Surveillance of Gastric Cancer

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Case

• RM is a 62 year old very pleasant secretary with no major medical history diagnosed with clinically stage 2 gastric cancer.
• She received 3 cycles of pre-op ECF (epirubicin, cisplatin and 5 FU) and underwent surgery.
• Post-operative pathology showed yPT4aN2 stage 3 disease.
• After discussion with RM 3 additional cycles of ECF was given.

Her five year risk of recurrence is more than 50%. What follow up would you recommend for her?
• Gastric cancer is the fourth most common cancers and second leading cause of cancer deaths worldwide.
• Globally it accounts for 8% of the total cases of cancer and 10% of total cancer-related deaths.


Facts

• Gastric cancer has a high recurrence rate following the curative resection.
• Majority of the recurrences occur within five years following surgery
  – 70% relapse within 2–3 years after surgery
  – More than 90% of patients relapse within 5 years
• The reported incidence of metachronous gastric cancer after partial gastrectomy for early gastric cancer is 0.6–3%
• Surgery with a curative intention after loco-regional recurrence can only be performed in a very limited number of patients.

• Feeding problems occur in approximately 30% of patients, but severe symptoms are present only in 1–2%.
• There are various ‘postgastrectomy syndromes’ based on the type of surgery and reconstruction technique.
• Anemia, bone disease, and weight loss due to malabsorption are not uncommon.
• Iron deficiency is the most common anemia following gastric resection.

Important goals of follow-up

• Identification and management of treatment-related complications.
• Early recognition and treatment of potentially curable disease recurrences and a second primary cancer.
• Identification of symptoms related to metastatic disease and appropriate work-up and referral to specialists for further management.
Surveillance Components

History & Physical Examination

- Beneficial for identification and treatment of surgery ± chemotherapy/radiation related complications.
- Routine assessment in asymptomatic patients are not useful for detection of recurrence.

Endoscopic Exam

- Endoscopy during the follow-up period is considered when there is a risk of recurrence in the stomach remnant:
  - after a subtotal gastrectomy
  - after endoscopic treatment for early gastric cancer
- For early gastric cancers, endoscopy can detect new primaries, but the incidence of these tumors is low.
  - Many thousands of procedures are required to detect each operable case.


CT Scan

- CT scan is regarded as the most reliable method for assessing cancer recurrence, with a reported accuracy of 60–70%.
  - Limited value in the distinction of postoperative morphologic changes from tumor recurrence.
  - Low positive predictive value for peritoneal and distant lymph node metastasis

PET-CT Scan

• A PET-CT scan has a diagnostic accuracy ranging from 75 to 97%.
• Greatest utility in patients with a suspicion of recurrences based on tumor marker and other imaging modalities.


Tumor Markers

• CEA and CA19-9 are potentially useful indicators of recurrence, especially in the patients who had elevated preoperative levels of these markers.

Post-Recurrence Outcomes

- **Colorectal Cancer**
  - Median survival 24-30 months
  - 10-20% can undergo metastasectomy
  - Loco-regional therapies are option in some cases
  - Long-term remission/cure can be achieved in 30-40% patients with metastasectomy

- **Gastric Cancer**
  - Median survival approximately 12 months
  - Curative surgery is rarely an option
  - Loco-regional therapies are not feasible in most cases
  - Long-term survival is extremely rare following metastases resection


Evidence From Literature
• There are no randomized trials to guide surveillance strategies following remission from early gastric cancer.

• All of the recommendations on surveillance are based on low-level evidence or no evidence at all.

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### Incidence of synchronous gastric cancers in the endoscopically resected tumors within 1 yr of the procedure

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<th>Incidence</th>
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<th>No. of Events</th>
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Surveillance after ESD

- A retrospective cohort study from Japan involving 1258 patients with early gastric cancer treated with endoscopic submucosal dissection (ESD).
- Post ESD → surveillance endoscopy every 6-12 months.
- At median follow-up of 27 months, synchronous (≤ one year of ESD) or metachronous (> one year) cancers were detected in 14% cases, and local recurrence was detected in 0.4%.
- 94% were successfully treated with repeat ESD.


- A retrospective study conducted in Korea suggests that there is no difference in outcomes for subjects screened at one-, two-, or three-year intervals.
- The exact surveillance interval needs to be defined with randomized trials.

Surveillance after gastrectomy

- Patients with symptomatic recurrence have more aggressive disease with a shorter post-recurrence survival.

Systematic Review

- A Systemic review of 5 observational studies involving 810 patients who underwent post-operative follow-up.
- History and physical examination, hematological and chemistry profile, EGD, and CT were the most frequently employed modalities.
- CT detected the majority of recurrences in the included studies.
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- The survival post-recurrence was significantly higher in the asymptomatic group compared with symptomatic group in three studies,
  - this likely reflects lead-time bias, in which the observed prolonged survival is due to earlier detection of recurrence, rather than being due to a true effect on disease outcome.
- No differences in overall survival (OS) were found.
Guidelines Recommendations

2015 NCCN Gastric Cancer Follow Up Recommendations

- H & P
  - Every 3-6 months for 1-2 yrs
  - Every 6-12 months for 3-5 yrs then annually
- CBC and chemistry profile as indicated
- Radiologic imaging or endoscopy as clinically indicated
- Monitor nutritional deficiency (e.g. B12 and iron) in surgically resected patients and treated as indicated
2013 ESMO Gastric Cancer Surveillance

• In the setting of operable gastric cancer, the complexity of treatment frequently induces symptoms which adversely affect health-related quality of life.

• A regular follow-up may allow investigation and treatment of symptoms, psychological support and early detection of recurrence, though there is no evidence that it improves survival outcomes.

• New strategies for patient follow-up are currently undergoing evaluation, including patient-led self-referral and services led by clinical nurse specialists.

2014 Saskatchewan Cancer Agency

• Follow-up investigations should be tailored based on disease stage, adjuvant treatment provided, performance status, and clinical signs and symptoms.
  ▪ In patients treated with curative intent: history and physical examination every 3–6 months for the first 3 years then every 6–12 months for the next 2 years and annually thereafter.
  ▪ Thoracoabdominal CT scan, abdominal ultrasound and chest x-ray only as clinically indicated.
  ▪ Periodic endoscopic examination as clinically indicated.
  ▪ Laboratory testing including CBC, serum chemistry, LFT, and CEA only as clinically indicated.
  ▪ Nutritional counseling for all; vitamin B12 supplementation in patients who have had proximal or total gastrectomy.
Conclusions

• Currently the best strategy for the follow-up of patients who have undergone surgical treatment with curative intent for gastric cancer is not known.

• Period assessments are useful to address treatment-related complications and psychological support.

• Currently there are no data to support that early detection of an asymptomatic recurrence by tumor marker or radiologic imaging improves quality of life or prolongs survival.