# Keratinizing Type Of Squamous Carcinoma Of Distal Stomach, An Unusual Finding: Case Report

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**Abstract:** Primary gastric carcinoma of squamous differentiation, in the list of stomach neoplasms, is a tremendously rare entity. Appraisal of the medical literature showed few cases (less than 100) of squamous cell carcinoma (SCC) have been documented hitherto. SCC of the stomach is seen mostly in males with increased incidence of proximal stomach and a predilection for lesser curvature. This case is unique and might be the first reported one as it is affecting distal stomach of a 72 years old Saudi woman. The pathological features are described together with a literature review and comparison with similar reported cases with special emphasis on the diagnostic criteria, pathogenesis and prognosis.

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**Keywords:** Squamous cell carcinoma; stomach

## 1. Introduction

Keratinizing type of squamous cell carcinoma (SCC) in stomach represents not as much of 0.07% of all neoplasms of gastric origin[1 -4]. Few cases, less than 100, have been documented over more than 110 years since Rorig et al in 1895[5] reported the first case. Tumor incidence is more prominent over males than females with almost three to five folds, with a peak incidence in older age group and mainly the sixth decade [6- 7]. Increased incidence for the proximal stomach with a predilection for the lesser curvature is reported [4, 8, 9 - 10]. The present report shows an extraordinary case of 72 years old female patient diagnosed with squamous cell carcinoma-keratinizing type, primarily originating from the distal stomach with adhesions to gall bladder, small and large bowel and peritoneal implants associated with metastasis to one of the porta hepatis lymph node

## 2. Case report

A 72 years aged female was hospitalized because of a mass in the abdomen with 3 months duration associated with pain in the epigastrium, anorexia and loss of weight. The medical history of the patient revealed no significant problems. The results of laboratory investigations showed a normochromic normocytic anemia. Furthermore, hemoglobin was 11.1 g/dl (Normal: 12-16), mild leukocytosis: $11.5x10^3$ (Normal $4-11x10^3$), mild elevation of gamma glutamyl transferase: 90 U/L (Normal: 5-25) and slight elevation of the tumor marker CA125: 49.14 KIU/L (Normal:0-35). Computerized Tomography (CT) of the abdominal demonstrated a heterogeneously enhancing tumor located in right side of the abdominal cavity measuring 14.9x14.8x8 cm. The mass was involving pylorus and antrum of the stomach and couldn't be separated from the gall bladder and anterior abdominal wall. A subtotal gastrectomy was performed and resected specimen was distorted and round shaped measuring 16x11x7.5 cm (Figure 1). The outer serosal surface was nodular and showed adhesions with segments of bowel all measuring approximately 11.5 cm in length, a gall bladder measuring 7x3.5x2cm and an attached sheet of greater omental fat measuring 15 cm in depth. On cut section, there was a pale grayish white firm and partially necrotic growth measuring 12cm in maximum dimension occupying the entire gastric cavity. The gall bladder contained several large mixed gall stones. Seven perigastric and porta hepatis lymph nodes were identified; the largest measured 2 cm in maximum diameter. Representative tissue sections were taken from the received specimen and 20 paraffin embedded tissue blocks were prepared. Tissue slides of 3-4 microns thickness were prepared and were independently examined by two Pathologists. The diagnosis of squamous cell carcinoma-keratinizing type was made and graded as moderately differentiated (Figures 2 and 3). Transmural invasion of the gastric wall is seen with evidence of hepatic, gall bladder, duodenal and colonic adhesions and a small focus of peritoneal implant. No evidence of vascular or perineural invasion is seen. One out of seven lymph nodes at the porta hepatis showed metastatic deposits (T4bN1MO tumor stage). Despite the presence of various serosal adhesions between the gastric tumor and the adjacent structures, there was no microscopic confirmation of tumor origin in the gall bladder, esophagus and intestine.

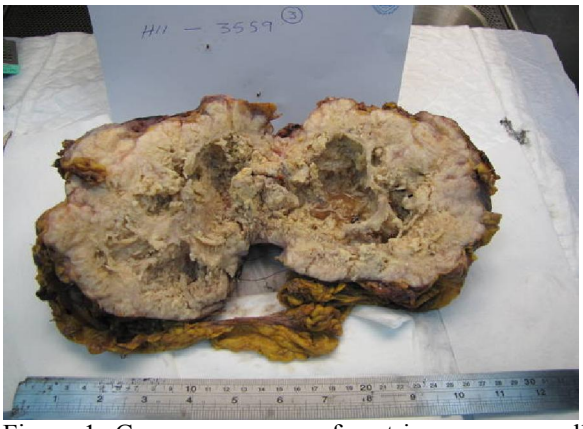

Figure 1. Gross appearance of gastric squamous cell carcinoma. Note the complete absence of remaining normal gastric structures and the presence of a pale grayish white firm and partially necrotic tumor.

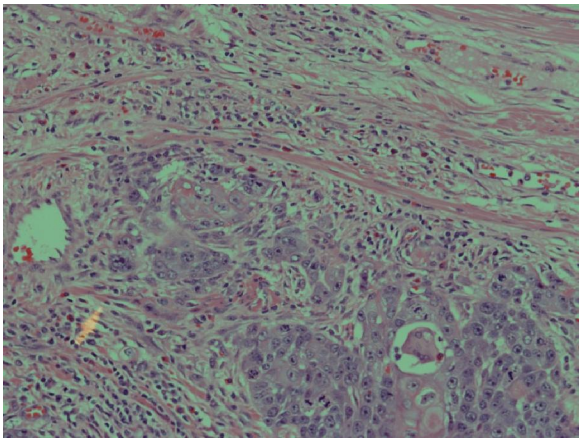

Figure 2. Invasive squamous cell carcinoma in the gastric wall. Note the presence of tumor islands invading the smooth muscle fibers. Hematoxylin and eosin stain X 200.

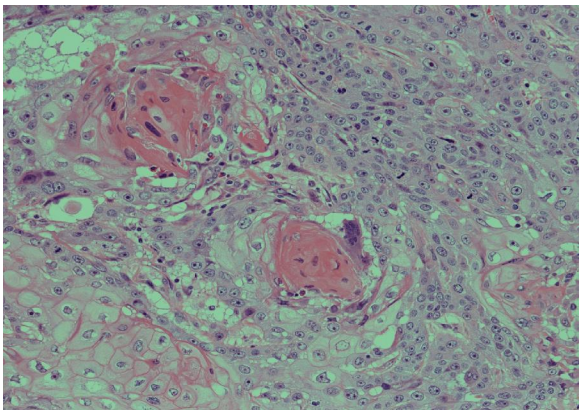

Figure 3. Moderately differentiated and keratinizing squamous cell carcinoma of the stomach. Note the presence of keratinous material near the center of the field. Hematoxylin and eosin stain X 400.

**3. Discussions**

Squamous cell carcinoma (SCC) of stomach is uncommon among gastric neoplasms[11]. A male predominance has been observed [2, 6, - 7] and the patients mean age was almost 61.9 years[7]. According to Parks et al there are three diagnostic criteria to differentiate keratinizing type of primary gastric squamous cell carcinoma from gastric adenosquamous carcinoma[12]. These criteria comprise first esophagus must be free from tumor extension, second neoplasm site must not be in the cardia, and then sqamous cell carcinoma should not be found in another site of the body. In our case all the 3 criteria are fulfilled, therefore, it was diagnosed as a primary gastric SCC. Some microscopic features have been settled by Boswell [13] to diagnose keratinizing SCC of the stomach which includes the presence of nests of keratinizing cells with pearl formation, cells display intercellular bridges and mosaic pattern.

The pathogenesis of keratinizing type of primary gastric SCC is not yet fully established. Several theories were suggested by Straus, Heschel and Formann[14], of which the gastric mucosa contains groups of misplaced squamous cells from which carcinoma may grow, or there may be squamous metaplasia of gastric mucosa idiopathic or secondary to chronic mucosal damage[4, 15]. Alternatively, pre-existing gastric adenocarcinoma shows areas of squamous differentiation, in addition to the existence of stem cells in the mucosa stomach and endothelial cells of gastric vasculature which are the culprits. Still, in most of the cases of keratinizing SCC of the stomach, precursor lesions could not be identified. In the present report, there is no past history of gastric ulcer or chronic gastritis which can contribute to the pathogenesis of this cancer which remains speculative. In SCC there is an increased incidence to be in the proximal stomach and a predilection for the lesser curvature [4, 8-10]. This was not seen in our case in which the distal part of the stomach was the affected part.

The prognosis of SCC of the stomach might be worse than adenocarcinoma because of the increased probability of lymphovascular invasion as suggested by Volpe et al. [8] which is not seen in our case. Contrary to this suggestion, Altshuler and Shaka stated prognosis of keratinizing squamous carcinoma of the stomach is better than adenocarcinoma[16], which was also emphasized in another study by Yesim et al [17]. However, the probable survival rate of gastric SCC ranges from 7 months or less to 8 years or more [11,13].

## 4. Conclusion

Keratinizing type of gastric squamous cell carcinoma is rare neoplasm affecting mainly elderly males involving the proximal part of the stomach. Our case differs from the reported cases in the literatures as it occurred in the distal stomach and in a female patient. In spite of having definite gross and histopathological features of this neoplasm, its exact pathogenesis and prognosis remain speculative.

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