Endoscopic biopsy and chemotherapy	Huge	Adenocarcinoma with choriocarcinoma	Lung Liver	Absent	12
Hirano Y et al[6] (2008)	85/ M	Cardia & body	↑	Total gastrectomy, lymphnode dissection and partial hepatectomy	10	Adenocarcinoma with choriocarcinomatous & neuroendocrine differentiation	Liver Lymphnode	Absent	6 weeks
Pai MR et al[2] (2009)	69/ M	Pylorus with extension to posterior wall of 1st part of duodenum	↑	Subtotal gastrectomy With gastrojejunostomy and chemotherapy	5	Adenocarcinoma with choriocarcinoma	Liver	Absent	-
Fujiyoshi et al[3] (2012)	73/ M	Pylorus	↑	Partial gastectomy, Partial hepatectomy, Partial pancreatectomy ,splenectomy & chemotherapy	20x20x20	Adenocarcinoma with choriocarcinoma	Liver (Multiple)	Positive for adenocarcinomatous deposits	11
Gunduz S et al[4] (2012)	57/F	Antrum	↑	Subtotal gastrectomy	_	Adenocarcinoma with choriocarcinoma	Liver & right iliac bone	Absent	24 months uneventful
Waseda Y et al[9] (2012)	68/ M	Anterior wall of body	↑	Radical gastrectomy, lymphnode dissection, Billroth II gastrojejunostomy and chemotherapy. Later hepatectomy	-	Adenocarcinoma but choriocarcinoma component in liver biopsy	Liver Lymphnodes (2)	Absent	2 years uneventful
Takahashi K[10] (2013)	65/F	Posterior wall of upper body	↑	Total gastrectomy, lymphnode dissection, distal pancreatectomy,splenectomy & enucleation of liver nodule with chemotherapy & radiofrequency ablation of liver metastasis.	10 x 8	Adenocarcinoma with choriocarcinoma	Liver & lymphnode	Absent	10 years
Present case	55/ M	Greater curvature	Preop not done , 3rd week postop normal	Resection of mass with wedge gastrectomy , transverse colectomy & omentectomy	14x11x6	Adenocarcinoma with choriocarcinoma	Lymphnode (1)	Hemoperitoneum	Post op period uneventful for 6 months

Choriocarcinoma is an aggressive malignant neoplasm most commonly seen in the uterus related to pregnancy. They also occur in ovaries and rarely in testis. Extragonadal nongestational choriocarcinoma develop rarely in the mediastinum, retroperitoneum, liver, gallbladder, pineal gland, urinary tract system,

stomach and nose [2]. Choriocarcinoma metastatic to the stomach has been reported but primary gastric choriocarcinoma is extremely rare [3]. Primary gastric choriocarcinoma (PGC) occurs in both sexes (male to female ratio = 2.3:1), mean age for the male is 62.4 years and the female is 54.8 years. This type of cancer was first described by Davidsohn in 1905 [4]. It can occur either in a pure form or in association with adenocarcinoma of the stomach. Pure choriocarcinoma arises from the HCG producing cells of the normal gastric mucosa. Hartz and Ramirez believed that this rare tumor developed from a gastric teratoma [5]. Many theories has been proposed such as displaced gonadal anlage, development from teratoma or a delayed metastasis from unidentified intrauterine primary lesion [6]. The retrodifferentiation theory proposed by Pick has been generally accepted [2]. According to this theory the gastric adenocarcinoma cells retrodifferentiate to the embryonal ectoderm level and develop the ability to produce trophoblasts. They also acquire the functional ability to secrete βHCG which can cause morning sickness in women and gynaecomastia in men [7]. Liu et al have reported that PGC has got the genetic characteristics of both adenocarcinoma and pregnancy choriocarcinoma [1]. Histologically they show transition from adenocarcinomatous areas to choriocarcinomatous areas which can be confirmed by IHC for pancytokeratin and βHCG [8]. Gastric adenocarcinoma with neuroendocrine, yolk sac and hepatoid differentiation have also been reported [6].

According to Kobayashi et al, gastric choriocarcinoma developed mostly (41%) in the lower 1/3 of stomach, along with adenocarcinoma in 70% of cases and most patients had metastasis at the time of surgery [1]. The choriocarcinomatous component has a tendency to spread through blood vessels and adenocarcinomatous component spread through lymphatics. Metastasis to lymphnodes were most common(87%) followed by liver (45%), peritoneum(23%) and lung (8%) [4]. To say that the stomach is the primary site, choriocarcinoma in ovaries, testis , uterus and retroperitoneum should be ruled out. Table – 1 show comparison of our case with the literature.

The prognosis of this tumor is very poor with high mortality and the survival is less than one year after diagnosis [2]. Chemotherapy regimens as used in gestational choriocarcinoma are not -effective in gastric choriocarcinoma [10]. Early diagnosis with surgical resection and appropriate chemotherapy will be helpful in treating the patient.

CONCLUSION

Identification of this tumor with uncommon and unfavourable differentiation both clinically and pathologically is highly significant for the proper treatment of these patients, since the prognosis of this condition is extremely bad. Whenever highly hemorrhagic and bulky tumor is noticed in gastric area the possibility of choriocarcinomatous differentiation should be suspected and appropriately investigated. The characteristic histology, immunohistochemistry and elevated serum β-HCG level will help in the diagnosis of this tumor.

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