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Primary Squamous Cell Carcinoma of The Stomach: A Rare Case Report

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Abstract:

Primary squamous cell carcinoma (SCC) of the stomach is rare. Its pathogenesis is also unclear and there are conflicting reports about it in the past. Only about 100 cases have been reported so far in the literature. The current study discusses a new case of gastric squamous cell carcinoma, from a 60-year-old Bangladeshi male patient diagnosed via endoscopic biopsy. In the stomach, a giant atypical looking growth-like lesion in the cardio-fundal region with surface ulcerations and no oozing. Further, histopathological examination of the biopsy specimen revealed a moderately differentiated SCC. Immunohistochemistry reports further confirmed the diagnosis.

Keywords: *Squamous cell carcinoma, stomach*

Introduction

Most of the gastric cancer cases include adenocarcinoma. Squamous cell carcinoma (SCC) of the stomach is an extremely rare entity, with an annual incidence rate of 0.04 to 0.07%.[1] The first SCC case was described in 1905.[2] Since then, less than 100 cases have been reported in the literature.[3] Despite the available diagnostic criteria, SCC pathogenesis is still unclear and different hypotheses have been proposed for its diagnosis. In addition, no effective systemic standardized treatment options are available, and the prognosis usually seems less favourable. In terms of its occurrence, SCC is mostly prevalent in males with a male-to-female ratio of 5:1 and is usually diagnosed in the sixth decade of life when it has already progressed to an advanced stage.[4]

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Case report

A 60-year-old Bangladeshi male with a two-months history of features of iron deficiency anemia (weakness, angular stomatitis) & upper abdominal pain had visited to Evercare hospital, Dhaka. Initially, the patient did not show any symptoms of nausea, vomiting, dysphagia, or melena. The physical examination and routine laboratory tests upon admission showed features of severe iron deficiency anemia, hypoalbuminemia. Contrast enhanced CT scan of whole abdomen of the patient revealed a large soft tissue mass of about 7.1(AP) x 5.7(T) x 5.0(CC) cm in the fundic region of stomach having irregular margin without any extra-gastric component which showed heterogenous enhancement after contrast infusion (as observed in Figure 1,2,3). There was no enlarged lymph node. Subsequently, the upper gastrointestinal endoscopy revealed a giant atypical looking growth located in the cardio-fundal region. This mass displayed surface ulcerations. Further histopathological examination of the biopsy specimen revealed SCC characteristics, displaying nests of anaplastic cells with foci of keratinization. Immunohistochemistry features were also compatible with moderately differentiated squamous cell carcinoma.

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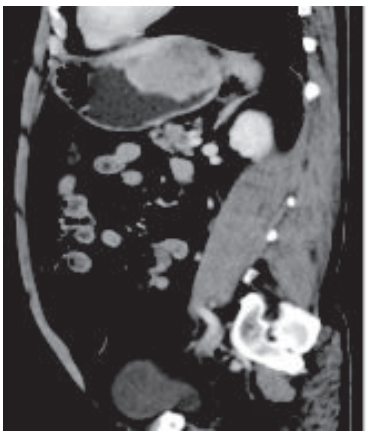

Fig.-1

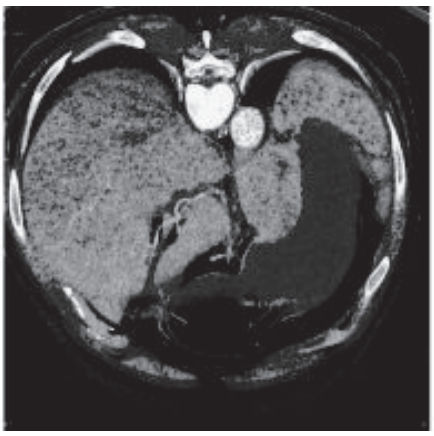

Fig.-2

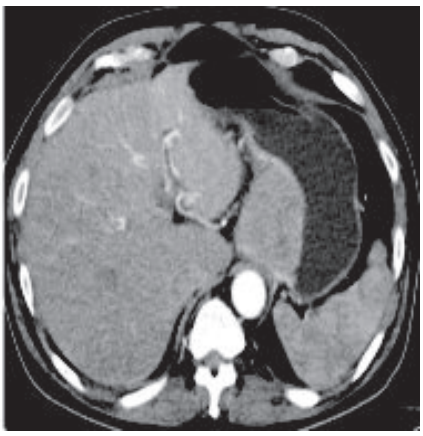

Fig.-3

Discussion

Several diagnostic criteria exist for squamous cell carcinoma. According to the Japanese classification of gastric carcinoma[5], the diagnostic criteria include: 1) all tumor cells are SCC cells, and 2) there is distinct evidence supporting the origin of SCC directly in the gastric mucosa. However, Parks[6] proposed another set of following criteria: 1) the tumor should not be located in the cardia, 2) the tumor should also not extend into the esophagus, and 3) there should be no evidence of SCC elsewhere in the body.

Consistently, the patient described in our study had the tumor located in the cardia as detected by endoscopy. In addition, we did not find any SCC in other organs of the body upon clinical examination that included abdominal CT & endoscopic examination. Therefore, the patient was diagnosed with a SCC of the stomach.

Boswell and Helwig[1] also defined four histopathological features to diagnose a primary gastric SCC. They include the presence of keratinizing cell masses with pearl formation, a mosaic pattern of cell arrangement, intercellular bridges and high concentrations of sulfhydryl or disulfide groups indicative of keratin production. Similarly, we also detected foci of keratinization which further reinforced the SCC diagnosis.

In addition, the pathogenesis of gastric SCC is still very obscure. Several mechanisms underlying its diagnosis include: 1) differentiation of the squamous from pre-existing adenocarcinoma, 2) squamous metaplasia of the gastric mucosa preceding malignant transformation, 3) pluripotent stem cells capable of developing into any cell type, and 4) the presence of ectopic squamous epithelial nests in the gastric mucosa.[7-9] Mori et al.[10] hypothesized that neoplastic pluripotent cells first transform into adenocarcinoma followed by squamous metaplasia, which eventually results in SCC. In addition, Takita et al.[11] suggested that Epstein-Barr virus (EBV) infection may also be involved in the pathogenesis of gastric SCC. They used immunohistochemistry and liquid hybridization assays for detection of human papilloma virus (HPV) infection, and polymerase chain reaction method for Epstein-Barr virus (EBV) infection.

Depending on the stage of diagnosis, the prognosis for primary gastric SCC has been reported to be either more favourable[12] or less favourable[13] than gastric adenocarcinoma. However, usually due to the late diagnosis of gastric SCC, it is already in an advanced stage, with a poor prognosis. To date, no standard chemotherapy regimen for gastric SCC has been defined. Previous reports suggested that radical surgical excision was the best option to potentially cure the localized disease. However, aggressive surgery plus adjuvant chemotherapy was appropriate for advanced-stage SCC of the stomach in some patients.[2,9] The overall survival rates of the patient range from 7 months to 8 years[2]. A high incidence of stomach SCC is observed in the sixth decade of life, although 17-year-old patients have also been reported.[14] Interestingly, Marubashi et al.[15] reported a case of gastric SCC in a 70-year-old male who responded effectively to neoadjuvant and low-dose FP chemotherapy.

To conclude, in this study, we have reported a patient who was diagnosed with gastric SCC based on the histopathological characteristics. Although the prognosis is somewhat controversial, the disease stage and surgical respectability are the key determinants of outcomes in gastric SCC.

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