

Case Report

Signet Ring cell carcinoma of stomach in 13 years old boy

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Abstract

Signet ring cell carcinoma (SRC) of stomach is uncommon in less than 20 year of age. It mainly occurs in elderly people. We reported a rare case of signet ring cell carcinoma of stomach in a 13 year old boy who diagnosed by the upper gastrointestinal endoscopy and on histopathological examination which showed prominent signet ring features.

Keywords: Signet ring cell carcinoma, stomach, gastrointestinal endoscopy, epigastric pain

1. Introduction

Signet ring cell carcinoma is an epithelial malignancy characterized by the histologic appearance of signet ring cells. It is a form of adenocarcinoma¹. Signet ring cell carcinoma of the stomach is characterized by its poor prognosis and potential to infiltrate the wall of stomach². Stomach or gastric cancer can develop in any part of the stomach and may spread throughout the stomach and to other organs; particularly the esophagus, lungs and the liver. It is a disease with a high death rate (~800,000 per year) making it the second most common cause of cancer death worldwide after lung cancer.³ It is more common in men and in developing countries^{4,5}. Gastric cancer shows a male predominance in its incidence as up to three males are affected for every female. Estrogen may protect women against the development of this cancer form⁷. A very small percentage of diffuse-type gastric cancers are thought to be genetic.⁸

We reported an extremely uncommon case of thirteen year old boy with adenocarcinoma.

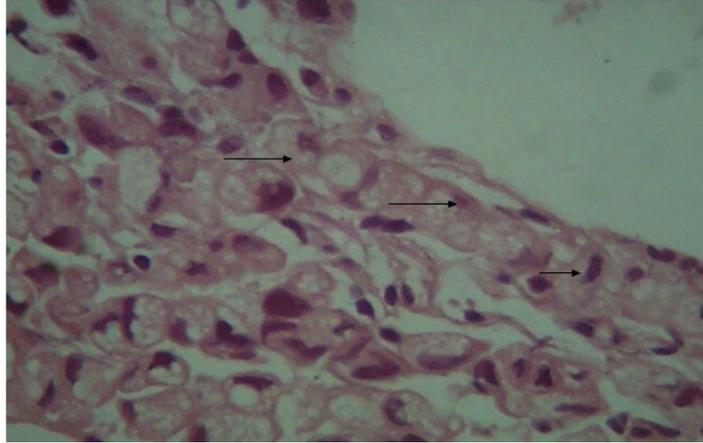
2. Case Report

A 13 year old boy presented in Emergency Room of Capital Development Authority (CDA) Hospital, Islamabad, Pakistan, with complaints of epigastric pain, recurrent vomiting, low-grade fever, weight loss of 3 kg, anorexia and fatigue for last six months. He was admitted in medical department. His past medical and surgical history is not significant. He did not take any medication except for vomiting. He denied family history of cancer and belongs to poor family. On examination patient was thin, weak and mild epigastric distension present, there was no lymphadenopathy while other systems were unremarkable. Laboratory values revealed an iron deficiency anemia with hemoglobin of 10 gm/dL and serum ferritin level are on lower side. His serum electrolytes, liver function tests, coagulation profile, renal function tests, serum albumin, total protein were within the normal range. Stool for occult blood was positive, ultrasonography showed epigastric mass. The patient underwent upper gastrointestinal endoscopy which revealed mass present at pylorus. Biopsy was taken and tissue was fixed in 10 percent buffered formalin. Histopathology report showed that high nuclear to cytoplasmic ratio, large cytoplasmic mucin vacuoles and hyperchromatic eccentrically displaced nuclei; these are signet ring cells, which can be seen in the Figure 1, 2, 3. Computed tomography of abdomen and pelvis showed no metastatic lesions; patient was

managed supportively in medical department and then referred to Department of Surgery and Oncology for further management.

2.1 Histopathology of Adenocarcinoma of Stomach

Figure .1 Arrow indicates Signet Ring Cell(s); displaced nuclei



Cells are filled with mucin vacuoles that push the nucleus to one side, as shown at the arrows.

Figure. 2 Arrow indicates Signet Ring Cell; displaced nucleus

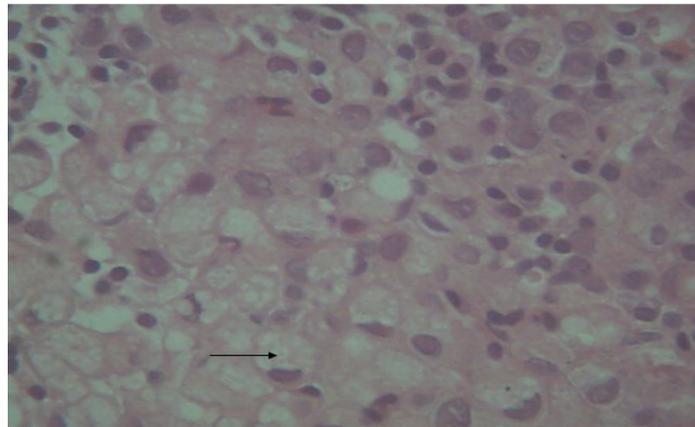
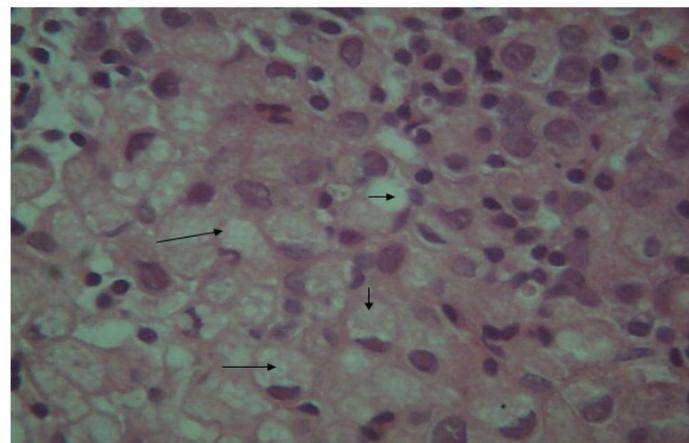


Figure.3 Arrow indicates Signet Ring Cell(s); displaced nuclei



3. Discussion

There are different types of tumor of stomach but the most common is adenocarcinoma. Other types of cancer are leiomyosarcoma, lymphomas, carcinoid tumor.

The carcinoma of stomach is very rare in teenage groups and frequently occurs in elder age groups; but can occur at any age of life. Some reports⁹ showed it can occur in young age, as young as 20 months of age; only few cases of gastric carcinoma in teen age groups are reported till now^{10,11,12}. Studies showed that less than 5% of stomach cancers occur in people under 40 years of age with 81.1% of that 5% in the age group of 30 to 39 and 18.9% in the age group of 20 to 29.⁶

Epigastric pain, anemia are main features. The features of presentation of gastric carcinoma in teen age groups are similar to those found in older patients^{10,11}. But there is some controversy present^{13,14} that gastroesophageal junction involvement is less common in youngs¹⁵. In our case carcinoma is present at pylorus of stomach but there is no metastases. Most of young patients present in late stages with wide spread metastases. These patients do not survive for more than few months from diagnosis despite of chemotherapy.¹⁶

There is association of gastric carcinoma with environmental factors, accumulation of specific genetic alterations, H. pylori infection and family history^{17,13}. In our case there were no pre-malignant condition and no family history of gastric carcinoma present, but we did not perform Helicobacter pylori and genetic assay in our case.

We made diagnosis on upper gastroendoscopy and through histopathologic findings. Computed tomography scan was done for evaluation of local and distant spread. One study showed¹⁵ that histopathology revealed signet ring cell carcinoma of stomach is more common in young patients. It is similar to our case.

An other study showed¹⁸ that young patient do not have worse prognosis than older age patients, if the disease is diagnosed at a reasonably early stage. But most of the cases are not diagnosed on time and present with metastases stage.

The surgical therapy alone prolong survival but it is palliative. Role of chemotherapy and radiation is not well defined. Although some new studies in adult may support the use of etoposide, doxorubicin and cisplatin as primary therapy or combined with surgery and radiation¹⁹

Any young patient present with persistent features of peptic ulcer disease should be evaluated for gastric malignancy. We can avoid delay in diagnosis by early upper gastroendoscopy with biopsy and barium meal.

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