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RESEARCH ARTICLE

AN UNUSUAL CAUSE OF ACUTE ABDOMINAL PAIN IN ONCOLOGY: JEJUNOSTOMY TUBE PLACEMENT COMPLICATION

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Abstract

The jejunostomy procedure is an alternative to oral feeding for patients incapable of oral nutrition or ones suffering from severe malnutrition.The most used surgical technique is the Witzel technique, it hasa very low complication rate but can cause severe complications such as perforation or bowel ischemia.We describe the case of an 80 years old female patient admitted to the ER foracute abdominal pain 9 days after a jejunostomy procedure, with an abdominal CT-scan showingperitonitis and pneumoperitoneum secondary to a jejunum perforation and intra-peritoneal displacement of the jejunostomy tube.

Introduction:-

Jejunostomy is a procedure used for patients with severe malnutrition in order to ensure a long-term nutritional support.

It can be done by endoscopy, surgery or even interventional radiology. It has a low rate of complications that can be severe.

We describe the case of an 80 years old patient admitted in our department for an abdominal CT scan. The patient hada tongue cancercomplicated by malnutrition to which a jejunostomy tube (JT) was placed9 daysbefore, causing severe acute abdominal pain and leading to the request of imaging that showedperitonitis with a jejunal perforation and displacement of the jejunostomy tube into the peritoneum.

Case Description:

An 80-year-old female patient was diagnosed of tongue cancer causing her severe malnutrition to which a surgical jejunostomy tube was placed. The patient went back home, and came to the ER for severe abdominal pain.

An enhanced abdominal CT scan performed in both arterial and portal phase showed pneumoperitoneum(Figure 1), abdominal cavity fluid, pneumatosis intestinalis of the jejunum (Figure 2)associated with its perforation by the jejunostomy tube placed outside of the jejunum wall behind the right kidney (Figure1).

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The patient was admitted in the ER for surgical reoperation that consisted of an abdominal wash out, perforation stitches and replacement of JT.

In her latest check-up, the patient recovered well, and is back to oral feeding.

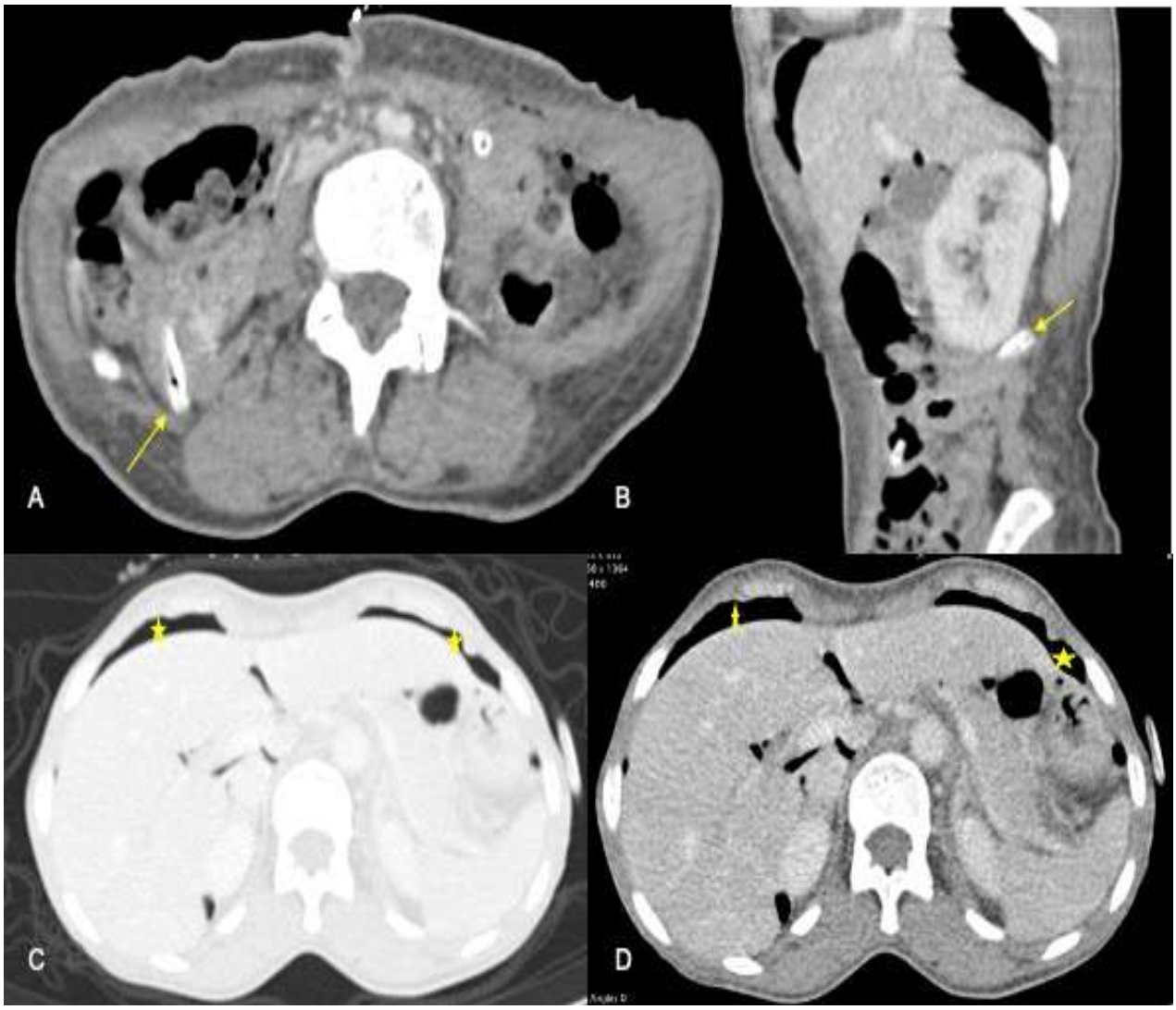

Figure 1:- Abdominal enhanced CT scan at portal phase with axial (A,C and D) and sagittal reconstructions (B) showing a displacement of the jejunostomy tube outside the jejunum into the peritoneum (yellow arrow; A and B), associated with pneumoperitoneum (yellow star; C and D).

Figure 2:- Abdominal enhanced CT scan at portal phase with axial (A,C) and coronal reconstructions (B) showing pneumatosis intestinalis of the jejunum (yellow arrow; A and B), and pneumoperitoneum (yellow star; B) associated with free peritoneal fluid (white star, C).

Discussion:-

Feeding jejunostomy is a nutritional alternative to patients with inadequate oral feeding intake, suffering from severe malnutrition, due to oropharyngeal or eso-gastric conditions benign, malignant or after surgery. [1], [2]

The procedure consists on inserting a tube into the jejunum through the abdominal wall [2]. The most common tubes used are either a Foley catheter, a Ryle tube, a Kehr tube or a needle catheter (Jejuno-cath) [3]

In 1958, Bush performed the first successful jejunostomy in a patient with inoperable gastric cancer, and in 1891, Witzel had developed its most used surgical technique.
In 1973 Delany et al. described the needle catheter technique. [1]

Feeding jejunostomy can be placed surgically through laparoscopy or open surgery, but can also be placed endoscopically or through interventional radiology. [3]

The jejunostomy tube (JT) placement has a 95% rate of success, however complications can occur, with an estimated rate of 2.1-12% for the Witzel technique and 1.5% for patients with a catheter placement. [3]

Complications reported are either mechanical, infectious, gastro-intestinal or metabolic.
Some were usually caused by the enteral supply of nutrients. [4]

One of the most frequent early post-operativemechanicalcomplicationis a clogged tube, usually due to the tube's small diameter. [5]

Dislodgment of the JT is the second most frequent complication, in which the tube can be replaced by interventional radiology.

Rarely, the dislodgment of JT with the constant pressure applied by the tip of the catheter against the bowel wall can cause jejunum perforation and intraperitoneal displacement, which requires a surgical approach for abdominal wash out, sutures of perforation and removal of the tube.[5]

Other mechanical complications include small bowel obstruction especially caused by balloon tubes, while enterocutaneous fistulas can be seen in patients with a long term placed JT.[5]

The presence of pneumoperitoneum more than 72 hours after placement of the JT and the presence of peritoneal signs should alert for complications.[2]

Infectious complications often reported are: Infection of the tube site, abdominal wall infection, subcutaneous abscess, and pneumonia caused from the aspiration and contamination of enteral feeding. [3]

Metabolic complications include hypokalemia, hyperglycemia and acid-base balance disturbances.[1]

Gastro-intestinal complications include vomiting, abdominal distension and pain, they can be caused by the type of feeds used or can alert severe complications.

Thus, imaging allows to evaluate the abdominal cavity, and the diagnosis for both infectious and mechanical complications.

An abdominal X-ray may show pneumoperitoneum.

An enhanced CT scan in portal phase, may show thickened bowel walls, pneumatosis intestinalis, free intra peritoneal air and fluid, and the placement of the JT inside the jejunum: dislodgment of JT, intra-peritoneal displacement, a leakage of JT, the presence of an infectious collection containing liquid and air with an enhanced thick wall.

Complications such as dislodgment or JT leakage can be treated through interventional radiology [5], whereas small bowel obstruction is mostly caused by an overinflation of the balloon therefore the deflation of the balloon is its treatment.[1]

In case of perforation, bowel ischemia, and intra peritoneal displacement, a surgical approach is required. [5]

Conclusion:-

Jejunostomy is a low risk feeding alternative for patients incapable of an oral nutritional intake. It prevents or treats people with severe malnutrition.

Complications related to JT are rare but can be very severe, such as perforation and bowel ischemia. Imaging allows diagnosis of these complications and interventional radiology has a major role in their treatment.

Abbreviations:
CT= Computed Tomography
ER= Emergency Room
JT= Jejunostomy Tube

Conflicts of Interest:
No potential conflict of interest relevant to this article was reported.

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