

Picture Story

Image guided naso-jejunal tube placement in paediatric liver transplant patients in low resource settings: Feasibility, technique, and outcome

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Sri Lanka Journal of Child Health, 2024; 53(3): 289-290

DOI: <http://doi.org/10.4038/sljch.v53i3.10912>

(Key words: Naso-jejunal tube placement, Paediatric liver transplant, C-arm guidance, Enteral nutrition, Postoperative care)

Introduction:

Liver transplantation is a critical procedure for children with end-stage liver disease. Post-transplant recovery is prolonged in some patients. Maintenance of nutrition at times is challenging. Placement of a naso-jejunal tube restores feeding in patients with poor gastric function. Squires RH, *et al*¹ demonstrated the successful placement of naso-jejunal tubes in children using fluoroscopic guidance. We describe a simple technique of naso-jejunal tube placement in a paediatric liver transplant patient using a C-arm.

Case

A 13-year-old patient underwent right lobe living donor liver transplantation and splenectomy for end stage cirrhosis due to Wilson disease. Patient developed gastroparesis and intolerance to oral feeds. It was decided to place a naso-jejunal tube to restore the nutrition.

Technique

Step 1: Prior to the procedure, the patient underwent a prescribed four-hour fasting period.

Step 2: The patient was placed in the supine orientation on the fluoroscopic table and subsequently administered sedation.

Step 3: The C-arm was meticulously positioned to capture fluoroscopic images of the upper abdominal region.

Step 4: In the procedure, a 5-French angiographic catheter (Headhunter, Cook) and a 0.035-inch hydrophilic guidewire were employed, with both introduced through the nasal passage to navigate through the pylorus and advance into the proximal jejunum (Image 1).

Step 5: Radiopaque contrast medium (Iohexol 300mg/50ml) was employed to enhance the visibility of the jejunal lumen through the catheter.

Step 6: A 15 French naso-jejunal tube was guided along the guidewire and introduced into the proximal jejunum.

Step 7: Verification of the naso-jejunal tube's positioning was achieved by administering contrast medium, which was injected while employing fluoroscopy to visualize the tube's location (Image 2).

Step 8: To secure tube in place, following the confirmation of its correct positioning, adhesive tape or a fixation device was employed to affix the tube to the patient's nose.

Outcome

A study by Gondolesi GE, *et al* (2005) demonstrated that early enteral nutrition via naso-jejunal tube placement resulted in better graft function and reduced postoperative complications in paediatric liver transplant patients. Postoperative naso-jejunal placement can be performed with endoscopic guidance or with image guidance. Image guidance has the advantage and the ability to place the tube distally beyond the duodenojejunal flexure. Further it avoids the need to use the endoscopy especially an advantage in paediatric patients.

Conclusion


The technique we describe here for the placement of a naso-jejunal tube in paediatric liver transplant patient within the theatre C-arm setting is feasible and effective. The use of real-time fluoroscopic guidance ensures accurate tube placement, enhancing patient safety.

References

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(Received on 19 December 2023; Accepted after revision on 19 January 2024)

The authors declare that there are no conflicts of interest

Personal funding was used for the project.

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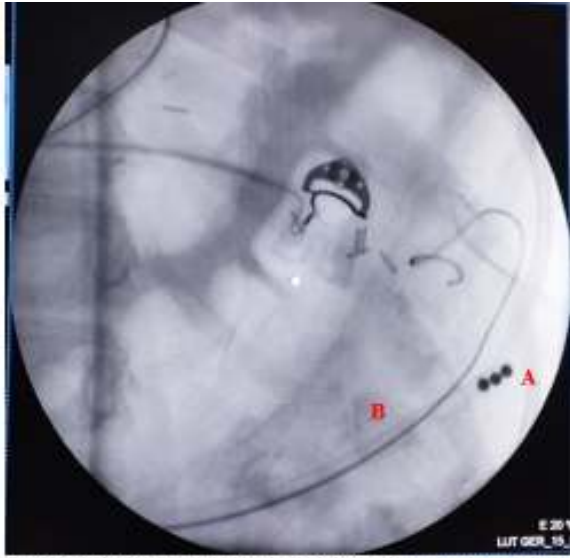


Image 1: The tube is guided over a stiff wire (AmplatzTM super stiff - gauge 035, length 260cm). A: tip of the NJ tube, B: stiff guidewire



Image 2: The position of the nasojejunal tube is confirmed using contrast medium. C: contrast in the proximal jejunum