

NUTRITION

Weight Loss and Anorexia

A 65-year-old white male smoker with a history of colon cancer presents with anorexia and jaundice. He has had a 30lb weight loss over the past year.

Physical examination reveals a thin, yellow man with bilateral temporal wasting.

Study Questions

1. What is your presumptive diagnosis?
2. What conditions predispose surgical patients to malnutrition?
3. List the anthropomorphic, biochemical, and immunological measurements that can be utilized to assess this patient's state of nutrition and their relative value.

Multiple Trauma and Sepsis

A 30-year –old man sustain a 50% third-degree burn as well as a severe pelvic fracture from an industrial accident. Ten days after admission he has a fever of 40° C (104° F) and positive blood cultures for *Pseudomonas aeruginosa*.

Study Questions

1. How much does each of the following factors affect the caloric requirement of the patient? (a). Fever; (b). Sepsis; (c). Severe burns; (d). Starvation; (e). Bone fracture.

FURTHER INFORMATION

The patient is placed on total parenteral nutrition (TPN).

Study Questions

2. Match the deficiency with its systemic manifestation.

a. Zinc deficiency	1. Altered taste, perioral dermatitis, mental disturbance.
b. Folate deficiency	2. Clotting defect, elevated prothrombin time.
c. Vitamin K deficiency	3. Scaly skin lesions on arms and legs, alopecia.
d. Fatty acid deficiency	4. Fatigue, macrocytic anemia.

NUTRITION (cont'd)

Prolonged Coma

A 16-year-old boy sustains a severe head injury after a motorcycle accident. While comatose in the intensive care unit, he requires nutritional support.

Study Questions

1. Would you choose enteral or central vein hyperalimentation? List the advantage of each.
2. Match the complication with modality of alimentation.

a. TPN	1. Diarrhea
b. Enteral feeding	2. Hyperosmolar nonketonic coma
c. Both	3. Pneumothorax
	4. Trace element deficiency
3. Discuss how medical conditions such as diabetes mellitus, renal insufficiency, hepatic failure, and chronic congestive heart failure affect your choice of alimentation.

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Objectives

1. List at least four parameters obtained from a patient's medical history that might indicate the presence of malnutrition.
2. List anthropometrics and objective lab tests that are helpful in ascertaining a patient's nutritional state.
3. List at least four water-soluble vitamins, three non-water soluble vitamins and at least four trace elements that must be replaced in the patient on long-term parenteral nutrition.
4. Discuss the clinical applications of essential, non-essential, branch chain, and nonbranch chain amino acids.
5. List the daily requirements for fat protein and carbohydrate utilization by the body in a 70 kg man
6. List at least four metabolic changes that occur in long-term starvation and four metabolic changes that occur in short-term starvation.
7. Discuss the relationship between a patient's ability to respond to an immune challenge and his nutritional status.
8. List eight indications for nutritional support and three routes for supporting nutrition in the malnourished.
9. Contrast the risks and benefits of enterable and parenteral nutritional support.
10. List four adverse sequelae of a TPN catheter and four metabolic complications of total parenteral nutrition. Describe appropriate treatment of each.
11. Describe the impact of malnutrition on post-surgical morbidity.