Esophageal Cancer Treated with Surgery & Radiation
Samantha Figlia & Lacey Pettigrew

Esophageal Cancer

Background Information

**Adenocarcinoma:**
- **Definition:** malignancy of the esophagus protrudes through lining tissue layers leads to possible fistulas and spread to the surrounding lymph nodes.

Stages of Esophageal Cancer

- **Stage 0:** Growth found only in innermost layer of cells lining the esophagus.
- **Stage 1:** Growth has spread to the 2nd layer of tissue the esophagus.
- **Stage 2:** Growth has spread all three layers of esophagus and to nearby lymph nodes.
- **Stage 3:** Growth spread to the outer part of esophagus and potential spreading to tissues lymph nodes near the esophagus.
- **Stage 4:** Growth found throughout the body and in lymph nodes.

Esophageal Cancer

Background Information

- **Cause unknown**
- **Possible correlated risk factors:**
  1. Consumption of hot beverages and foods
  2. Heavy smoking
  3. Alcohol consumption
  4. Male gender
  5. African and Asian decent
  6. GERD and Barrett’s Esophagus (BE)
Esophageal Cancer
Background Information

- Progression often leads to:
  1. Aspiration
  2. Inability to consume beverages and foods orally
- Prognosis almost always fatal; 5 year survival rate of 16%.
- Incidence:
  1. New cases in 2008: 16,470
  2. Deaths per year: 14,280
- Prevalence:
  1. Third most common cancer in G.I. Tract.
  2. United States: highest incidence in urban areas and overall incidence is about 5 in 100,000.

Literature Review
CAM

Title: Transitioning From Preclinical to Clinical Chemopreventive Assessments of Lyophilized Black Raspberries: Interim Results Show Berries Modulate Markers of Oxidative Stress in Barrett’s Esophagus Patients

- Hypothesis: “Dietary administration of black raspberries may inhibit the progression of Barrett’s Esophagus”

- Variables:
  - Dependent:
    1. Stress Markers: 8-epi-prostaglandin & 8-hydroxy-2’-deoxyguanosine
    2. Cell and DNA Damage
  - Independent: Lyophilized Black Raspberries (LBR)

- Results: Overall oxidative stress and cell/ DNA damage decreased.

- Discussion/Conclusions:
  - Not significant decrease in oxidative stress and malignant cell growth.
  - LBR high anti-oxidant properties & combined with traditional cancer treatment provide additional relief.

Literature Review
MNT

Title: Modulating Effects of the Feeding Route on Stress Response and Endotoxin Translocation in Severely Stressed Patients Receiving Thoracic Esophagectomy.

- Retrospective study on 29 Male patients who underwent an esophagectomy.
- Separated into 2 groups: TPN or Enteral Nutrition
- Interleukin-6 &10 and endotoxins were monitored 1 wk before operation, and 2 hours, 1,3,7 days post operation.
Literature Review

MNT

Results
- Acute phase responders were significantly lower in EN patients than TPN patients.
- Perioperative EN may be the preferred method of nutrition for esophagectomy patients.

Patient Information

Mr. Nick Seyer
- Male
- Age: 58 years
- Height: 6'3"
- Current Weight: 198lbs
- Occupation: Contractor
- Lifestyle: Smoker (2 packs daily) and alcohol (1-2 beers daily)

Patient Information Cont.

- Chief Complaint: Heartburn and difficulty swallowing (4-5 months)
- Medical History: No prior hospitalizations
- Nutrition History: Normal appetite and diet/No aversions to foods previous to illness
- Medical Diagnosis: Stage IIB adenocarcinoma of the esophagus

Previous Surgery to MNT

Type: Transhiatal Esophagectomy
Description: diseased esophagus is removed and...
1. Reconnected with the stomach.
2. Part of the descending colon is used and reconnected to the stomach.
**Patient Information**

Diet- Drug interactions: None

Usual Food Intake: Good (previous to illness)

24-hour recall: Decreased food intake and overall Kcals due dysphagia and heart burn

**Patient Information Cont.**

**Allergies:** None

**Family Influences:** Wife purchases and prepares foods.

**Lifestyle risk factors:** heavy smoking and moderate alcohol consumption

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**Patient Assessment**

**Medical History:** None

**Biochemical Parameters:**
- Normal: BMI (24.8), Sodium (136 mEq/L) and BUN (10 mg/dL)
- Low: Albumin (3.0 g/dL), Total Protein (5.7 g/dL), Prealbumin (12 mg/dL), Transferrin (175 mg/dL), RBC (4.3 x10^6/mm^3), Hgb (13.9 g/dL), and Hct (38%)
- High: CPK (172U/L), ESR (15 mm/hr) [reactant to acute illness]

**Patient Assessment Cont.**

**Physical Assessment:**
- Moderately weight loss
- %UBW: 86%
  (14% loss over several months: Moderate)
- BMI: 24.8 (Normal)
- Dysphagia (3-4 months)
- Odynophagia (5-6 months)
- Eyes sunken
Prescribed Tube Feeding
By Physician

Placement: Jejunal Feeding Tube
Formula: Isosource HN 1.5 @75ml/hr
Provides:
Total: 2700 kcals
Protein: 122g
Free Water:1386 ml
Flushes: 75ml/hr

*** Not meeting his Caloric needs of 2919 Kcals**

Diagnosis

Inadequate oral food/beverage intake (NI-2.1) related to dysphagia and decreased appetite as evidenced by 14% unintentional weight loss over several months and patient report of difficulty swallowing.

Nutrition Intervention

- The patient’s current TF is not meeting his kcal and protein needs.
- We recommend increasing TF formula rate to 85ml/hr. This provides:
  - 3060 kcals
  - 138g Protein
  - 1571ml Water
  - 335ml flushes every 6 hrs

Nutrition Intervention Cont.

- If signs of intolerance, switch to elemental formula, Peptamen1.5 @ 85ml/hr
- Education on smoking cessation & alcohol consumption
Patient Goals

**Outcome Goals:** Stop involuntary weight loss, and increase all serum protein levels to normal range.

**Monitor/Evaluate**

- Monitor any changes in electrolytes, serum proteins, and weight.
- Monitor for tolerance of tube feeding. Check for diarrhea, and nausea.
- Follow up in 24 hours. Referral to speech pathologist in 1-2 wks for swallow test to determine whether pt. can be advance to PO diet.
- Radiation usually occurs 2-4 week post surgery referral to outpatient RD if side effects affecting PO intake occur.

References