**Case Study 33**

**KNH 411**

**Lynne Roller**

1. **Mr. Seyer has been diagnosed with adenocarcinoma of the esophagus. What does the term adenocarcinoma mean?**

Adenocarcinoma is a cancer is the most common type of esophageal cancer and it consists of cancerous tumors that are found in the lower part of the esophagus, near the stomach.

(National Cancer Institute, 2012)

1. **What are the two most common types of esophageal cancer? What are the risk factors for development of this malignancy? Does Mr. Seyer’s medical record indicate that he has these risk factors?**

According to the National Cancer Institute of the National Institutes of Health, the most prevalent type of esophageal cancer is adenocarcinoma (AC) and squamous cell carcinoma (SCC) is the second most commonly diagnosed esophageal cancer .

Mr. Seyer’s medical record reports that prior to his diagnosis, he had a BMI of 24.8 after his 30 lbs. weight loss, currently but his previous BMI was 28.5 which would classify him as being over-weight. According to the National Institutes of Health, being overweight is a risk factor for the development of adenocarcinoma cancer, of the esophagus. Mr. Seyer’s medical record also indicates that he smokes two packs of cigarettes a day. Research has found that smoking is a risk factor for esophageal cancer. Other risk factors that are listed in Mr. Seyer’s history that are concerning that could have contributed to the development of his esophageal cancer include: the 1-2 beers that he previously drank every night, being male, being between the ages of 45-70.

(MayoClinic, 2012) (National Institutes of Health, 2013)

1. **Mr. Sayer’s cancer was described as Stage IIB (T1, N1, M0). Explain this terminology use to describe staging of malignancies.**

The Tumor Node Metastases Staging System is what is used to define the stages of malignancies.

*T-is the depth of the tumor invasion*

T1 describes the size of tumor and the level of invasion in other surrounding structures. The larger the number the more it has spread to other surrounding structures and the larger the tumor is. Specifically: tumor invades lamina propria, muscularis mucosae, or submucosa.

*N-is the absence or presence and extent of regional lymph nodes*

N1 describes the size and location and the number of lymph nodes that are involved. The higher the number the more lymph nodes that are involved. Specifically: metastases in 1–2 regional lymph nodes.

*M-is the absence or presence of distant metastases*

M0-means that there were no metastases were found. Specifically: No distant metastasis.

IIB- is the stage/prognosis group. This indicates where the tumor is.

IIB specifically indicates that the tumor could be anywhere in the esophagus.

(National Institute of Cancer, 2012)

1. **Cancer is generally treated with a combination of therapies. These included-surgical resection, radiation therapy, chemotherapy and immunotherapy. The type of malignancy and staging of the disease will, in part, determine the types of therapies that are prescribed. Define and describe each of these therapies. Briefly describe the mechanism for each. In general how do they treat a malignancy?**

Surgical resection: This consists of a few types of therapies

*Primary* or definitive means that this will be the only surgery that a person will receive

*Adjuvant* is chemo reductive therapy, or rather chemo that reduces size and bulk of the tumor in addition to surgical removal of the mass.

*Combination* includes surgical resection followed by additional routes of treatment such as radiation and chemotherapy.

*Salvage* includes extensive therapy to treat local recurrences after a less extensive primary approach.

*Palliative* is used to ameliorate disease and treatment related to symptoms, but does not cure the cancer.

Surgical resection is used if the tumor can be removed without damaging too much of the surrounding areas, in other words surgery is the best option if the cancer is localized. Radiation is often used prior to radiation so that the mass is smaller. Surgery does allow for leakage of cancer cells and they may metastasize, which makes surgery risky in some cancers. Radiation may also be needed after surgery to help that leakage results from the removal of the mass. Surgical resection is most often chosen for the following cancers: head and neck, esophageal, gastric cancer, pancreatic cancer and intestinal cancer.

Chemotherapy: includes medications that interrupt different stages of cell replication. Types of therapies include:

*Combination Chemotherapy*- or multiple chemotherapeutic agents are used during the process because it decreases incidents to drug resistance. It also decreases overall toxicity of drugs.

*Adjuvant chemotherapy*- chemotherapy after surgery. This has the advantage of eliminating any cancerous cells that are left over after the surgery has taken place,

*Neoadjuvant chemotherapy-*this ischemo prior to surgery in order to shrink the mass so it can be more easily removed.

Chemotherapy is a treatment that is responsible for killing fast growing cells in the

Body. Cancer cells, multiply more quickly than the rest of cells in the body making them targets for chemotherapy treatments. This technique works great when cancer cells are hidden, it can kill cells that might remain after a procedure.

Radiation: Is therapy that is most common for treating head, neck and other localized cancers of the head. This kind of therapy is delivered via electromagnetic rays( gamma rays andx-rays). Radiation destroys cells by altering cellular and nuclear material. Radiation can cause toxicity in certain circumstances and thus patients must wear lead to avoid radiation in other parts of the body.

Immunological is a technique to boost or restore the immune system. This technique utilizes the body’s own immune system to eradicate the cancerous cells by making the cancer cells more recognizable to the body. Interferons and interleukins have been synthesized by drug companies and are used to treat melanoma and renal patients. Colony stimulating factors are given to patients to increase bone marrow production, this can be useful when other therapies are being used that may harm these cells. Monoclonal antibodies help the body to help make the destruction of cancer cells more effective.

In general a malignancy, or a cancer that spreads to the surrounding tissue, is treated by radiation. Often times there is a surgical removal of the tumor and then radiation or chemotherapy is done to remove any additional cancerous cells that still might remaining in the surrounding areas.

(Mayo Clinic, 2011)

1. **Mr. Sayer has transhiatal esophagectomy on 9/7. Describe this procedure. How may this effect his digestion and absorption?**

Esophagectomy is when a surgeon removes a portion of the esophagus. Usually the part that is removed consists of lymph nodes near and around the tumor and the site containing the tumor. This procedure also consists of moving the stomach up to meet the esophagus, to compensate for the space of the surgically removed portion of the esophagus. Depending on the case, sometimes part of the colon is used to replace the part of the esophagus. After the surgery the incision needs to heal, for this reason providing a feeding tube is standard procedure after a esophagectomy(Mayo Clinic, 2011). There I also sometimes adjuvant therapy that occur before the surgery and then radiation after, to decrease the size of the tumor and then to stop the future spread of any remaining cancerous cells that may not have been removed during surgery (Mayo Clinic, 2011). Removal of a tumor from the esophagus can create long term nutritional side effects such as intense weight loss(Mayo Clinic, 2011). Tumors can also increase Cori cycle activity which can lead to ketones altering glucose utilization(Nelms 710).. After his surgery he may need an increase in the amount of carbohydrates in order for his body to start using carbohydrates as a source of fuel instead of ketones (Nelms 710).

**6.) Many cancer patients experience changes in nutritional status. Briefly describe the potential effect of cancer on nutritional status.**

The type of cancer and treatment used can largely affect the nutritional status of a patient. Certain cancers that are more closely related to nutrition and food intake, such as cancer of the head and neck, or esophageal cancer, can make it difficult for patients to desire to eat. One treatment that can affect one’s nutritional status is chemotherapy. This fluid infusion can significantly increase nausea and other GI problems, which lead to lack of appetite. The symptoms associated with cancer can make eating very difficult, and most patients lose weight (Nelms 710).

**7.) Both Surgery and radiation affect nutritional status. Describe potential nutritional and metabolic effects of these treatments.**

Common effects of radiation will include fatigue, mucositis, dysphasia, or severe esophagitis. Dehydration is also a main concern, and should be observed by receiving intravenous fluids and electrolyte correction. Oral intake of food may become extremely difficult and a feeding tube may be needed. Esophageal cancer patients that receive surgery will often need a jejunal feeding tube placement (Nelms 712).

**8.) Calculate and evaluate Mr. Seyer’s % UBW and BMI**

%UBW= (100 X Actual Body Weight)/ Usual Body Weight

(100 X 198lb.)/ 228 UBW= **87% UBW**

BMI = Weight (Kg)/ Height (m^2)

198lb. /2.2= 90 Kg

190.5cm/100m= (1.905m)^2 = 3.63 m

90Kg/ 3.63m= **24.8**

**9.** **Summarize your findings regarding his weight status. Classify the severity of his weight loss. What factors may have contributed to his weight loss? Explain.**

Mr. Seyer’s BMI of 24.9 is within a normal range. According to his UBW of 30# heavier (228), his BMI would be 29, placing him in an overweight category. However, even though he is within a healthy BMI range now, he lost weight too rapidly with 14% weight loss within several months, placing him in a severe weight loss category (Nelms 48). Reasons for this rapid weight loss might be due to pain while eating. He reports dysphasia (pain from swallowing). He also complains of heartburn, which affects his appetite.

**10). What does research tell us about the relationship between significant weight loss and prognosis in cancer patients.**

Malnutrition is a major problem in cancer patients, which can often lead to significant weight loss. It is very important to maintain proper protein needs to prevent or reduce weight loss. It is also key to maintain hydration, since treatments such as chemotherapy can dehydrate a patient very quickly (Nelms 721).

 In a study done with patients with cancer of the head and neck, nutritional status was evaluated during and after treatment. Results showed a decrease in lean mass and body weight. Most were not able to maintain their nutritional status during treatment. However, the individuals that continued to take in sufficient amounts of protein, lost less body weight and lean mass (Jager-Wittenaar).

**11. ) Estimate Mr. Seyer’s energy and protein requirements based on his current weight.**

Using the Mifflin-St. Jeor equation, we can calculate Mr. Seyer’s energy requirements:

**10 X wt(kg) + 6.25 X ht (cm) – 5 X age (yrs) +5**

Weight: 198lbs=90kg

Height: 190.5 cm

Age=58

10 X (90kg) +6.25 X (190.5cm) – 5 X 58 +5 = 1796 kcal/day

= 2335kcal/day with activity factor of 1.3 to maintain weight

Using 30kcal/kg to estimate energy requirements due to the fact that he needs to gain weight after a 14% weight change in the past months and muscle wasting is shown in his physical.

30kcal/90kg

=2700kcal to gain weight

Protein Requirements:

1.5-2.5g protein/kg – this factor is used since Mr. Seyer is losing extreme weight and under treatment.

90kg X 1.5g protein/day= 135g protein/day

or

90kg X 2.5g protein/day= 225g protein/day

(Nelms 721).

**12.) Estimate Mr. Seyer’s fluid requirements based on his current weight.**

Based on 1mL/kcal= 1796mL of fluid needed to gain weight

1mL/kcal=2700mL of fluid needed to gain weight

**13.) What factors noted in Mr. Seyer’s history and physical may indicate problems with eating prior to admission?**

 Mr. Seyer had been experiencing Dysphasia for 3-4 months, along with odynophagia for 5-6 months prior to admission. He has also been experiencing heartburn for the past year. His weight has dropped significantly in the past months (30lbs), and he also complains of food being caught in his throat.

**14. Mr. Sayer’s is currently receiving enteral nutrition, specifically Insource HN at 75mL/hr.**

The formula: Calculate the amount of energy and protein that will be provided at this rate? He is being given Insource HN, which is a high nitrogen complete liquid formula that provides-1.2kcals/mL and 18% of the formula is protein 53% is carbohydrate and 29% is fat. The protein that the formula provides is 53g/1000mL. 1000mL or 1 L of HN provides 1,200 calories.

**Calculations for Enteral Feeding:**

1. **Calculate total of Enteral Formula for day at 75mL/hr.**

Calories: 75mL/hr. \*24 hrs/day=1800mL/day 1,800mL\*(1.2kcals/mL)= **2160kcals**/ day from Isosource HN

Protein: 1800mL/(100 mL/L)= 1.8L per day from Isosource HN 1.8L \* (53 g/L from Isosource HN)=**95.4 g** / day of protein from Isosource HN

1. **Next, by assessing the information on the input output record determine the actual amount of enteral nutrition that was recived on Sept. 11**

**Value from I/O chart on Sept 11th :**

Calories: 1735mL of P.O. formula =1735 mL \*1.2 kcals/mL in Isosource HN =**2,082 kcal/** day from Isosource HN

Protein: (1735mL)/(100mL/L)= (1.735L per day of enteral feeding) \* (53g/L from Isosource HN/ L) = **90.1 g**/ day from Isosource HN

**To maintain weight (REE with PAL factor of 1.3)**

Calories: (2,335kcals/ day) / (1.2 kcals/ mL in Isosource HN)= 1945.8mL/ (100mL/L )= 1.945 L of Isosource HN/ day

Rate: 1945.8mL/(24 hrs/day)=**81mL/hr** Isosource HN

Protein: 1.945 L of Isosource HN/ day \*(53g/L from Isosource HN)= **103 g** / day of protein from Isosource HN

**To gain weight: using 30kcals/kg**

Calories: (2,700 / day)/ (1.2 kcals/ mL in Isosource HN)=2250mL/ (100mL/L )= 2.250 L/ day

Rate: (2250mL Isosource HN)/ 24 hrs =**93.75mL/hr** Isosource HN

Protein: (2.250 L/ day Isosource HN) \* (53 g/L from Isosource HN)= **119.25g** / day of protein from Isosource HN

The enteral feeding that is currently being given to him is (2160-2335 kcals=175kcals) 175 calories short if the medical care teams is trying to have him maintain weight. If they would like Mr. Seyer to gain weight, which I would assume based on his dramatic weight loss, as evidence by the 30 lbs in the past few months, and muscle wasting state, as evidence by his physical, he would need 2,700 calories. If he needs 2,700 calories from his enteral nutrition, then his Isosource HN, at 75mL/hr needs to be increased to 94mL/ hr. to account for the additional 365 kcals that 2,700kcals/daily need requires. The protein that is provided by the high protein enteral formula, Isosource HN, is 119 g is not enough based the recommended amount of protein (135g) for patients suffering with a cancer such as Mr. Seyer (1.5 g/kg). This means that Mr. Seyer has a deficit of about 16g of protein.

1. Compare the 75mL/ hr. to his estimated nutrient requirements:

|  |
| --- |
| Comparison to Mr. Seyer’s Estimated Nutrition Requirements |
|  | Value from I/O chart | Currently Receiving | To maintain weight(REE with PAL factor of 1.3) | To gain weight(using 30kcals/kg) |  |
| Rate of mL/hr. | 60.24mL/hr | 75mL/hr | 81 mL/hr | 94 mL/hr |  |
| Total of Enteral Formula for day | 1.7 L | 1.8 L | 2 L | 2.25 L |  |
| Total Calories for day | 2,082 kcal | 2,160 kcals | 2,335kcals | 2,700 kcals |  |
| Total Protein | 90.1g | 95.4g | 103 g | 119g | 135g |

1. **Fluid Requirements Comparison:**

Fluid requirements that are recommended for a patient of enteral nutrition are: 1mL/ kcal. In this case Mr. Seyer is receiving 150 mL of fluid from his P.O. flush and 2,400mL of fluid from his I.V. His total fluid that he is receiving from his enteral nutrition is 2550mL. If he is striving to meet the 1mL/kcal for his 2,700 kcal target, to gain weight, then Mr. Seyer may need to consume an additional 150mL. However, I would caution giving Mr. Seyer any additional liquids because he is in a positive fluid balance of +335mL. His sodium levels are normal at 136mEq/L, but the nutrition care team should keep a careful watch for signs of edema because Mr. Seyer is holding water.

**18. Mr. Seyer Has been diagnosed with a life threatening illness what is the definition of terminal illness?**

A terminal illness is an illness that there is no cure for, diseases that are terminal usually are chronic or end in death. Some cancers can be terminal when there is no further treatment that can be implemented.

(Nelms,Sucher, Lacey & Roth 2011, p. 703).

**15.) What type of formula is Isosource HN? One of the residents taking care of Mr. Seyer asks about a formula with a higher concentration of omega-3-fatty acids, antioxidants, arginine, and glutamine that could promote healing after surgery. What does the evidence indicate regarding nutritional needs for cancer patients and, in particular, nutrients to promote postoperative wound healing? What formulas may meet this profile? List them and discuss why you chose them.**

 Isosource HN is a high protein and calorie formula (high nitrogen/energy). In comparison with the other formulas, Isosource HN has the highest concentration of omega-3-fatty acids, antioxidants, arginine, and glutamine, making it the best formula to promote healing after surgery.

 Evidence shows that cancer patients and postoperative patients with would healing need a higher amount of calories and protein (Nelms 721). A formula with high-calorie, high-protein, immune support, wound healing, or HIV support should be considered to be chosen for cancer patients with impaired digestion (Nelms 86). Isosource 1.5 Cal is a standard formula that would meet this high-energy, high-protein need, however, Isosource HN has a higher Omega-3 ratio.

**16.) Are any clinical signs of malnutrition noted in the patient’s admission history and physical?**

 Signs of malnutrition include Mr. Seyer’s weight loss of 30lbs (86% of his UBW and a 14% weight change). He also has complained of dysphasia and odynophagia, having pain swallowing. He also experiences heart burn and has experienced food being caught in his throat. His chemistry data shows low albumin, prealbumin, and total protein levels. These low values show clearly that he is not receiving enough protein in his diet.

**17.) Review the patient’s chemistries upon admission. Identify any that are abnormal and describe their clinical significance for this patient, including the likely reason for each abnormality and its nutritional implications.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Chemistry** | **Normal Value** | **Mr. Seyer’s Value** | **Reason for Abnormality** | **Nutritional Implications** |
| Total Protein | 6-8 | 5.7 | Inadequate Protein intake  | Increase protein intake |
| Albumin | 3.5-5 | 3.1/3.0 | Inadequate protein intake, dehydration | Increase protein intake, rehydrate |
| Prealbumin | 16-35 | 15/12 | Inadequate protein intake | Increase protein intake  |
| RBC | 4.5-6.2 | 4.2/4.3 | Malabsorption/side effect of cancer | Increase iron, B12, folate |
| Hemoglobin | 14-17 | 13.5/13.9 | Low RBC due to cancer | Increase iron, B12, folate |
| Hematocrit | 40-54 | 38 | Decreased RBC | Increase iron, B12, folate |
| Mean cell Hgb | 26-32 | 32.4/32.3 | Low RBC | Increase iron, B12 |

(Nelms,Sucher, Lacey & Roth 2011, p. 57)

**19. The literature describes how a patient and his family may experience varying levels of emotional response to a terminal illness. These may include anger, denial, depression and acceptance. How may this affect the patients nutrition intake? How would you handle these components in your nutritional care? What questions might you have for Mr. Seyer or his family? List three.**

It is common for patients who have advanced cancers to have less of an appetite. The patients will usually not even feel hungry, and if they are they will only consume small amounts of food. The whole health care team should be supportive in the families decision and should help the family to make the decision by providing them with the benefits and the risk of using nutritional support with a terminal patient. In most cases, terminally ill patients, status will not improve if they are put on enteral nutrition. However, there are a few cases where the individual will have an improved quality of life if they are to continue enteral feedings. Some of the benefits of enteral feeding include: making the patient more alert, making the family more comfortable, may relive patients nausea, may make the patient more hopeful. The harm of enteral nutrition while an individual is such as state include: surgery may be needed to place tube in the abdominal cavity, may increase the amount of saliva in the mouth and throat, may cause choking and or pneumonia, may cause diarrhea and or constipation, may cause infection.

If the patient is eating solid foods, encourage the family members not to force the individual with terminal cancer to eat. Although the thought is that eating well will bring us strength, terminal patients might not be hungry. Also, because of their state, they need less food than they did in the past. The family could focus on having their loved one eat smaller meals. If the family members are worried about the amount of food that their loved one is eating encourage them to talk to a doctor or dietician, don’t force them to eat.

Questions that should be asked about continuing nutrition support, according to the NIH National Cancer Institute are:

1. What are the wishes and needs of the patient and the family?
2. Will the patient quality of life be improved?
3. Doe the possible benefits outweigh the risks?

(National Cancer Institute, 2012)

20**. Select two high priority nutrition problems and state the PES statements.**

Inadequate protein energy intake (NI-5.7.3) related to metabolic abnormality due to cancerous state as evidence by estimated protein intake higher than recommended prescribed enteral nutrition therapy.

P: Inadequate protein energy intake (NI-5.7.3)

E: Metabolic abnormality due to cancerous state

S: Estimated protein intake higher than recommended prescribed enteral nutrition therapy.

Malnutrition (NI-5.2) related to insufficient enteral nutrition recommendations as evidence by weight loss of over 30 pounds in a two month period and signs of cachexia

P: Malnutrition (NI-5.2)

E: Insufficient enteral nutrition recommendations

S: Weight loss of 30 pounds over a two month period and signs of cachexia

21. **For each PES statement you have written, establish an ideal goal( based on the signs and symptoms) and an appropriate intervention( based on the etiology)?**

In the first PES statement the goal for Mr. Seyer is to increase protein. Intervention would consist of talking with the nutrition care team about the amount of protein that Mr. Seyer has been receiving. His protein needs to be increase, via enteral nutrition, by about 16g of protein, based on the 1.5g/kcal of protein needed for patients who have a serious cancer. The specific goal is to have Mr. Sayer having 135g/ day of protein via his enteral nutrition feeding so that he can return to a healthy enough state to be taken off of enteral nutrition.

The second PES statement the goal is for Mr. Seyer to be consuming enough calories to help maintain his body, while his body is recovering from his cancerous state. This intervention would also consist of talking with health care professionals about increasing his calorie needs to about 2,700 so that Mr. Seyer can gain back the weight that he has lost, while also accounting for his diseased state.

22. **Does his current nutrition support meet his estimated needs? If not determine the recommended changes. Discuss any areas of deficiency when implementing a new plan.**

With his current enteral nutrition rate is 75mL/hr. He needs are close to being met to maintain weight 2,335 kclas but do to the fact that Mr. Sayer has lost weight he needs to comsumer closer to 2,700kcals with 30kcals/ kg. To meet his needs for a 2,700kcal diet, the rate of the enteral nutrition should be increased to 94mL/ hr. this make up the difference of the kcals that are needed to help Mr. Seyer gain weight. Mr. Sayers protein needs are also not met with the 2,700kcal(94mL/hr) enteral feeding. Cataxia can occur if protein needs are not met, which results in loss of weight, wasting, decreased quality of life and decreased survival. In order to prevent this from happening he should also add a protein to his formula so that we can come closer to his goal of 135g of protein. He is also, according to his lab values, low in iron, folate and B12. These minerals should also be supplemented. Additional Omega 3 fatty acids could also be supplemented, they have been suggested to help stabilize weight in cancer patients who have experienced unintentional weight loss.

(Nelms,Sucher, Lacey & Roth 2011, p. 718).

23. **How many of these interventions (from 21) change as he progresses post-operatively? Discuss how Mr. Seyer may transition from an enteral feeding to an oral diet?**

 The first diet that he should start orally would be a clear liquid diet without caffeine. Staying hydrated should also be emphasized (Nelms,Sucher, Lacey & Roth 2011, p. 718). When Mr.Sayer is starting on an oral diet for the first time he should have small frequent meals, about 6-8/ day, to help prevent nausea symptoms that may occur (Nelms,Sucher, Lacey & Roth 2011, p. 718). Some patients develop dysgeusia and certain foods may not taste the same. Patients often develop a metallic taste in their mouth. It may help for them to use plastic silverware when eating (Nelms,Sucher, Lacey & Roth 2011, p. 718). An aversion to the taste of meat can also occur (Nelms,Sucher, Lacey & Roth 2011, p. 718) . This being said other foods that are high in protein such as cottage cheese, peanut butter and cheese or nutritional supplements can be encouraged (University of Virginia Health Systems). The nutrition care team should also educate him on sitting upright for 30-60 min. after eating, preparing foods that are soft and moist so that they are easily swallowed and to not drink carbonated beverages for 2 weeks after surgery(University of Virginia Health Systems). The nutrition care team might also suggest that he has a high calorie supplement if he is having a hard time getting enough calories (University of Virginia Health Systems). Once he is on a normal diet, sometimes up to two months after the surgery, he might have a hard time digesting because his system is not used to solid foods (National Institutes of Health, 2013). This may cause him to have diarrhea. He should make sure to stay hydrated in combination with his diarrhea symptoms (National Institutes of Health, 2013).

24. **List factors that you should monitor while Mr. Sayer is receiving enteral nutrition therapy?**

It is very important that while Mr. Seyer is onenteral nutrition that the nutrition care team is monitoring his status to make sure that he is not malnourished. It is especially important that he is receiving the proper amount of all the macronutrients. In cancer patients, a common cause of morbidity and mortality is malnutrition. Malnutrition can also diminish rate of survival and decrease overall quality of life. Cancer is a very complicated disease, monitoring cancer patients consists of constantly evaluating: anthropometrics, biochemical data, medical tests, nutrition-focused findings, treatments therapies, alternative medicines and food, nutrient histories, and drug nutrient interaction. The PG-SGA can be used to evaluate and monitor Mr. Sayers nutrition status. The PG-SGA has been found be a quick and accurate way to evaluate the patients nutritional status. The nutrition care team should also monitor to make sure that he does not develop diarrhea, nausea, cramping vomiting and dehydration from being on a tube feeding.

(Nelms,Sucher, Lacey & Roth 2011, p.726).

**25.) Mr. Seyer will receive radiation therapy as an outpatient. In question #7, you identified potential nutritional complications with radiation therapy. Choose one of these nutritional complications and describe the nutrition intervention that would be appropriate.**

One of the side effects of radiation therapy is dysphasia. If the individual is having severe trouble swallowing, it is necessary to surgically place a feeding tube to provide nutritional support for this patient. A Nasoenteric placed tube is often not encouraged because of the fragility of the esophagus after radiation (Nelms 716).

**26.) Identify major assessment indices you would use to monitor his nutritional status once he begins therapy.**

 A Subjective global assessment (SGA) can be used to assess cancer patients. It specifically gauges the patient’s perception of their own ability to accomplish self-care (Nelms 58).

 It is also important to monitor the status of Anthropometrics, Biochemical Data, Medical Tests and Procedures, Nutritional Focused Physical Findings, Treatments/Therapy/alternative Medicine, and Food/Nutrition-Related History.

 Mr. Seyer’s height and weight should also be monitored since he has previously lost a significant amount of weight. The scored PG-SGA includes criteria for evaluating weight changes. It

is also important to take Anthropometric measurements, such as skin folds, in order to determine whether or not the patient has lost fat or lean body mass.

(Nelms,Sucher, Lacey & Roth 2011, pg. 718).

Resources:

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