A Review of Perioperative Nutritional Assessment and Management in the Surgical Patient

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Introduction

Malnutrition amongst hospitalized patients is well documented in the literature. Nutritional support may be indicated for patients with existing malnutrition or well nourished patients undergoing major surgical procedures with anticipated lengthy recovery times and delayed return to normal gastrointestinal function.

The concept that malnutrition can affect surgical outcomes derives from a 1936 study showing a significant difference in mortality rate of patients undergoing ulcer surgery. Malnourished patients demonstrated a 33% mortality rate vs 3.5% mortality rate for well nourished patients.

This case report explores the nutritional assessment and management of an Oral and Maxillofacial surgery patient undergoing segmental resection of their necrotic lower left mandible.

Initial Presentation & History

Presentation

- 70 yo M presents three years after extraction of #17, #18 with exposed necrotic bone.
- Three previous debridements have failed to stop the process.
- Patient reports intermittent swelling and trismus, but denies fevers/chills.
- Symptomatic relief with antibiotics.

History

- Base of Tongue SCC s/p XRT and Chemotherapy
- Meds: Lisinopril, Amlodipine, Amoxicillin, Peridex
- Allergies: NKDA
- Denies Smoking, EtoH, Drug Use
- Weight: 65 KG (133lb), Height 182 CM (6'0")

Patient Exam

Facial Exam

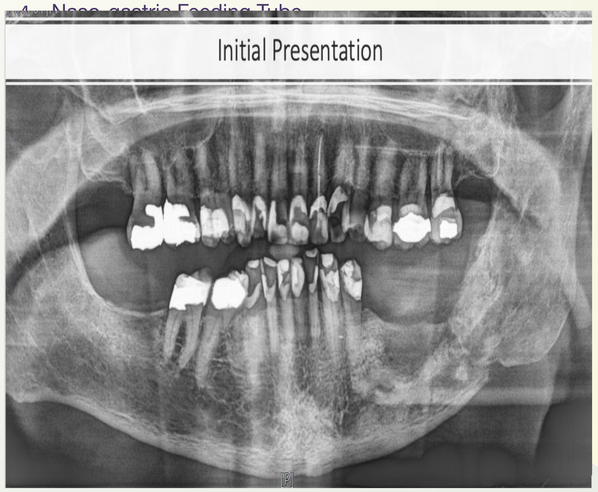
- Face symmetric
- MIO~ 10 mm
- CN V and CNVII intact b/l
- TMJ non-tender to palpation

Oral Exam:

- Occlusion stable and reproducible
- FOM soft, non-tender
- Left posterior mandibular concavity with expressible purulence

Surgical Plan

1. Tracheostomy
2. Left Segmental Resection of Necrotic Bone
3. Pectoralis Major Flap vs SCM Flap vs Digastric Flap
4. Naso-gastric Feeding Tube



Screening and Classification

Patient Stats:

- Height- 182.8 cm
- Weight- 60.5 Kg
- Ideal Body Weight- 80.9 Kg
- Percentage of ideal Body weight- 75%

Table 1. Comparison of Malnutrition Risk Screening Tools.

Malnutrition Risk Screening Tools	Description	Parameters Used
Malnutrition Screening Tool (MST)[9]	MST is a simple, quick-to-administer, 2-question tool.	Unintentional weight loss[a] Appetite[a]
Nutritional Risk Screening–2002 (NRS-2002)[10]	Developed by ESPEN, this is a preferred tool to screen for malnutrition in European hospital settings.	Unintentional weight loss[a] BMI[a] Disease severity Age Impaired general condition
Malnutrition Universal Screening Tool (MUST)[11]	Developed for screening in the community, MUST is widely used in the United Kingdom and Europe.	Unintentional weight loss[a] BMI[a] Disease severity Food intake[a]
Short Nutritional Assessment Questionnaire (SNAQ)[12]	A simple, easy-to-administer, 3-question screening tool developed in the Netherlands for hospital screening.	Unintentional weight loss[a] Appetite[a] Use of oral supplement or tube feeding

General classification of malnutrition*

Criteria	Severe	Moderate	Mild
Albumin (g/dL)	≤2.0	≤2.5	≤3.0
Prealbumin (mg/dL)	<5.0	<10.0	<15.0
Ideal body weight	<70%	<80%	<90%
Usual body weight	<75% or 10% loss <6 mo	<85%	<95%
BMI (kg/m²)	<16	<17	<18.5

**The diagnosis of malnutrition is multi-factorial and based on clinical judgment. No particular finding is required or definitive.*

Nutritional Assessment

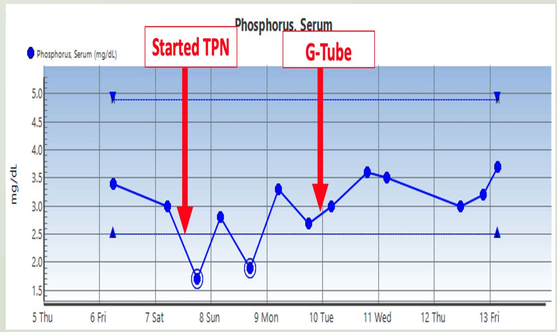
Nutritional Assessment

Diagnosis 1: Severe Protein Calorie Malnutrition Evidenced by consuming < 50% of nutritional needs for 1 month and 14% wt loss and evident physical wasting.

Diagnosis 2: Dysphagia requiring PEG placement and enteral nutrition support to meet 100% of nutritional needs

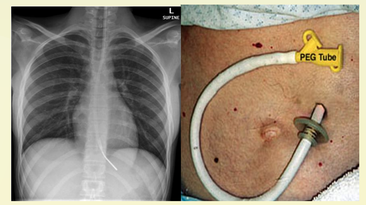
Diagnosis 3: Increased Protein Requirement related to wound healing as evidenced by increased metabolic demand to prevent catabolism and promote healing

Phosphate Levels

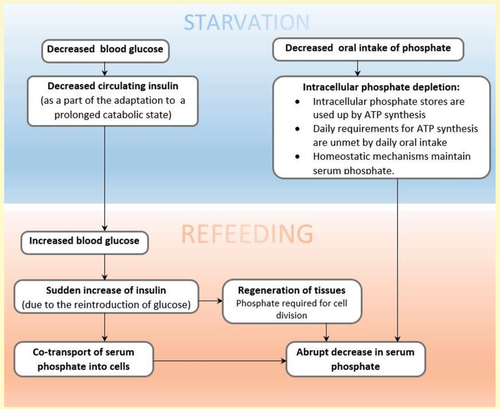


Enteral vs Parenteral

- Enteral nutrition refers to any feed method where nutrients are directly delivered to the GI, either to the stomach of small intestine.
- Typically Nasogastric (NG) or Nasojejunal (NJ) tubes are placed for enteral feeding
- For more long-term enteral nutritional support, surgical access to the GI is performed and a percutaneous endoscopic gastrostomy tube (PEG) is placed.



Refeeding Syndrome



Outcomes & Conclusion

- Early nutritional assessment can be beneficial to helping optimize surgical outcomes for at-risk patients.
- For patient who are not malnourished or who have mild-to-moderate malnutrition, surgery should not be delayed for preoperative enteral or parenteral feeding
- Patients with starvation may benefit from delaying surgery for 10 to 14 days to be fed.

Resources

- ASPEN: The American Society of Parenteral and Enteral Nutrition
- Uptodate
- American College of Surgeons