



# Synchronous Gastric Adenocarcinoma and Perigastric Lymph Node Metastatic Squamous Cell Carcinoma with Unknown Primary: A Case Report

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We report a case of 65 years old man who was found on routine esophagogastroduodenoscopy to have gastric tumour. Histology revealed adenocarcinoma. Staging investigation with abdominal computed tomography (CT) confirmed gastric cancer of the antrum with lymph node enlargement at hepatoduodenal ligament. The patient underwent laparoscopic assisted distal gastrectomy with D2 lymphadenectomy. Pathology revealed intestinal type moderately differentiated tubular adenocarcinoma invading lamina propria (pT1a). Four positive lymph nodes out of 34 did not show metastatic adenocarcinoma but rather Squamous Cell Carcinoma (SCC) and were positive for p63 and CK5/6 on immunohistochemistry. Primary site of SCC was not found. He received adjuvant chemotherapy with TS-1 60 mg. After two years of follow-up he is asymptomatic and repeated EGD and abdominal CT Scan were normal. Herein, the authors report the case of early gastric cancer with synchronous metastatic SCC with unknown primary site.

**Keywords:** Adenocarcinoma, Metastasis, Perigastric lymph node, Synchronous, Squamous cell carcinoma

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## INTRODUCTION

Gastric cancer (GC) includes all malignant epithelial tumours of the stomach. Adenocarcinoma with various histological types (papillary, tubular, mucinous and poorly cohesive) account for 95% of cases.<sup>1</sup> However, several unusual presentations have been reported in the literature review of this condition. These are in the form of unusual histological subtypes, configuration, spread or complication.<sup>2</sup> Lymph nodes (LN) are

the commonest site of metastasis in gastric cancer, and is a recognized prognostic factor and predictor of the disease recurrence.<sup>3</sup>

Perigastric LN are involved very early. However, cancers of the oesophagus, lung and the neck region can also metastasize to the perigastric nodes.<sup>4</sup> Furthermore, metastatic cancer in perigastric LN with unknown primary has been reported in the literature.<sup>5</sup>

Cancer of an unknown primary site (CUP) defined as a

metastatic disease without an identifiable primary tumour after a full diagnostic work-up, represents 3~5% of all invasive cancers, and the squamous cell carcinoma accounts for 15% of these cases.<sup>6</sup> We report a case of an early antral gastric adenocarcinoma (pT1a), with synchronous Squamous Cell Carcinoma (SCC) metastasis, in 4 out of 34 perigastric LN with occult primary SCC.

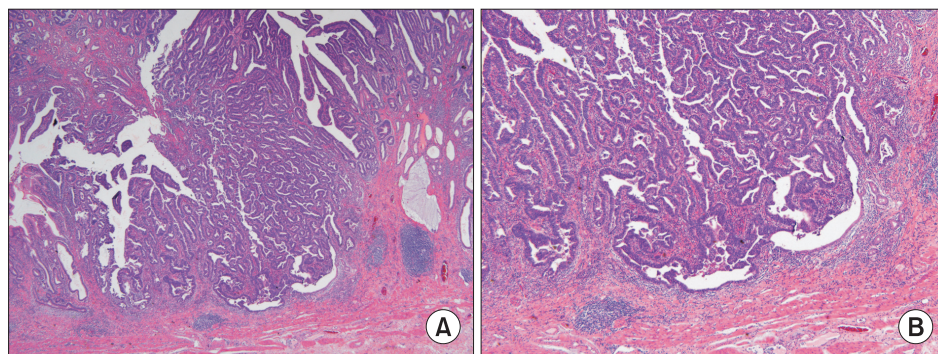
This study was approved by the Institutional Review Board of Pusan National University Yangsan Hospital. Informed consent to publish was obtained from the patient.

## CASE REPORT

A 65 years old Korean male with no significant past medical and social history had a routine screening Esophagogastroduodenoscopy (EGD) at the Pusan National University Yangsan Hospital (Yangsan, South Korea), which revealed a broad-based mass with nodularity in the gastric antrum. Upon a review of the histology of the endoscopic biopsy from the antrum and the body, revealed a tubular moderately differentiated, intestinal type adenocarcinoma and a chronic gastritis respectively. A review of the staging abdominal computed to-



**Fig. 1.** Gross observation of the tumour.



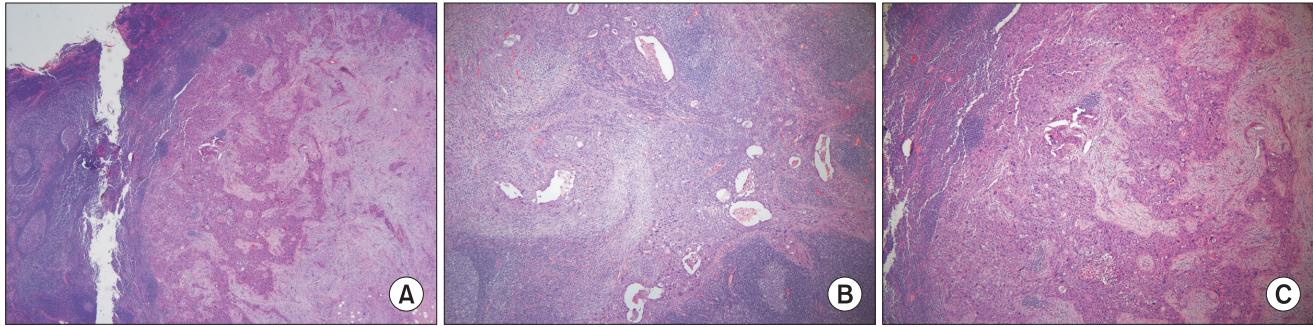
**Fig. 2.** Microscopic observation of the tumour (hematoxylin and eosin A  $\times 20$  and B  $\times 40$ ) showing moderately differentiated tubular adenocarcinoma.

mography (CT) Scan demonstrated an ulcerofungating mass at the stomach antrum, with enlarged LN at the hepatoduodenal ligament and perigastric fat stranding. The positron emission tomography, fluorine-18 fluoro-2-deoxy-D-glucose (PET-CT: F-18 FDG) Torso (Skull base to thigh) were performed, and confirmed the GC of the antrum, with a lymph node enlargement at the hepatoduodenal ligament (cT4aN1M0).

The patient underwent a laparoscopic assisted distal gastrectomy with a D2 lymphadenectomy. The resected specimen measured 18.1 cm and 7.8 cm along the greater and lesser curvature respectively. Macroscopically, it exhibited relatively a well-defined fungating mass (Borrmann Type 1) measuring 7.2  $\times$  4.1 cm, and a well-defined yellow white flat lesion measuring 0.2  $\times$  0.2 cm at the antrum and the anterior wall of lower body respectively. The masses were 2.6 cm and 1.0 cm from the proximal and the distal resection margins respectively.

Histologically tumour was intestinal type, moderately differentiated tubular adenocarcinoma with areas of papillary well differentiated component (Fig. 1, 2). In this case the tumour invaded the lamina propria (pT1a). Evidently, the proximal margin, distal margin and the anvil ring were free of the tumour with a safe margin of 2.6 cm proximal and distal of 1.0 cm. No squamous differentiation was seen in the gastric cancer. There was no lymphatic, venous or perineural invasion at that time. In this sense, the immunohistochemistry study of the C-erbB2 was shown to be negative. A total of 34 LNs were retrieved from the specimen, 15 and 19 from the greater and lesser curvature respectively. None of the LNs contained metastatic deposits of the adenocarcinoma (pN0). However, 4 out of 34 (1 from greater curvature and 3 from the lesser curvature) retrieved LNs revealed the SCC, and were positive for p63 and CK5/6 on Immunohistochemistry (Fig. 2).

Chest CT Scan done a month after surgery showed mild pulmonary emphysema, left lung had two 2 mm sized sub pleural indeterminate nodule and LLL posterior basal segment, subsegmental atelectasis. After enough informed consent of various options for chemotherapy with hemato-oncologist, the patient treated to TS-1. He received 8 cycles of adjuvant che-



**Fig. 3.** Microscopic observation of the lymph nodes (hematoxylin and eosin A  $\times 20$ , B and C  $\times 40$  magnification) showing SCC with the keratin formation without any adenocarcinomatous component.

motherapy with oral TS-1 60 mg. At last follow up two years after surgery, he is completely asymptomatic. The patient CT scan of the abdomen showed no evidence of the local tumour recurrence, and EGD revealed normal esophagus, subtotal gastrectomy state with no evidence of local tumour recurrence.

## DISCUSSION AND CONCLUSION

The GC includes all the malignant epithelial tumours of the stomach. Adenocarcinoma with various histological types account for 95% of the cases.<sup>1</sup> Several rare variants are recognized in the WHO classification, including an adenosquamous carcinoma and SCC.<sup>7</sup> Unusual manifestations of gastric cancer have been reported. These are in the form of unusual histological subtypes, configuration, spread or complications related to this condition.<sup>2</sup> Broadly speaking, the LNs are the commonest site of metastasis in gastric cancer, and is a recognized prognostic factor and predictor of disease recurrence.<sup>3</sup> They correlate with the location and size of the tumour, depth of invasion, histological type and the Borrmann type. The lymphatic drainage of the stomach is complicated and multidirectional, but the perigastric LNs are the first sites to be involved in early gastric cancers. However, cancers from other location such as esophagus, lungs and head and neck regions can also spread to the perigastric LNs.<sup>4</sup>

The present case is an early antral GC pT1a, moderately differentiated tubular adenocarcinoma, Borrmann Type I. The case of a T1a tumour is defined as a tumour invading the lamina propria. Despite a tumour size of 7.3 $\times$ 4.1 cm, there was no metastasis deposit of the adenocarcinoma in the 34 retrieved regional LNs. Lymph node metastasis in an intramucosal early gastric cancer is variable but low. However, four out of the 34 lymph nodes had histological and immunohistochemistry features of SCC in this case.

SCC is a malignancy of epithelial origin capable of occurring in organs that are covered with a squamous epithelium.

Broadly speaking, the case of a non-melanoma skin cancer, head and neck cancer, esophageal cancer and non-small cell lung cancer account for the majority of these cases.<sup>8</sup> The SCC as a variant of GC is an unusual histological subtype and rare in most cases. It is seen that this condition may occur as the primary SCC, adenosquamous carcinoma or as a collision tumour of the stomach.<sup>2</sup> However, there was no histological evidence of either a squamous differentiation of the gastric antral tumour or a primary site of SCC in the resected specimen. In terms of the Synchronous SCC of the oesophagus and the adenocarcinoma of the stomach has also been documented in the literature, and the primary SCC of the esophagus has been shown to metastasize to perigastric LN.<sup>9</sup> However, the pre-operative and follow-up EGD in this patient did not revealed any pathology in the esophagus, and he is completely asymptomatic two years after surgery.

Furthermore, cancers of the lung and the neck region can also metastasize to the perigastric nodes.<sup>4</sup> The prevailing discipline notes that the Chest and Abdominal CT Scan as well as the PET-CT: F-18 FDG Torso (Skull base to thigh) of our patient failed to demonstrate any lesion in the esophagus, lungs and head and neck region which were capable of metastasizing to the perigastric lymph node in our patient.

We believe that adequate diagnostic work-up for the CUP has been carried out in this patient. Indeed, the FDG PET-CT which was performed for this patient is considered to be very useful, and assisted the sensitive imaging modality for a patient with CUP.<sup>10</sup> The Han et al. study revealed that, out of 120 patients with CUP, the FDG PET-CT was able to detect a primary tumour in 54 of the patients, representing 42.5% with a false positive rate of 7.5%, and thus a primary tumour was found in only 5 cases of 60 unidentified cases during clinical follow-up between 2 to 45 months.<sup>10</sup> This case presented a diagnostic dilemma, and will add to the existing literature as a case of synchronous gastric adenocarcinoma and metastatic SCC with unknown primary.



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Conceptualization: SHH. Formal analysis: BKS. Methodology: HJL, SHL. Writing—original draft: BKS, KHK. Writing—review and editing: KHK, SHH.

## CONFLICT OF INTEREST

None.

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