

Enteral Hyperalimentation in Surgical Patients

Pages with reference to book, From 191 To 192

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Administration of nutrient fluids, electrolytes and vitamins to provide normal growth and development and homeostasis was first described by Dudrick and his co-workers in 1968. This concept represents an extraordinary advance in the management of a variety of patients.

Patients requiring surgical intervention may benefit considerably from hyperalimentation if they are suffering from malnutrition. William et al. (1976) reported decreased incidence of morbidity and complications in patients where hyperalimentation was given before surgery. Such treatment can produce positive anabolic state with improved wound healing and sense of general well being (Silberman 1987). On the other hand there is an increased morbidity and mortality in malnourished patients.

Total parenteral nutrition as described by Dudrick et al., (1968) has been used successfully to reverse protein-Calorie malnutrition. Parenteral nutrition is the method of choice in patients with malfunctioning gastrointestinal tract. While patients whose gastrointestinal tract is functioning normally but are unable to eat, enteral hyperalimentation is the method of choice and can achieve results comparable to parenteral nutrition (Allardyce and Grover 1974, Yeung et al. 1979).

Enteral nutritional therapy may be administered orally, by nasogastric tubes or various types of tube enterostomies. Nasogastric tube feeding is possible only for short periods of time but if prolonged enteral nutrition is required a tube enterostomy should be established.

The advantages of enteral therapy is its low cost, better tolerance, safety and maintenance of function of gastrointestinal tract to near normal (Torosian and Rombean 1980). Administration of nutritional fluids is safe, does not require sterilization of equipment and the method of delivery is simple (Kaminski, 1976).

Various sites for the enterostomies have been used for feeding purposes namely pharyngostomy, oesophagostomy, duodenostomy, gastrostomy and jejunostomy but stomach and jejunum are the most common sites.

Feeding through a gastrostomy may be used for patients with Oesophageal obstructions, Oropharyngeal trauma or tumours, neurologic Conditions with impairment of swallowing and various postoperative states.

Gastrostomy is technically a simple procedure and if done properly it is associated with a low rate of complications. Smith and Farris (1961) reviewed 2,512 temporary gastrostomies and recorded only nine major complications. Similarly Parrish and Cohen (1972) report a complication rate of 3%. The incidence of complications appears to be high in paediatric population (Torosian and Rombean, 1980). In our own experience during the past 11 years no major complications have resulted from a temporary gastrostomy. Leakage, wound infection, haemorrhage and prolapse have been recorded by various authors (Engle, 1969, Sacks and Glotzer 1979).

Jejunostomy is indicated in patients with lesions of upper Jejunum, duodenum and stomach. Other indications for jejunostomy are similar to those discussed above. The main advantage of using a jejunostomy tube for feeding is reduced gastric reflux (Liffman and Randall 1972). Complications from jejunostomy include haemorrhage, infection, Catheter dislodgement, persistent fistulas and small bowel obstruction from adhesions (Boles and Zollinger 1952, Delany et al. 1977).

Hyperalimentation diets.

Enteral diets are classified according to their contents of proteins, Carbohydrates and fats and the extent of hydrolysis and Chemical Composition differ in different formulations. Complete enteral formulations include blenderized Partially hydrolysed and defined formula diets. Blenderized diets are

the least hydrolysed and less defined as compared to defined formula diet which contains precise amounts of free aminoacids, monosaccharides, lipids, vitamins and minerals (Russel, 1975). Blenderized and Partially hydrolysed diets have the advantages of low osmolality and large molecules which decreases the incidence of diarrhoea and provide increased calories with reduced osmotic load to small intestine. (Torosian and Rombean 1980).

The most suitable enteral diet will consist of oligopeptides alone or in combination with free amino acids, medium chain triglycerides and polysaccharides. Enteral nutritional therapy has improved the situation in many catabolic disorders both preoperatively and as a support therapy postoperatively. (Hindmarsh and Clark 1973, Mitty et al. 1976). Hyperalimentation prior to surgery in patients with Oesophageal lesions has considerably reduced both morbidity and mortality (Ahmad, 1980 Personal communication). Certain specific disease states such as intestinal fistulae and short bowel syndrome have been treated extensively with enteral hyperalimentation and considerable success has been achieved. (Himal et al. 1974, Holmes, 1977 Irving, 1977, Voitek et al 1973). The use of enteral nutrition in pancreatitis is controversial although occasional successes have been reported (Voitek et al 1973). Thus enteral feeding is safe, economical and well tolerated. In undernourished patients it can reverse the effect of protein-calorie deficiency with considerable improvement in morbidity and mortality in surgical patients.

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