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بالرسالة صفحات

لم ترد بالأصل

EVALUATION OF USING NASOGASTRIC TUBE DECOMPRESSION AFTER MAJOR ABDOMINAL SURGERY IN CHILDREN

THESIS

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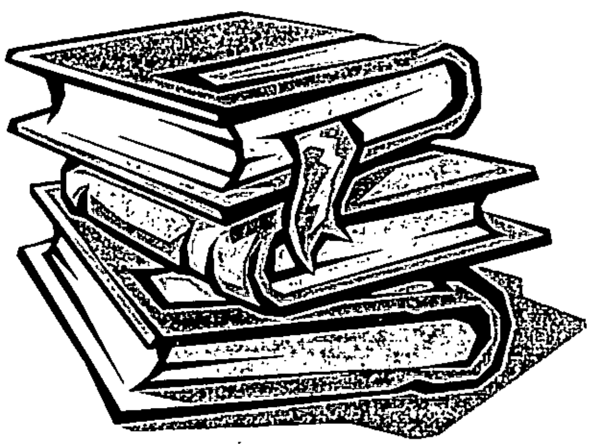

INTRODUCTION

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Nasogastric intubation is used routinely by many surgeons after both elective and emergency abdominal surgery, for gastric decompression to prevent acute gastric dilatation, to treat ileus, to monitor upper gastrointestinal haemorrhage, to start oral feeding and to reduce tension on suture lines, thereby reducing the risk of anastmotic dehiscence [1].

The use of nasogastric decompression may result in respiratory complications, gastro-esophageal reflux, fluid & electrolyte disturbance, injury to vocal cords and discomfort to the patient. Some of these complications may even promote continued ileus [1].

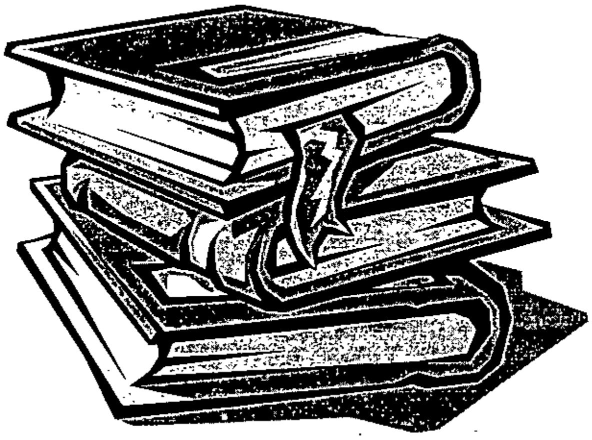
John Hunter was widely credited with the earliest use of nasogastric tubes. In 1790 he used eel skin stretched over whalebone to act as an enteral feeding tube in a patient with bulbar palsy who was unable to swallow [2].However, seven years later Alexander Munro claimed that 30 years previously his father had used a flexible tube of coiled wire covered with leather to effect decompression in cattle with excessive fermentation[3]. Such a tube is advocated by Philip Physick in 1800 to wash out the stomach of poisoned patient [4]. Then decompression of the stomach with a nasogastric tube was described in 1884 by Kussmaul [1].

Westerman in 1910 advocated the use of siphon drainage when paralytic ileus had developed secondary to peritonitis [1]. Matas in 1924 and Meyer in 1928, both used gastric tubes for aspiration and fluid administration [5.6].

In 1921, Levin described his design of nasogastric tube for the purpose of duodenal fluid analysis [7]. Later on, the use of nasogastric tube for bowel obstruction and postoperative ileus was popularized by Wangensteen and Pain. Over the ensuing fifty years it became surgical dogma that patients undergoing gastrointestinal surgery would require a nasogastric tube until their postoperative ileus resolved [8].

This dictum remained essentially unchallenged until 1963 where Gerber stated that routine use of nasogastric decompression after surgery was not only unnecessary but also could lead to complications specifically related to its use [9].

The use of nasogastric tubes hasn't been challenged in the pediatric literature. Children are thought to swallow a large amount of air when crying, and thus the use of nasogastric decompression following laparotomy is often routine [10].



REVIEW OF LITERATURE

Physiology Of The Gastrointestinal Tract

Physiologic Anatomy

Each part of the gastrointestinal tract is uniquely adapted for a specific function in the process of providing nutrients for the body, a process that continues from birth to senescence. Each major component of the gastrointestinal tract is described as a basis for understanding the overall structure and innervation of the gastrointestinal tract [11].

Oral Cavity and Pharynx:

The oral cavity is the usual point of entry for nutrients and is the site of the initial breakdown of nutrient substances into a usable form . Food is pushed toward the side of the mouth by the tongue to facilitate chewing and grinding on the surfaces of the molar and premolar teeth. As the food is manipulated and broken down, it is moistened by saliva secreted by three major pairs of salivary glands; the parotid, the submandibular, and the sublingual. Saliva serves three major functions that are important in the ingestion of nutrients:

- By its moistening action, saliva allows the tongue to convert a mouthfull food into a bolus, or semisolid mass, that can be swallowed easily.

- By its moistening action, saliva changes dry foods into a solute form and allows for taste perception by the papillae on the surface of the tongue, which are sensitive to chemical differences among food molecules.

- Salivary amylase is the digestive enzyme contained in saliva , initiates carbohydrate digestion by effecting the breakdown of polysacchrides into the simpler molecular structure of dextrin and maltose [11,13].

The pharynx, is a muscular tube about 12 cm long that serves as the entryway for both the respiratory and the gastrointestinal systems. The oropharynx is the portion of the pharynx posterior to the mouth and is separated from the nasopharynx by the soft palate. The laryngopharynx is the portion of the pharynx that opens into the larynx and the oesophagous. During swallowing, the soft palate is pulled upward to close off the nasopharynx [14].

The bolus of food being swallowed is propelled by the reflex movements of muscles in the pharynx through the laryngopharynx, Then into the esophagus. Simultaneously, the opening to the larynx is closed by the epiglottis . The coordinated set of actions prevents food substances and liquids from inadvertently entering the respiratory system, a potentially life-threatening occurrence referred to as aspiration [14].

Esophagus:

The esophagus is muscular tube approximately 25 cm in length . Passage of food through the esophagus is greatly facilitated by mucus secreted by cells in the epithelial lining. The stratified squamous epithelium lining the esophagus is constantly renewed by cells moving to the surface from below, thus providing a means of renewal for such damage . The esophagus propels nutrients to the stomach by means of strong muscular contraction, a capability that may be affected by aging [14,15].

At the lower end of the esophagus, about 2 to 5 cm above its junction with the stomach, the circular muscle of the esophagus functions as a sphincter, a region which is referred to as the lower esophageal sphincter . Although anatomically this sphincter is no different from the remainder of the esophagus, it remains tonically constricted, in contrast to the mid and upper portions of the esophagus, which are completely relaxed under normal conditions. Thus the lower esophageal sphincter serves to prevent the high acidic gastric contents from moving in a retrograde motion back into the esophagus. Under certain condition, lower esophageal sphincter does not function properly and reflux of gastric contents into the esophagus may occur [16.17].