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Review Article

Feeding jejunostomy and its implications among critical care patients - A review

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ABSTRACT

Jejunostomy is a surgical procedure where in a tube is placed in the lumen of proximal part of jejunum. This technique is mainly used to administer nutrition in case of patients with obstructive or operative area related to upper gastrointestinal system. This is one of the type to feed the nutrition and or medications by enteral means.

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1. Background

Feeding jejunostomy is a type of a surgical procedure in which an artificial tube is placed in the proximal part of jejunum. This technique is mainly used to administer nutrition in case of patients with obstructive or operative area related to upper gastrointestinal system. This is one of the type to feed the nutrition and or medications by enteral means.¹

In 1859 Bush, who successfully placed an artificial feeding jejunostomy tube on a patient with inoperable gastric cancer to take care of the nutrition.² Further Witzel, in 1891, developed a technique for jejunostomy creation through which the tube was placed easily for feeding purpose. Later a needle catheter technique was introduced by Delany et al. in 1973.³

2. Indications

This procedure is most commonly performed on the patient who is suffering with major carcinoma of upper gastrointestinal tract who are not operable or among the

patient who have undergone upper GI track surgery. The parts of upper gastrointestinal system include, esophagus, stomach, duodenum, pancreas, and hepatobiliary tracts. It is also performed among patients who underwent major abdominal surgeries and expected to have a complicated post-operative recovery. This procedure is performed for the patient with expected delayed feeding or patients in a hypercatabolic state requiring nutrition also this procedure is most common performed among patients who are expected to undergo or on chemoradiotherapy.⁴ Feeding Jejunostomy is commonly performed on patients who had duodenal and pancreatic resection due to trauma.⁵ Jejunostomy feeding is most commonly performed among patients with gastroparesis, which may be due to decreased gastric motor function or due to mechanical cause such as an inoperable tumor. Various drugs can be administered through the feeding jejunostomy tube especially levodopa-carbidopa for the treatment of Parkinson disease. This procedures are electively performed among patients who are undergoing major gastrointestinal surgeries like resection of the esophagus, stomach, pancreas, and duodenum with expected prolonged recovery time.^{6,7} This procedure is also performed whenever there is an inability to access

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for oral route cannot be accessed for nutrition or when nasoenteral access is impossible especially in head and neck surgeries. This is a preferred technique among patients who had exploratory laparotomy for other causes with expected complicated postoperative recovery.^{8,9}

2.1. Various types of anaesthesia for feeding jejunostomy Procedure

As a part of provision of adequate nutrition feeding jejunostomy is one of the palliative surgery.¹⁰ Since it is an upper abdominal intraperitoneal surgery the controlled mechanical ventilation under general anesthesia is required. In patients with difficult airway, this anterior abdominal wall surgery can be done under regional transversus abdominis plane (TAP) blocks with additional intravenous analgesic supplementation without handling airway. The intravenous Dexmedetomidine along with TAP block are used for performing this procedure. This combination also helped to reduce the need for opioids by providing supplemental analgesia with sedation. This technique will ensure adequate postoperative analgesia and thus overall analgesic requirement.¹¹ This procedure is also performed with local infiltration of local anesthetics like lignocaine with adrenaline and with or without bupivacaine combination. These combination helps in rapid onset of action and prolonged duration of action.¹²

Central neuraxial blockade like segmental thoracic epidural anesthesia is considered a good alternative to general anesthesia in abdominal surgeries as it has a better control on the required segments to be anesthetized. This technique has an added advantage of post-operative pain relief.¹³ In TAP block the local anaesthetic drugs are injected in a plane between internal oblique and transversus abdominis muscle. Visceral pain can be treated with coeliac plexus block while somatic pain with bilateral TAP block. The coeliac plexus block is not free from complications. This block provides satisfactory muscle relaxation for the surgeon and no pain is experienced during visceral handling.¹⁴

2.2. The feeding technique by jejunostomy route

It is ideal to initiate the enteral nutrition for the patients postoperatively or one who is on treatment with chemoradiotherapy. Since there are chances of anastomotic leakage if early enteral nutrition is initiated, the jejunostomy feeding is a very good alternative.^{15,16} As described above an artificial tube is placed in the jejunum and the liquid contents are fed through the tube. One should ensure to maintain the hygiene while feeding. It is not uncommon to see the infection surrounding the surgical site if proper care is not taken while feeding.

2.3. Complications related to jejunostomy feeding

The complications can be described into two different types as minor and major, infectious and non-infectious. Occlusion, dislodgement, leak, damage and infection at the entry point are of minor category. Sometimes patient may become intolerant for the feeds. Certain problems may actually cause life threatening complications, viz bleeding, intestinal obstruction, peritonitis etc. Complications can also be classified as early i.e within 30 days of jejunostomy placement and late if it occurs more than or equals to 30 days post procedure.¹⁷ Complications can also be related to mechanical cause ie tube blockage or removal or infective or metabolic.¹⁸

3. Mechanical

Intestinal obstruction is one of the common problems associated with this procedure. This is usually seen whenever over-inflation of the balloon is done. This can be easily managed by deflation of the balloon. Transverse Witzel technique is associated with the reflux of intestinal contents, intestinal ischemia and erosion of mucosa by the tube. Needle catheterization technique is associated with withdrawal or blockage of the catheter.

4. Infectious

Aspiration pneumonia, contamination of feeds are two most common infectious complications. The improper placement of jejunostomy tube is the cause for aspiration. A reflux action is commonly seen if the tube is placed proximally.^{19,20}

5. Gastrointestinal

The common causes noticed with gastrointestinal system are nausea, vomiting, diarrhea, abdominal distension, and colic pain.

6. Source of Funding

None.

7. Conflict of Interest


None.

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