INCIDENTAL FINDING OF GASTRIC SIGNET RING CELL CARCINOMA: A CASE REPORT

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INTRODUCTION

- The incidence of gastric signet ring cell carcinoma (GSRC) has been steadily increasing in the United States (U.S.).
- Asian countries such as South Korea and Japan have programs for population-wide gastric cancer screening with high participation rates, likely leading to cancers being detected at earlier stages (**Table 1**).
- Furthermore, an increased number of endoscopic screening tests for gastric cancer is associated with a decreased odds ratio of death (**Table 2**).
- In Western countries, diagnostic testing is typically performed only after symptom onset, at a point where it likely carries a poor prognosis with low chemosensitivity.
- Despite the increase in cases of GSRC in the U.S., there are no population-wide screening guidelines allowing for its early detection and treatment.
- In this case report, we present a patient with a family history of gastric cancer who was incidentally found to have early-stage GSRC on random endoscopic gastric biopsies.

CASE

A 48-year-old male with family history of gastric cancer in his sibling presented for routine colonoscopy. Although asymptomatic, he had an upper EGD at the time of colonoscopy due to interest in screening for cancer. The patient was noted to have mild antral gastritis and gastric biopsies were taken at the time of the procedure. On random 0.7 mm gastric biopsies, the pathology was consistent with GSRC. He then underwent a subsequent EGD with mapping protocol in which biopsies were obtained from the incisura, antrum (lesser and greater curvature), and corpus (lesser and greater curvature). The lesion was found to be restricted to the antrum and he underwent a partial gastrectomy to prevent progression of disease.

Country	Population-Based Screening Method
Japan	Individuals older than 50 years with conventional double-contrast barium radiograph with photofluorography every year *or* upper endoscopy every two to three years
South Korea	Upper endoscopy is recommended every two years for individuals aged 40 to 75 years
United States	No routine screening guideline

Table 1: Gastric cancer population-wide screening methods by country.

Number of endoscopies	Odds Ratio of Death
1	0.60 (95% CI, 0.57-0.63)
2	0.32 (95% CI, 0.28-0.37)
3 or more	0.19 (95% CI, 0.14-0.26)

Table 2: As indicated by a study on the effectiveness of the Korean National Cancer Screening Program in Reducing Gastric Cancer Mortality, an inverse relationship exists between the number of endoscopic screening tests and the odds ratio of death from gastric cancer. Table recreated from: Jun, J. K., Choi, K.S., Lee, H. Y. et al. (2017). Retrieved from: 10.1053/j.gastro.2017.01.029

CONCLUSION

- An asymptomatic patient was incidentally found to have GSRC on endoscopy at a time allowing for early intervention.
- Applying the screening standards set forth by South Korea, gastric cancer would have likely been discovered on routine screening in this 48-year-old patient.
- However, this patient requested screening due to a sibling who had been diagnosed with gastric cancer.
- The odds ratio of a first-degree relative developing gastric cancer is estimated to be anywhere from 2 to 10.
- In the setting of increasing incidence of GSRC in the U.S., establishing and broadening guidelines for screening patients who are at higher risk than the average population, notably those with family history, male sex, tobacco use, and of certain ethnicities, is becoming increasingly important.

Further research is warranted for the development of screening protocols that can guide gastroenterologists on endoscopically screening for metaplastic or cancerous lesions of the stomach. Such guidelines have become a public health necessity given the high morbidity and mortality rates of this cancer.

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