Gastrostomies et complications

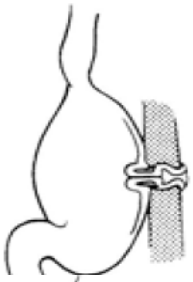
Q. Ballouhey

Hôpital de la Mère et de l'Enfant- Limoges

Cours de DESC de chirurgie pédiatrique
Paris le 23 septembre 2025

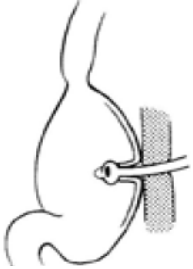
Historique

1635: 1ère Gastrostomie accidentelle (ingestion de couteau)

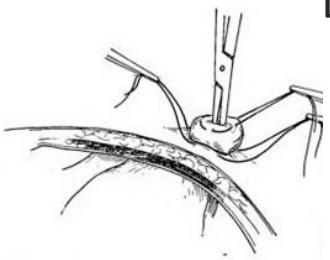


Fin 1870': Premières Gastrostomie chez l'homme

- Tube gastrique *(Janeway, Witzel)*
- Bourses autour d'une sonde *(Stamm, Fontan)*



Fin 1970': Percutaneous Endoscopic Gastrotomy *(Gauderer)*



Début 1990

- Gastrostomies percutanées sous vision laparoscopique (LAPEG)
- Gastrostomies cœlioscopiques (Ancres, points en U,..)
- Stamm – LAP (bourses)

Plus récemment:

- PEG: Pose du bouton définitif d'emblée

Les schémas ont été très gracieusement mis à disposition par le Pr Reinberg de Lausanne

Bibliographie

Percutaneous Endoscopic Gastrostomy in Children: An Update to the ESPGHAN Position Paper

*Matjaž Homan, †Bruno Hauser, ‡Claudio Romano, §Christos Tzivinikos, ||Filippo Torroni, ¶Frédéric Gottrand, #Iva Hojsak, ||Luigi Dall'Oglio, **Mike Thomson, ††Patrick Bontems, **Priya Narula, ‡‡Raoul Furlano, §§Salvatore Oliva, and ||||Jorge Amil-Dias

Description des indications, méthodes et complications des gastrostomies du point de vue des gastro entérologues pédiatres

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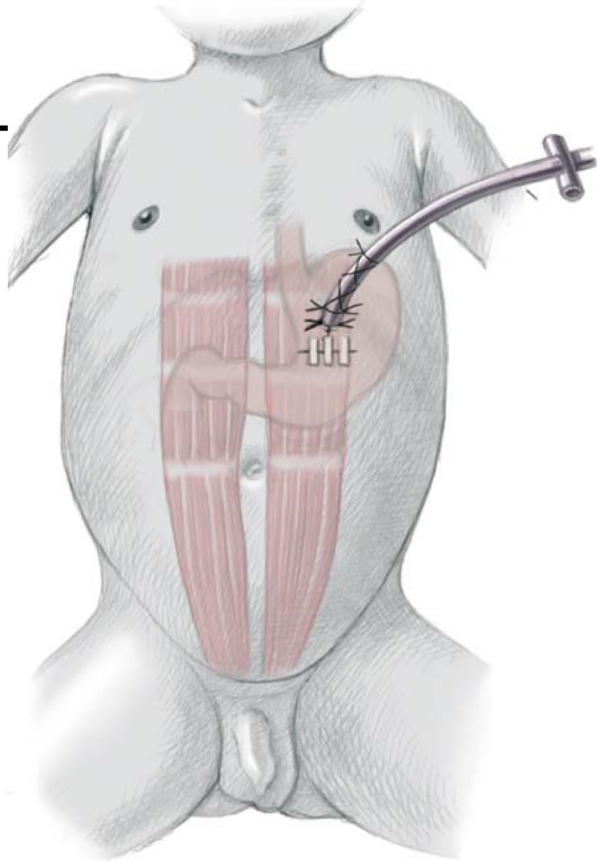
TABLE 1. List of statements and recommendations

Statements	Recommendations
A multi-disciplinary team should be involved in the decision to place, and the preparation of a child and family for, PEG insertion	Gastrostomy is recommended to support enteral nutrition to avoid malnutrition in chronic severe diseases
Routine concomitant fundoplication in the absence of significant GERD is not necessary	A PEG is indicated in situations of unsafe swallow
Where it is desirable to avoid a second general anaesthetic then a single stage PEG may be inserted as long as the requisite experience is available to do so	A PEG is indicated when non-oral nutritional support is anticipated to be required for a period of longer than 3–6 wk or when trans-nasal tube feeding is unsafe
NJ tubes can be correctly inserted by radiological or direct-vision endoscopic means and provide short-term proof of the efficacy and safety of this enteral feeding route	Antibiotic prophylaxis to prevent PEG site infection is recommended
PEG-J tubes and direct PEJ tubes can be endoscopically placed and provide a longer-term solution to the patient requiring this enteral feeding route	The type of device must be chosen according to the experience of the team and expectations of the family
Several non-operative techniques and surgery can be used to close a fistula post-removal after one month of non-closure	The standard pull-through technique is generally recommended with a change to a low-profile balloon/button device once the tract has formed
Gastrostomy has an effect on the physical, psychological and social quality of life of children and their caregivers	Family and caregivers should be trained how to use and manage the inserted device before discharge from hospital
	If pneumoperitoneum persists longer than 3 days post-procedure, a bowel injury should be excluded
	Extra care should be taken in patients with severe scoliosis
	Feeding can be initiated as early as 3 h post procedure in stable child with no complications
	Iso-osmolar feeds of standard polymeric formula is the best type of food to start with after the PEG insertion
	Replacing the initial tube with a gastric balloon/button should be recommended to the families/child who will need long term enteral nutrition to improve quality of life
	Gastric balloons should be replaced every 6 mo, but buttons can be replaced annually
	LAPEJ is a more permanent method of transpyloric feeding than PEG-J
	Direct jejunostomy is no longer recommended due to the higher rate of complications
	The decision to permanently remove PEG tube should be broadly discussed and agreed between the parents, the child and the and the health team providing care
	Quality of life using validated questionnaires should be monitored at the beginning and periodically thereafter to evaluate the impact of PEG

Indications cliniques

TABLE 2. Main indications for enteral feeding

Unsafe swallow, as in cerebral palsy or in cleft palate
Inadequate oral intake for supplemental feeds, as in cystic fibrosis or congenital heart disease awaiting proper weight for surgery and some cases of Down syndrome
Long dependency on continuous feeds, as in prematurity or short gut syndrome
Long gap oesophageal atresia in neonates
Acquired conditions that may limit oral feeding (eg, severe oesophageal strictures due to caustic injuries)



Contre-indications

TABLE 3. Contraindications for PEG placement

Relative contraindications	Risks	Management
Active gastritis/peptic ulcer	Bleeding/perforation	Treatment before PEG placement
Minor Coagulation/bleeding disorders	Bleeding	Treatment before PEG placement
Previous abdominal surgery	Change in positions of intra-abdominal organs	US or X-ray, feasibility endoscopic assessment
Gastric varices	Bleeding	Adequate preparation and planning
Portal hypertension (94,95)	Bleeding, worsening of portal hypertension, severe peristomal varices development	Careful risk assessment and preparation
Ascites (96)	Unsuccessful procedure, bleeding, peritonitis	Careful evaluation for severe ascites, laparoscopically assisted approach
Kyphoscoliosis/spinal deformity	Change in positions of intra-abdominal organs	US or X-ray, feasibility endoscopic assessment
Peritoneal dialysis (97,98)	Unsuccessful procedure, bleeding, peritonitis	PEG placement before dialysis start or laparoscopically assisted approach
Microgastria/large hiatus hernia	Unsuccessful procedure	Careful cost/benefit evaluation
Severe psychosis/anorexia nervosa	Worsening of psychosis	Careful cost/benefit evaluation
Lack of clear identification of the stomach wall during endoscopy (99)	Unsuccessful procedure, perforation and peritonitis	X-ray, feasibility endoscopic assessment, laparoscopically assisted approach

Cure RGO / Ab

STATEMENTS

An multidisciplinary team (MDT) should be involved in the decision to place, and the preparation of a child and family for PEG insertion.
Routine concomitant fundoplication in the absence of significant gastroesophageal reflux disease (GERD) is not usually necessary.

RECOMMENDATION

Antibiotic prophylaxis to prevent PEG site infection is recommended.

Ballonnet en 1 temps

STATEMENT

Where it is desirable to avoid a second general anaesthetic then a single stage PEG may be inserted as long as the requisite experience is available to do so.

RECOMMENDATION

The type of device must be chosen according to the experience of the team and expectations of the family. The standard pull-through technique is generally recommended with a change to a low-profile balloon/button device once the tract has formed.

Remplacement tous les 6 mois

RECOMMENDATIONS

Replacing the initial tube with a gastric balloon/button should be recommended to the families/children who will need long term enteral nutrition to improve quality of life.
Gastric balloons should be replaced every 6 months, but non-balloon PEGs can be replaced annually.

Cœlio pour les jéjuno transpyloriques

PEG-J tubes and direct PEJ tubes can be endoscopically placed and provide a longer-term solution to the patient requiring this enteral feeding route.

RECOMMENDATIONS

LAPEJ is a more permanent method of transpyloric feeding than PEG-J.
Direct jejunostomy is no longer recommended due to the higher rate of complications.

Fermeture chirurgicale à partir de 1 mois

STATEMENT

Several non-operative techniques and surgery can be used to close a fistula post-removal after one month of non-closure.

RECOMMENDATIONS

The decision to permanently remove PEG tube should be broadly discussed and agreed between the parents, the child and the and the health team providing care.

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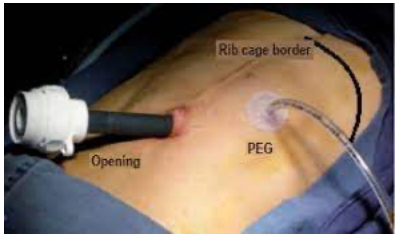
Résumé

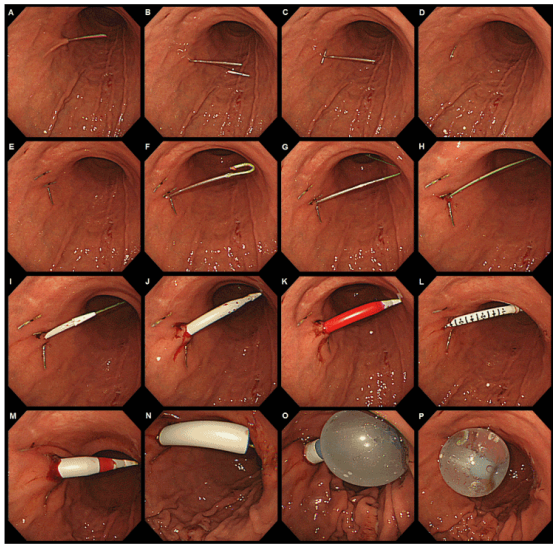
What Is Known

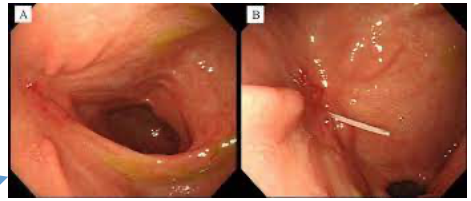
- Percutaneous endoscopic gastrostomy (PEG) is an interventional procedure that has become one of the most commonly performed in children.
- PEG insertion is a safe, quick and effective method that allows non-oral, enteral supportive nutrition in children who require it in the medium or long term.
- Despite the safety of the gastrostomy procedure, early or late complications can occur.

What Is New

- Feeding can be started 3 hours after gastrostomy tube placement in a stable child.
- Percutaneous laparoscopic-assisted endoscopic jejunostomy insertion is becoming more widespread.
- Single-stage PEG is becoming more popular with paediatric gastroenterologists.
- Closure of PEG fistulae may now occur with the Over-The-Scope-Clip placed by endoscopy.







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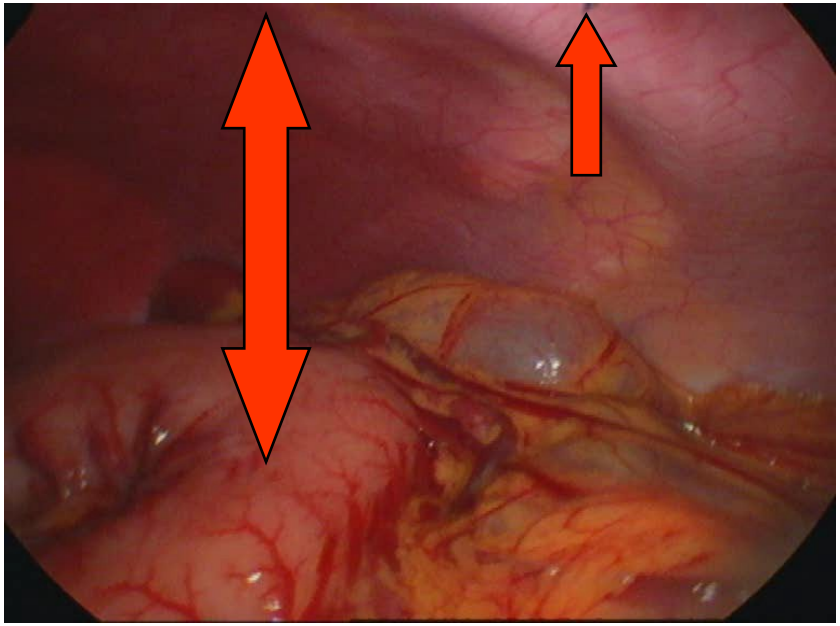
Problématiques de la Gastrostomie coelioscopique

- Distance estomac - paroi antérieure importante

- Difficultés d'exposition:

Gastrostomie « au plafond »



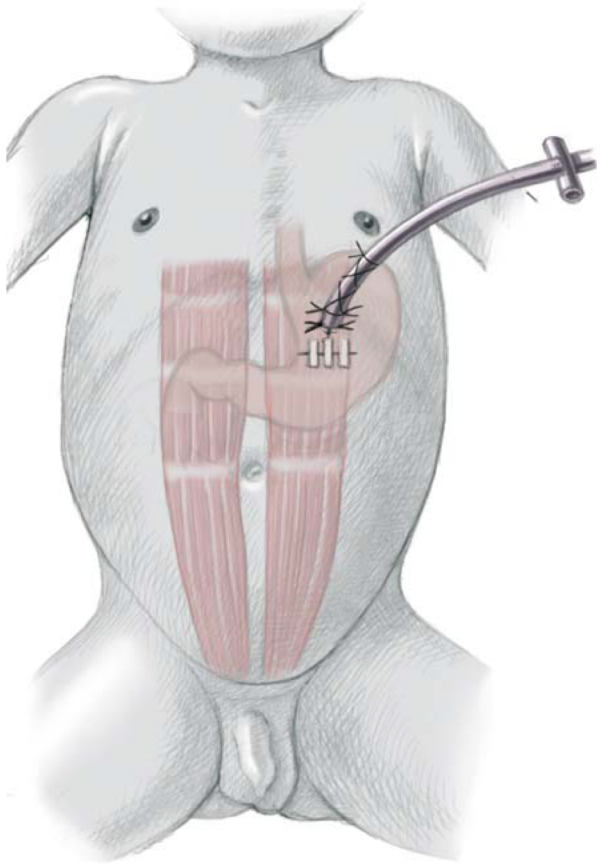
- Fixation de l'estomac à la paroi
  - Utilité d'une bourse?

- Possibilité de placer le bouton d'emblée

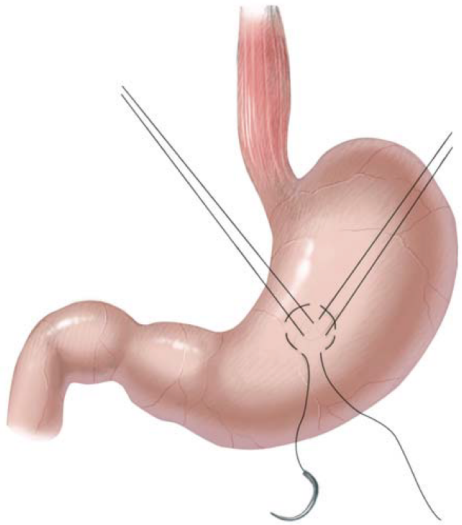
Technique par laparotomie

- Taille de l'incision
- Difficultés à repérer l'estomac
- Difficultés à se positionner sur l'estomac

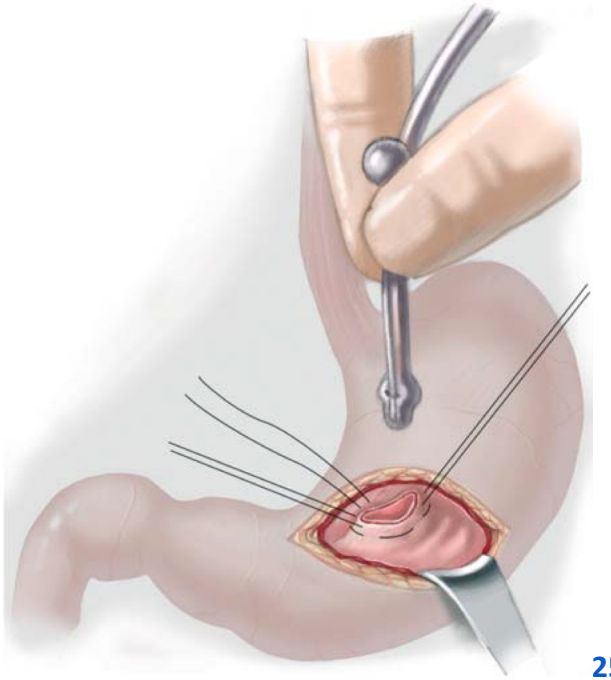
- …utilisée en complément
  d'une laparotomie concomitante



Les étapes en laparotomie

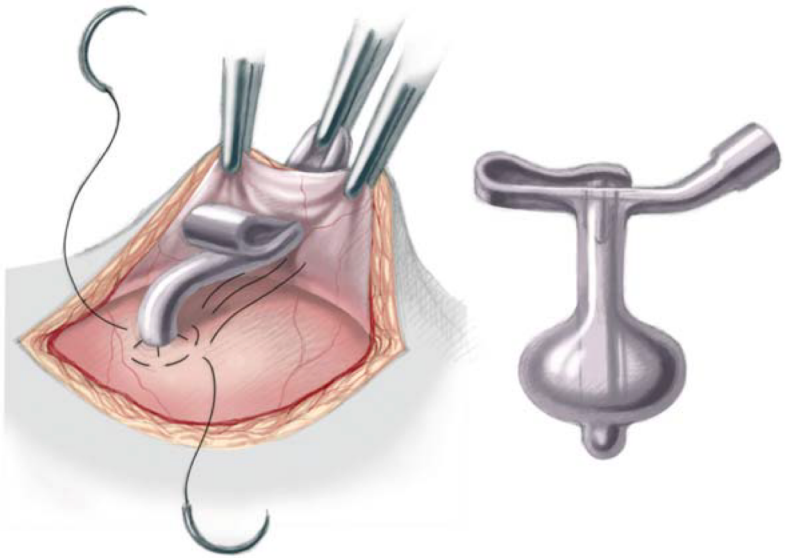


Confection d'une bourse (double) sur la face ventrale



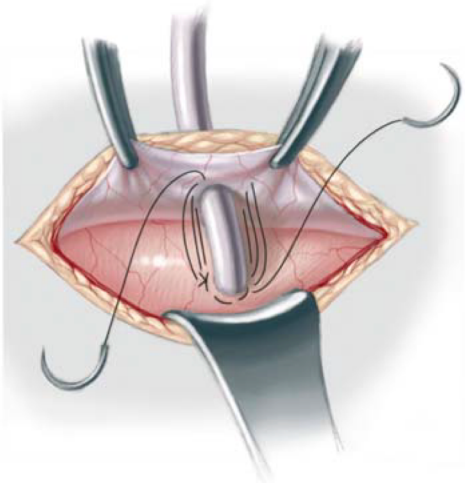
Puis ouverture de la séreuse et muqueuse

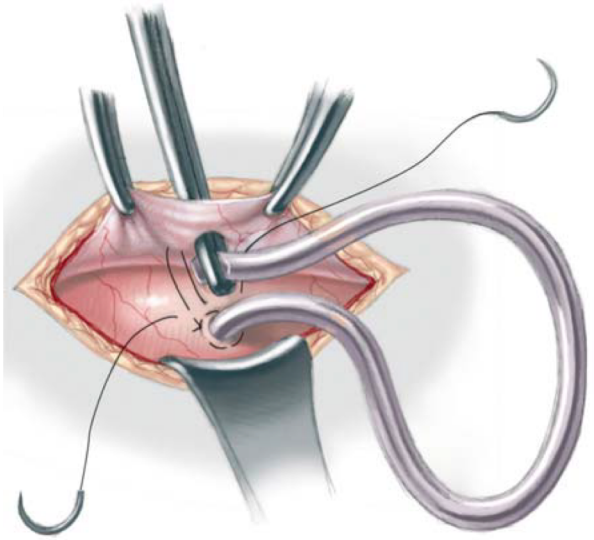
Soit un bouton d'emblée



Utilisation possible du mesureur

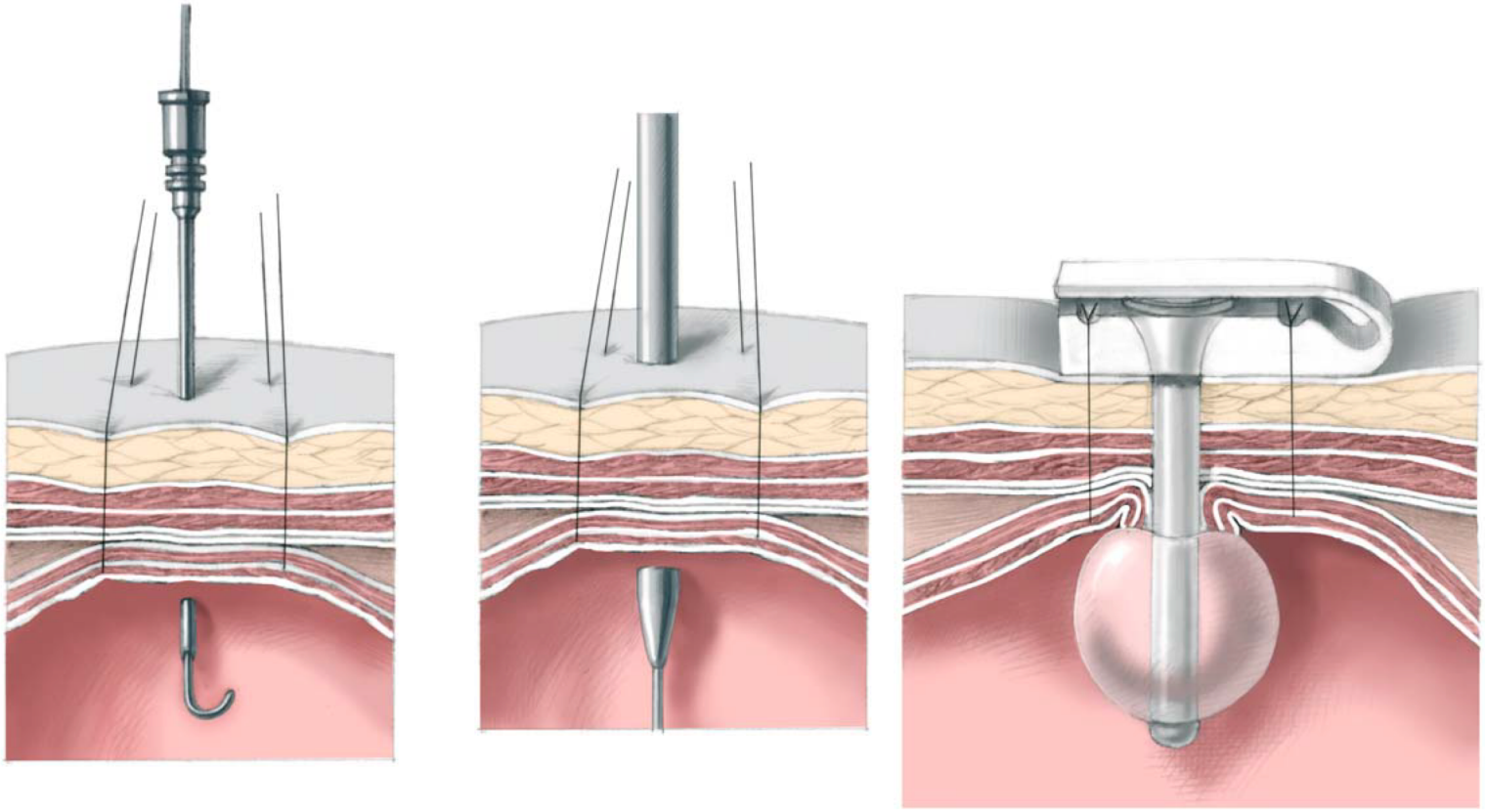
Soit sonde





Technique avec contrôle laparoscopique

- Parfois dernière partie d'un Nissen par cœlioscopie

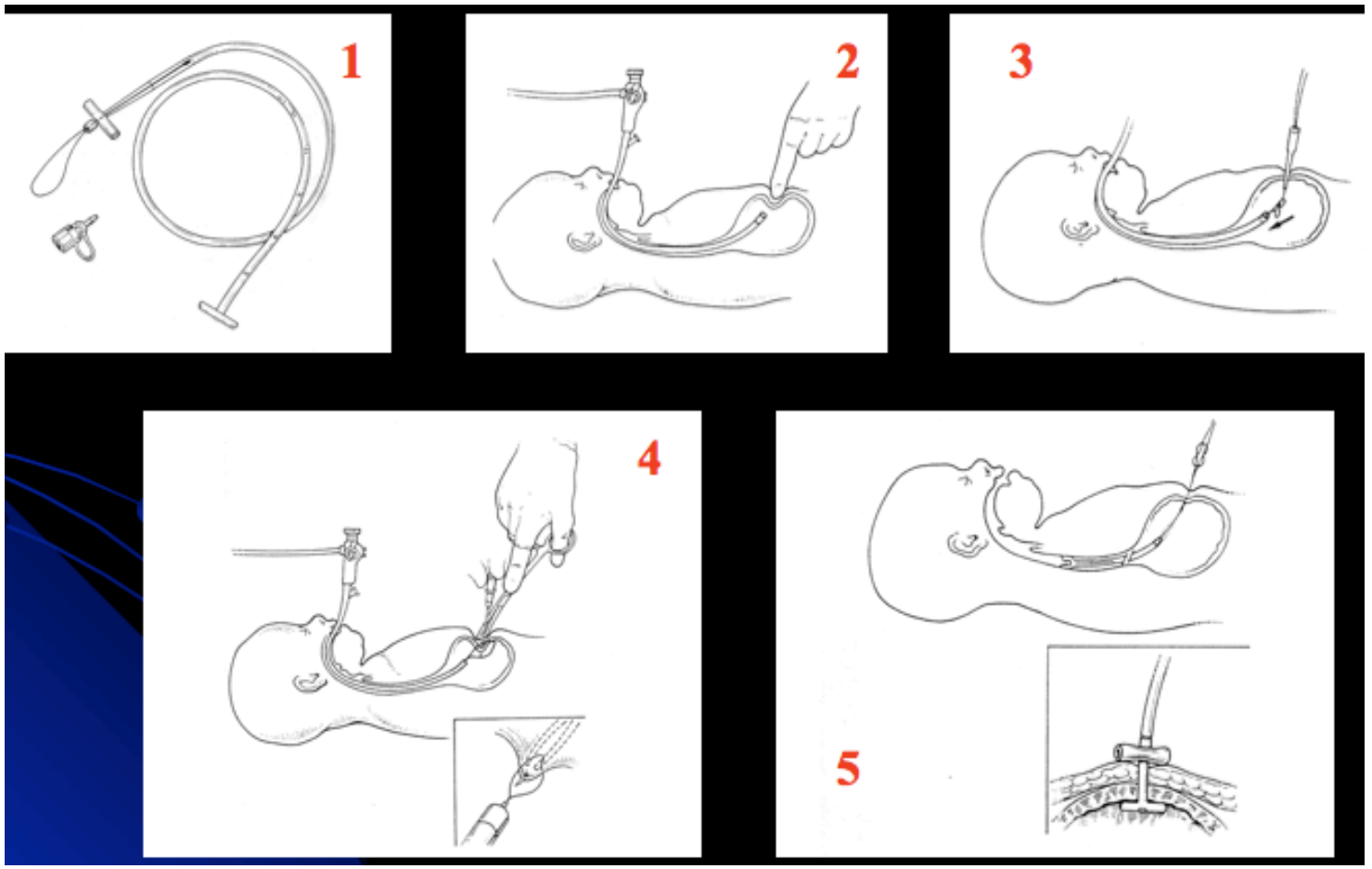


Limites

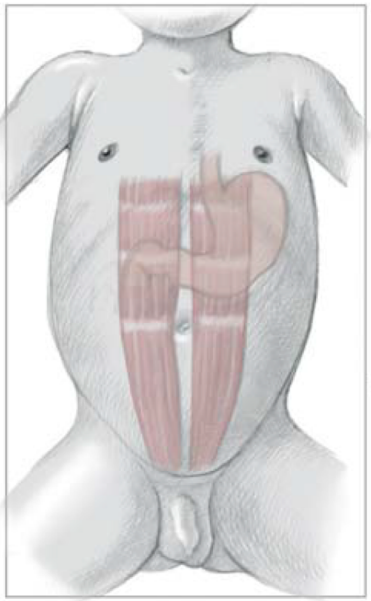
- Beaucoup plus sécuritaire si endoscopie car:

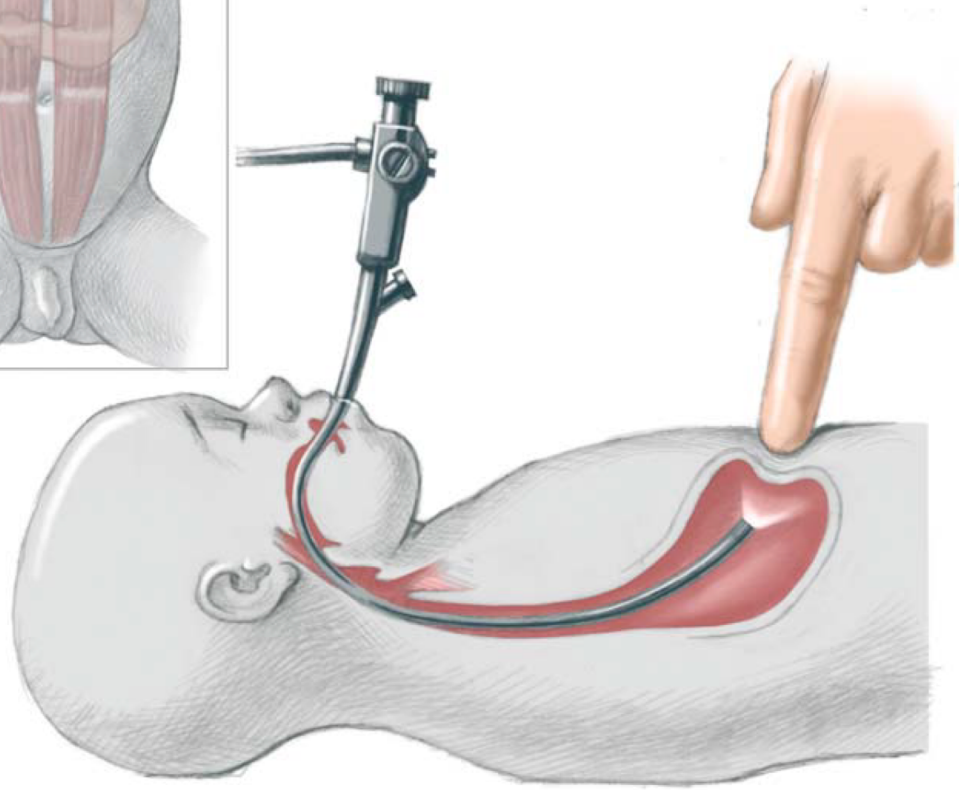
- Confirmation du bon positionnement de l’extrémité
- Position du ballonnet

Gastrostomie per cutanée

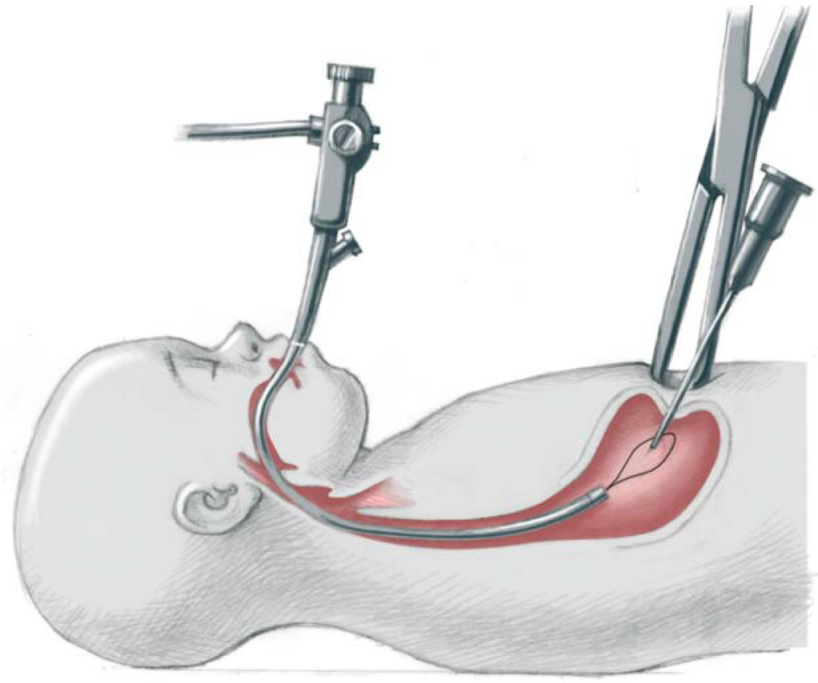


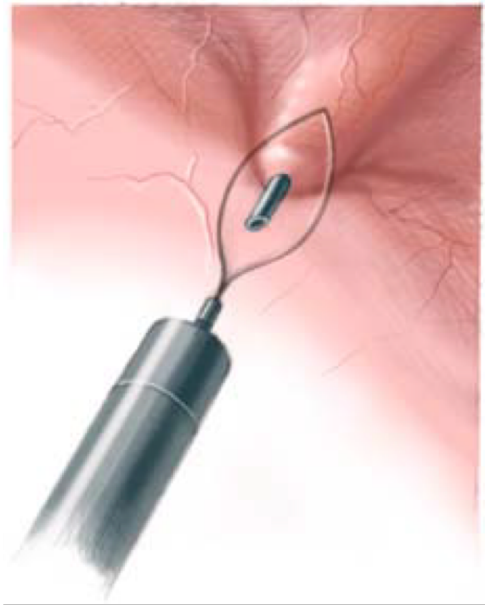
Faite par les gastro-entérologues, sous AG
Pas d'intervention de chirurgien





Les étapes

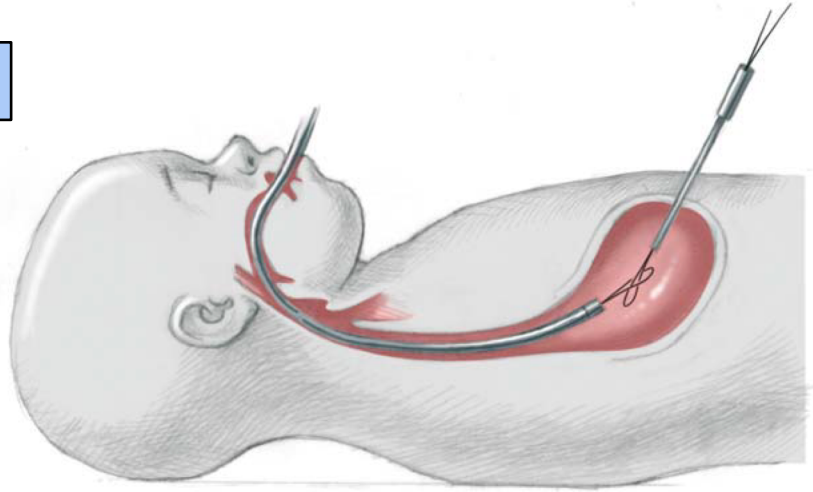




1 Repérage interne mais ponction externe/interne

Les étapes

2



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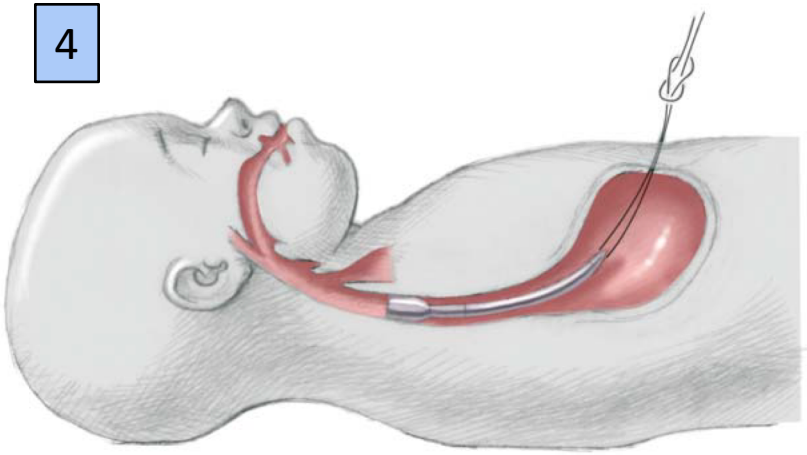

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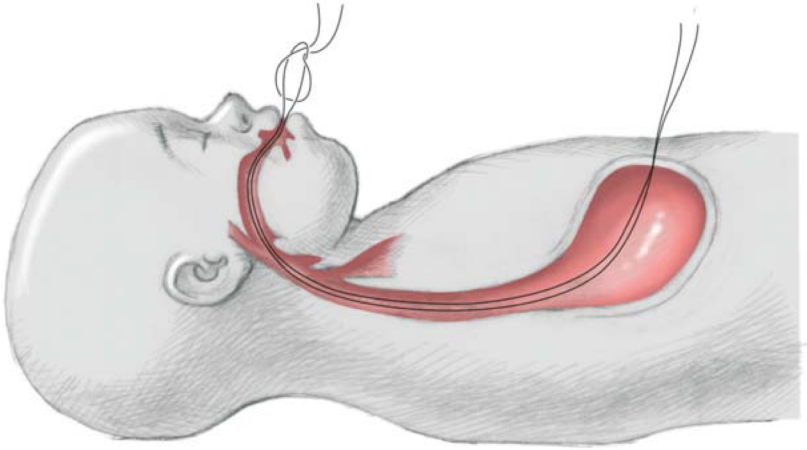

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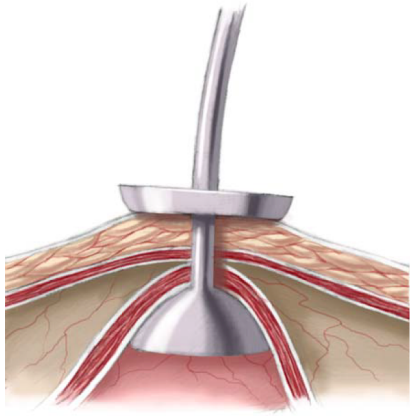
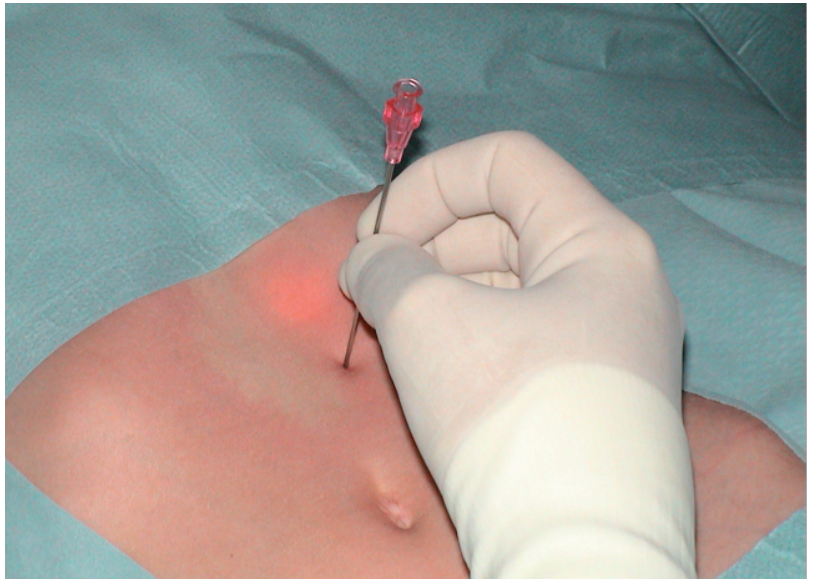


Passage transoral de la sonde



Changement de la sonde après 3 mois

Sous AG pour les petits

A remplacer par bouton conventionnel

Limites et complications

- Passage trans colique possible
- Mauvais amarrage de l’estomac
- Bouton dans le colon ou la cavité péritonéale

Complications en endoscopie

TABLE 4. Early/late complications after PEG placement

Early complication	Late complications
Abdominal wall abscess or cellulitis	Impaired wound healing—granulation—peristomal infection—track dehiscence
Intraperitoneal leakage of gastric contents	Intraperitoneal leakage of gastric contents
Gastric perforation	Gastric perforation
Transhepatic placement	Transhepatic placement
Epigastric artery bleeding and pseudoaneurysm	Malpositioning of the gastrostomy catheter within the abdominal wall
Aspiration pneumonia	Aspiration pneumonia-GERD worsening
Transcolonic placement	Transcolonic placement
Pneumoperitoneum (>3 days)	Post pyloric migration with possible dumping syndrome, mucosal damage-ulcer, lumen obstruction, pancreatitis
Hemo-peritonitis	Buried bumper syndrome
Tube clogging	Mechanical tube problems: dislocation, clogging, porosity, kinking or fracture
	Track disruption with PEG exchange to button
	Gastroparesis

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Que faire si pas d'endoscopie?

- Le chirurgien prend l'endoscope
- Ou bien changement de technique…

Technique Lyonnaise

Fixation à la paroi + Bourses gastriques

- ✓ Bourses sous cœlioscopie
- ✓ Aiguille extériorisée à l'aide d'un trocart
- ✓ Nœuds pré-aponévrotiques

Bouton d'emblée / Petite Incision

- ✓ Kit de pose percutané de bouton
- ✓ Estomac gonflé
- ✓ Mesureur
- ✓ Dilatateur pelable

Patients et Méthode

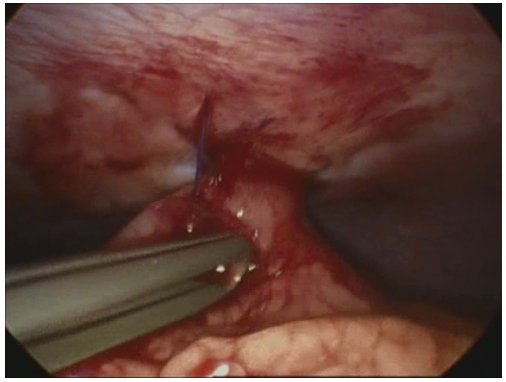
- Série rétrospective entre Février 2011 et septembre 2013

Résultats

- ✓ 59 patients (40 ont une pathologie neurologique)
- ✓ 7 mois à 18 ans (médiane : 6,3 ans)
- ✓ 5,8 à 68 Kg

- ✓ Durée gastrostomies: ?
  - ✓ Durée antireflux + gastrostomie (n=40): 110 min (48-185)
  - ✓ Dernières gastrostomies < 30 min

Résultats



Réalisation : 2 incidents per-opératoires

- Guide mal positionné ⇔ Estomac vide
- Insufflation de 60 à 100 ml d'air

Fixation et étanchéité

- 2 ablations précoces et accidentelles du bouton
- Pas de péritonite d'origine gastrique

➔ **Estomac reste fermé et amarré à la paroi abdominale**

Cicatrisation

- 40% granulomes résolutifs
  - sans intervention avec des soins locaux
  - ablation systématique du raccord si non utilisé

Discussion – Fixation de l'estomac

Points transparietaux: U-Stitch, ancres

- *Aprahamian et al 2006*, U-Stitch
  - 3% de réinterventions précoces
  - Mauvais positionnement gastrique / position extra-gastrique
  - abcès de paroi
- *Sampson et al 1996,* Ancres : 1 décès
- *Villalona et al 2011* : *Globalement bon résultats*

Techniques Type Endoscopie / Pas de bourse

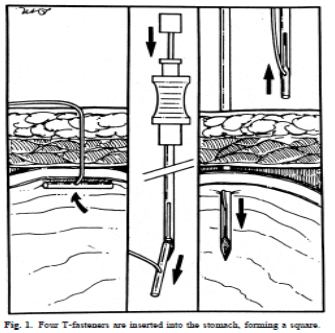
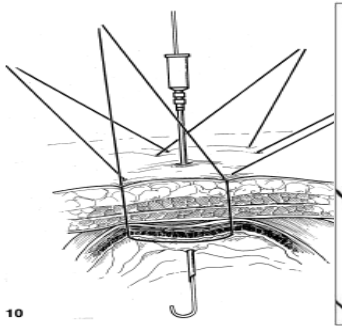
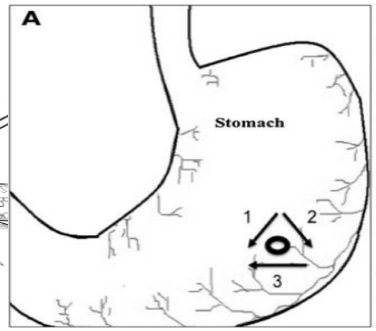
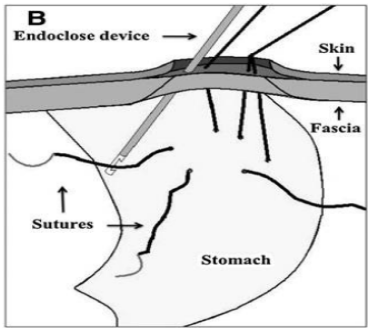


Fig. 1. Four T-fasteners are inserted into the stomach, forming a square.







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Films de la technique

- Aller chercher dans fichiers de construction

Un grand merci à l'équipe lyonnaise dont le docteur Rémi Dubois

Intérêt du contrôle endoscopique

- Bonne position du ballon dans l'estomac
- Guider l'opérateur au niveau de la paroi abdominale
- Contrôle de la fixation de l'estomac

- Intérêt du chirurgien pendant le geste
  - Contrôle de l'absence d'interposition de viscères entre paroi et estomac
  - Fixation de bonne qualité à la paroi

Littérature métanalyse: LP ou percut?

Pediatric Surgery International (2018) 34:1321–1327
https://doi.org/10.1007/s00383-018-4358-6

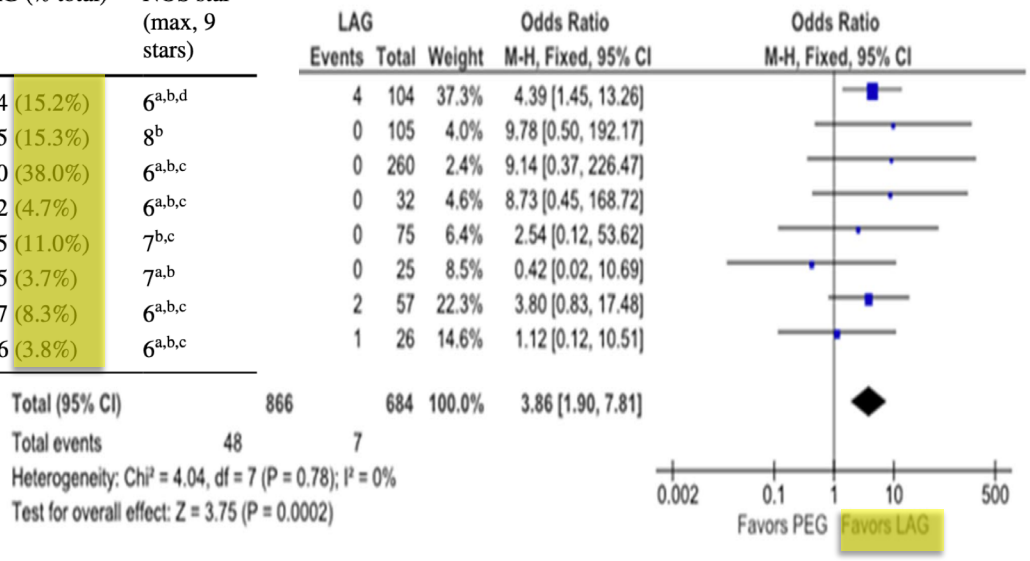
ORIGINAL ARTICLE

Comparison of major complications in children after laparoscopy-assisted gastrostomy and percutaneous endoscopic gastrostomy placement: a meta-analysis

Filip Sandberg[1,2] · Margrét Brands Viktorsdóttir[1,2] · Martin Salö[1,2] · Pernilla Stenström[1,2] · Einar Arnbjörnsson[1,2]

Complications Clavien 3b

References	Study period	*N* (% total)	PEG (% total)	LAG (% total)	NOS star (max, 9 stars)
Akay et al. [15]	2004–2008	238 (15.3%)	134 (15.5%)	104 (15.2%)	6[a,b,d]
Landisch et al. [16]	2011–2015	183 (11.8%)	78 (9.0%)	105 (15.3%)	8[b]
Liu et al. [17]	1998–2010	346 (22.3%)	86 (9.9%)	260 (38.0%)	6[a,b,c]
Merli et al. [18]	2004–2015	69 (4.5%)	37 (4.3%)	32 (4.7%)	6[a,b,c]
Petrosyan et al. [19]	2009–2014	225 (14.5%)	150 (17.3%)	75 (11.0%)	7[b,c]
Sulkowski et al. [20]	2010–2012	206 (13.3%)	181 (20.9%)	25 (3.7%)	7[a,b]
Wragg et al. [21]	2006–2009	164 (10.6%)	107 (12.4%)	57 (8.3%)	6[a,b,c]
Zamakhshary et al. [22]	2002–2003	119 (7.7%)	93 (10.7%)	26 (3.8%)	6[a,b,c]



Conclusion: plus de complications avec la voie endoscopique pure

LP ou percut: avis des parents

> Acta Chir Belg. 2025 Jun 18:1-8. doi: 10.1080/00015458.2025.2520698. Online ahead of print.

Parental satisfaction and long term standardized outcome evaluation after percutaneous endoscopic vs laparoscopic gastrostomy in children

Thomas Pattyn [1], Matthias Verbesselt [2], Kirsten Das [3], Ilse Hoffman [4], Marguerite Stas [5], Tania Claeys [6], Marc Miserez [7]

Introduction: Percutaneous endoscopic (PEG) and laparoscopic gastrostomy (LG) are two widely used techniques for gastrostomy placement in infants. We aimed to compare the risk of complications using a validated grading system and parent satisfaction.

Methods: Infants undergoing gastrostomy placement in a tertiary referral center were retrospectively included. Local and general complications were graded using the Clavien-Dindo (CD)system and categorized as early (≤ 30 days) vs late (>30 days) postoperatively. Parent satisfaction was evaluated prospectively using a questionnaire (Numeric Rating Scale 0- 10).

LP ou percut: avis des parents

› Acta Chir Belg. 2025 Jun 18:1-8. doi: 10.1080/00015458.2025.2520698. Online ahead of print.

Parental satisfaction and long term standardized outcome evaluation after percutaneous endoscopic vs laparoscopic gastrostomy in children

Results: Out of 102 patients, 52 underwent LG and 50 PEG. General complications (CD IIIa, IIIb and IV) were rare and occurred all late (n = 3), local complications were common: twice as much minor local early complications occurred in the LG cohort, however this was not statistically significant (28.8% vs 14.0%; p = 0.092). There was a trend toward more major local late CD IIIb complications in the PEG group, but this was not statistically significant (20.4% vs 8.0%; p = 0.088). After button removal, there was a higher risk of gastrocutaneous fistula requiring surgical closure after LG (53.1% vs 26.7% after PEG; p = 0.003). Parental satisfaction was high in both groups (mean score 8.3 for PEG vs 7.9 for LG; p = 0.341).

Conclusion: While the risk of general complications after gastrostomy placement is low, local complications are common. However not significant, PEG was associated with a higher risk of major long-term local complications, while LG required more surgical closures after button removal. Parental satisfaction was high in both groups. Further prospective comparisons are needed.

American Society for Gastrointestinal Endoscopy guideline on gastrostomy feeding tubes: summary and recommendations

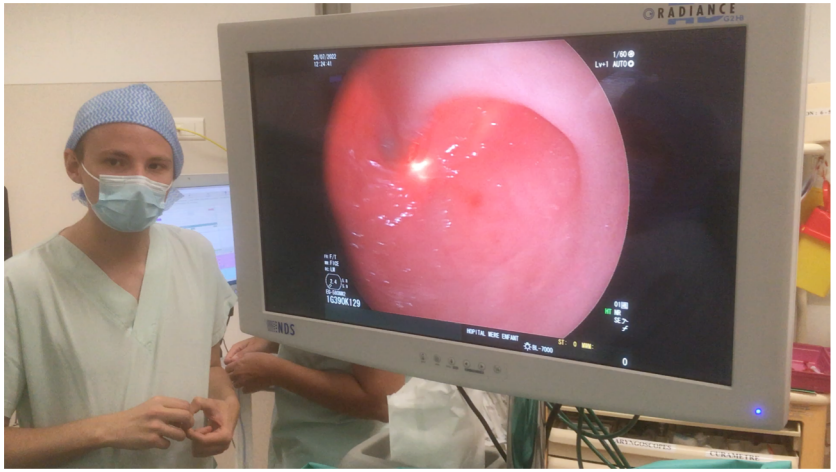
Prepared by: THE ASGE STANDARDS OF PRACTICE COMMITTEE

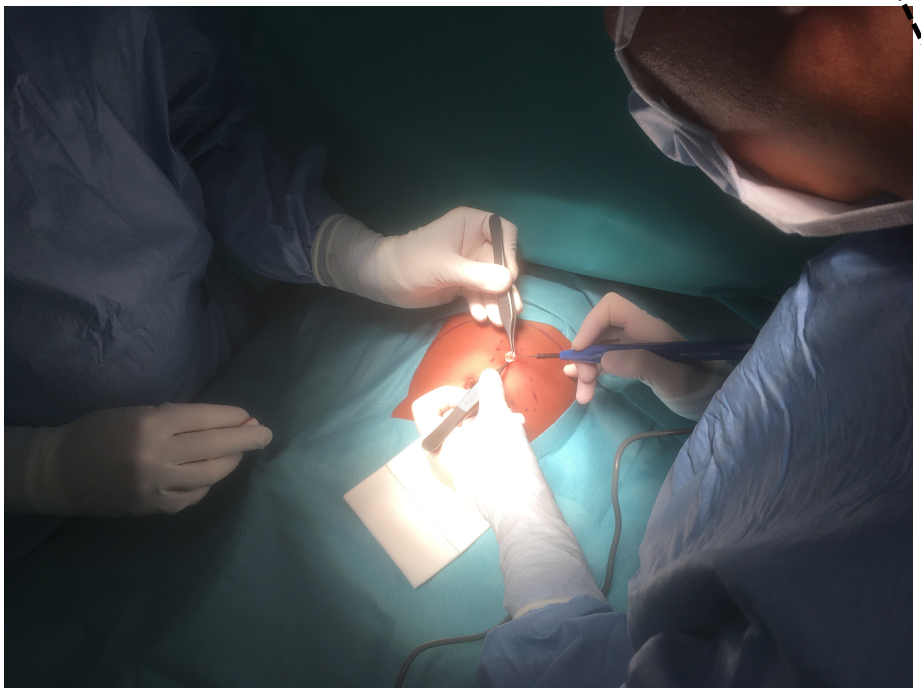
Gastrointest Endosc. 2025 Jan;101(1):25-35.

This clinical practice guideline from the American Society for Gastrointestinal Endoscopy (ASGE) provides an evidence-based approach for strategies to manage endoscopically placed gastrostomy tubes. This document was developed using the Grading of Recommendations Assessment, Development and Evaluation framework. The guideline addresses the utility of PEG versus interventional radiology–guided gastrostomy (IR-G), need for withholding antiplatelet and anticoagulant medications before PEG tube placement, appropriate timing to initiate tube feeding after PEG, and selection of the appropriate technique of gastrostomy in patients with malignant dysphagia. In patients needing enteral access, the ASGE suggests PEG as the preferred technique for initial gastrotomy over IR-G. The ASGE recommends that tube feeding can be safely started within 4 hours of gastrostomy. The ASGE suggests that PEG can be performed without withholding antiplatelet medications. The ASGE suggests that the periprocedural management of anticoagulants should be based on a multidisciplinary discussion regarding the risk of bleeding versus cardiovascular events. In patients with malignant dysphagia, either transoral "pull" PEG or direct PEG can be performed for initial enteral access. (Gastrointest Endosc 2025;101:25-35.)

La technique à double équipe

Champ stérile
chirurgien

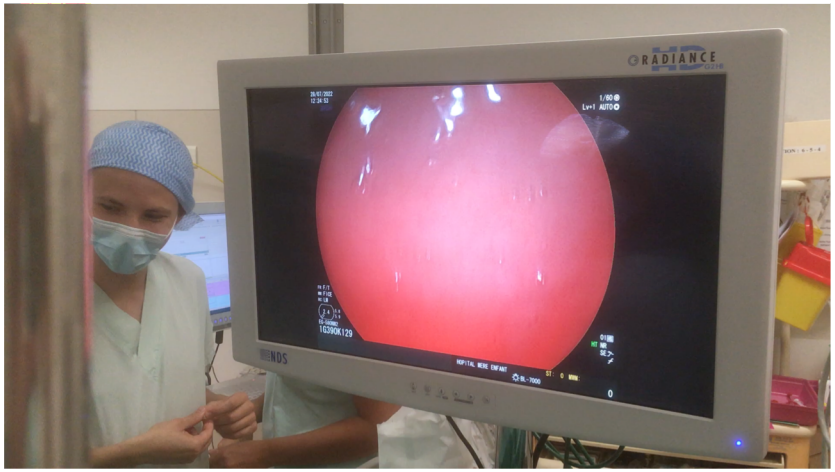




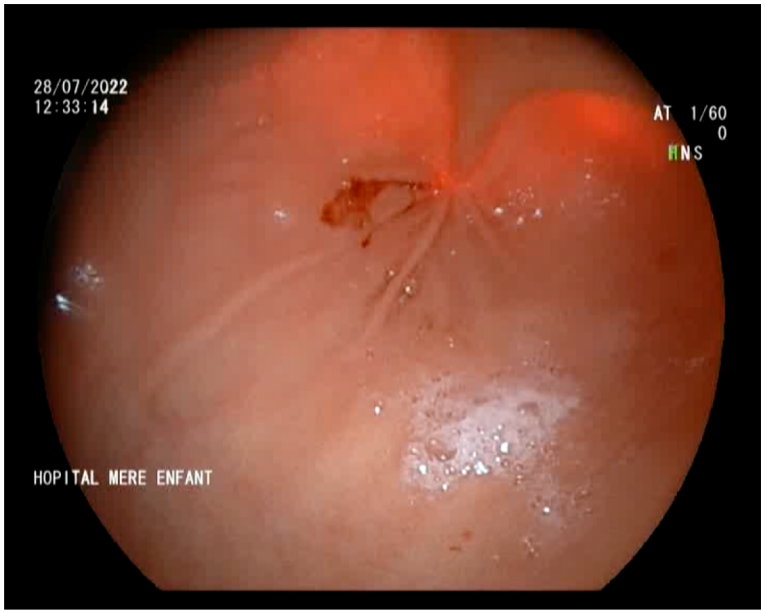
Tête
-anesthésiste
-gastro entérologue

Repérage face antérieure

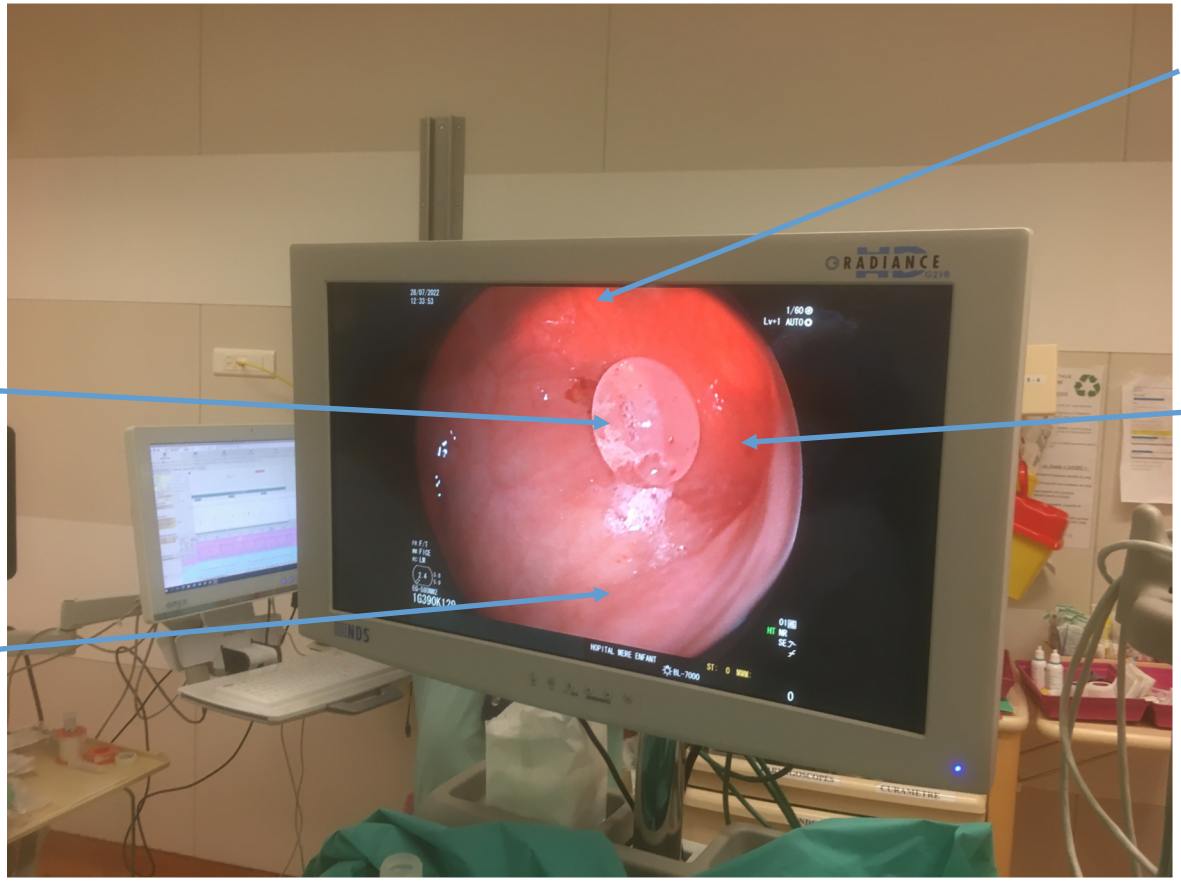
Repérage zone d'implantation



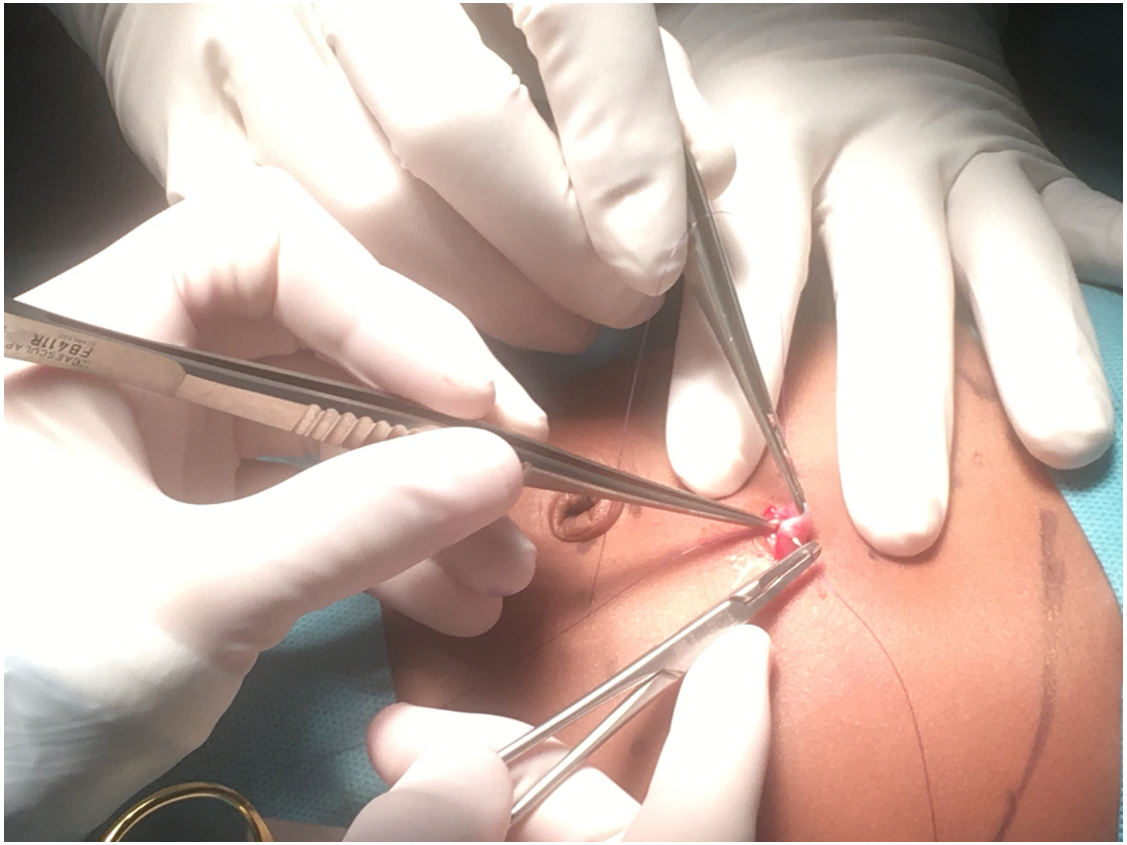
Gonflage ballonnet



Ballonnet gonflé



Champ opératoire



Mesureur de bouton

Chirurgie ambulatoire?

Pediatric Surgery International (2025) 41:72
https://doi.org/10.1007/s00383-024-05929-0

ORIGINAL ARTICLE

Day-case gastrostomy insertion in children: an achievable reality

David Thompson[1] · Maddie Allam[1] · Karen Dick[1] · Jo Leigh[1] · Rhoda Taylor[1] · Charlie Keys[1] · Lara Kitteringham[1] · Ori Ron[1] · Michael Stanton[1] · Francesca Stedman[1] · Nigel J. Hall[1,2]

Abstract

Purpose Recent efforts have sought to streamline gastrostomy insertion care, particularly length of stay (LOS). We report our initial experience with day-case gastrostomy (DCG) insertion.

Method Retrospective review (April 2018–2024) of all primary gastrostomy insertions. Patients discharged the same day as the procedure were defined as DCG. Demographic, operative, and clinical data were recorded. All cases were treated according to a standardized feeding pathway.

Results Of 432 gastrostomies formed, 15 were DCG; median age 3.5 (0.7–16.9) years, LOS 12 h (9–15 h). The most common indication was nutritional supplementation ($n=9$). Gastrostomy technique was single-stage percutaneous rapid insertion of gastrostomy button (SPRING $n=5$) or percutaneous endoscopic gastrostomy (PEG $n=10$). Prior to insertion, 6/15 DCG were established on nasogastric (NG) feeding, 8 did not use NG feeding, and 1 had occasional NG feeds. The majority (13/15) were performed on morning operating lists. There were 4 minor complications; 2 required readmission.

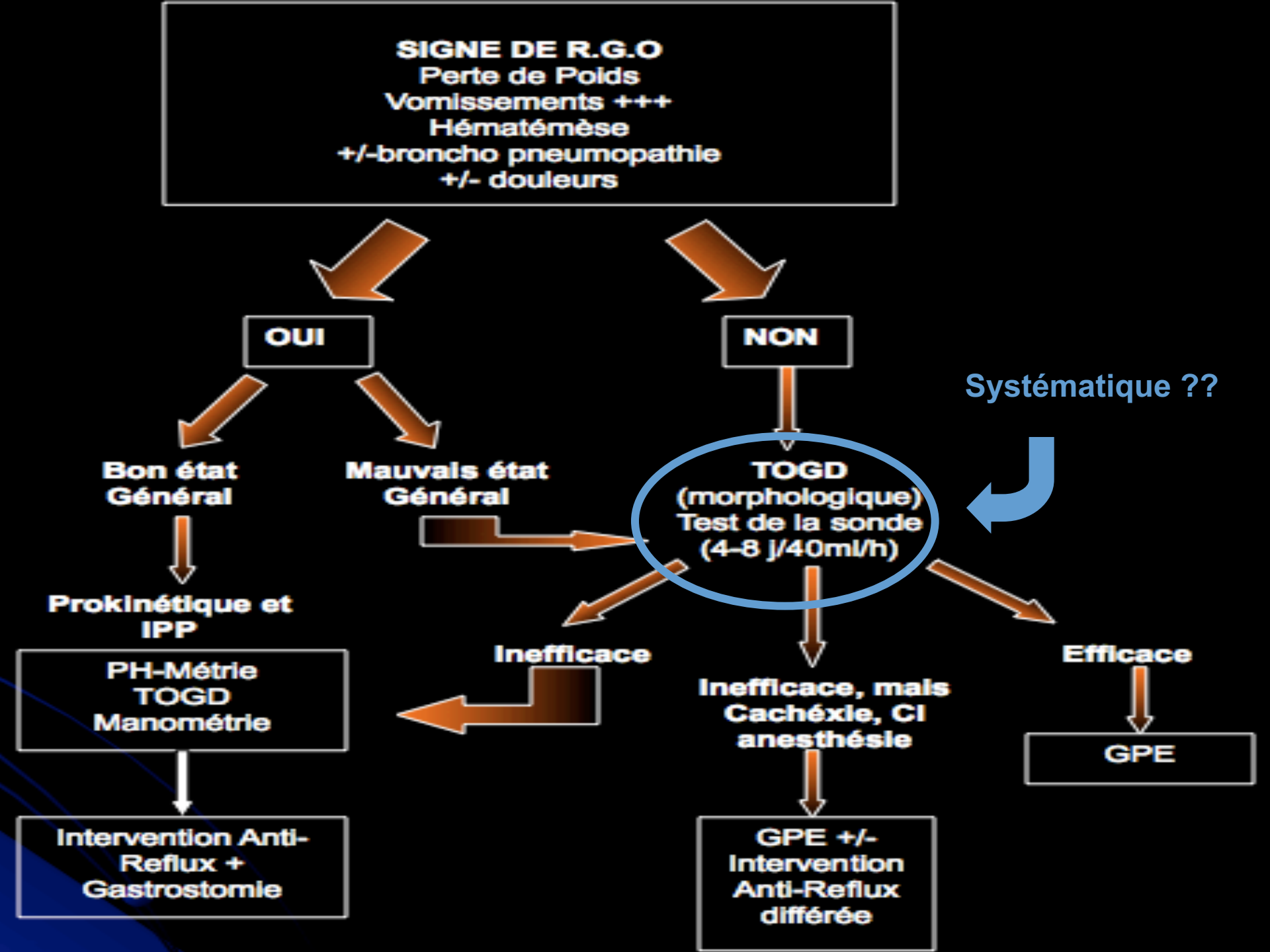
Conclusion DCG in selected cases is feasible and safe. Most cases were performed on morning operating list, but fewer than half had prior experience of nasogastric tube feeding. We suggest additional pathway modifications to improve DCG uptake.

Conclusion

- Faisabilité démontrée
- Bourses + fixation
  - Rassurante
  - Pas de complication
- Bouton
  - Prise en charge simplifiée
- Technique idéale si collaboration inter spécialité

Gastrostomie/ SNG

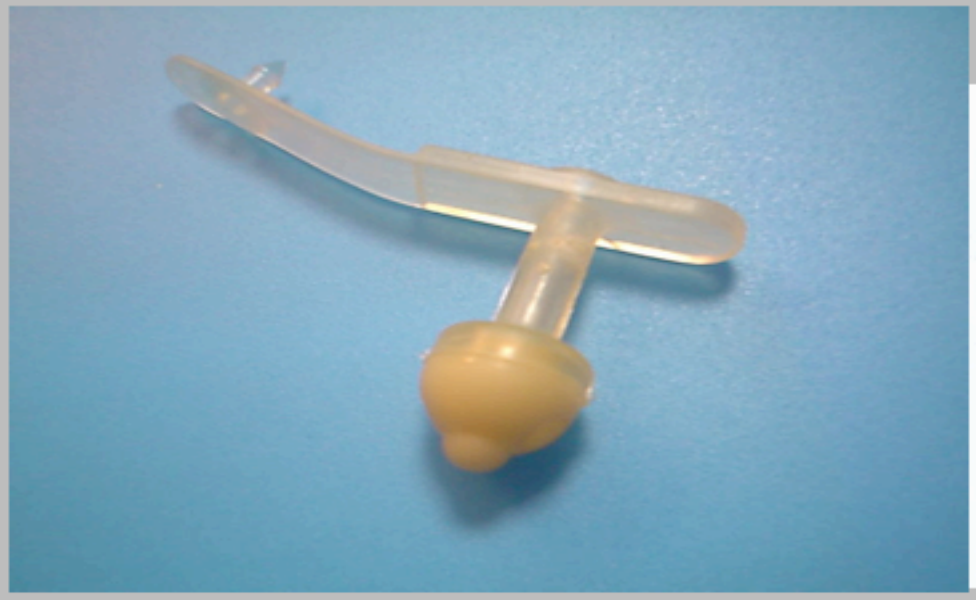
Que choisir pour une nutrition entérale prolongée ?


SIGNE DE R.G.O
Perte de Poids
Vomissements +++
Hématémèse
+/-broncho pneumopathie
+/- douleurs
OUI
NON
Systématique ??
Bon état Général
Mauvais état Général
TOGD (morphologique) Test de la sonde (4-8 j/40ml/h)
Prokinétique et IPP
PH-Métrie TOGD Manométrie
Intervention Anti-Reflux + Gastrostomie
Inefficace
Inefficace, mais Cachéxie, CI anesthésie
GPE +/- Intervention Anti-Reflux différée
Efficace
GPE

Quel type de boutons?

Bouton Bard

Bard®



Mise en place
mémoire de forme

Durée vie + longue
Plus plat

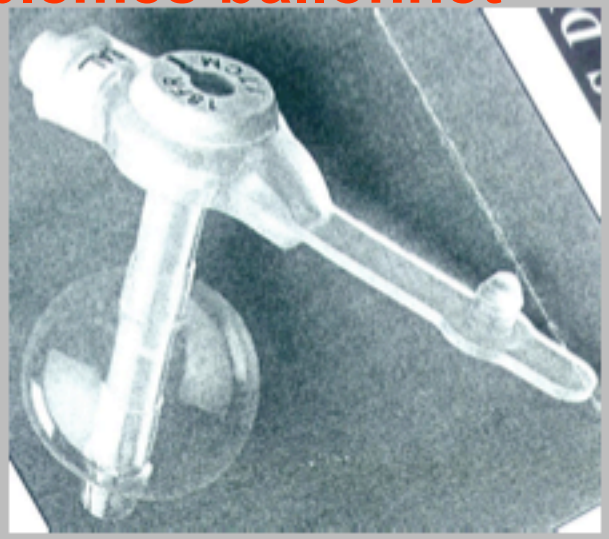
DESC 2025

Difficile à changer (AG?)

Facile à changer (parents)

Durée de vie quelques mois
Problèmes ballonnet

Mic Key®



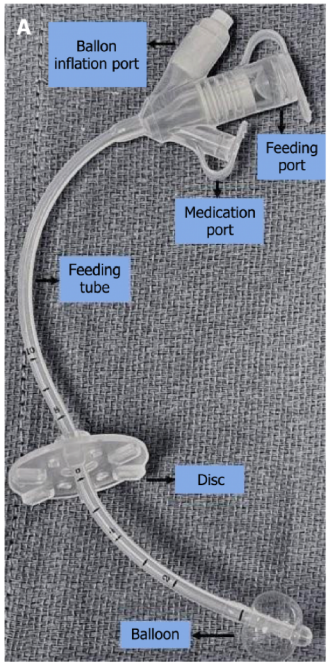
Avantages des sondes et boutons

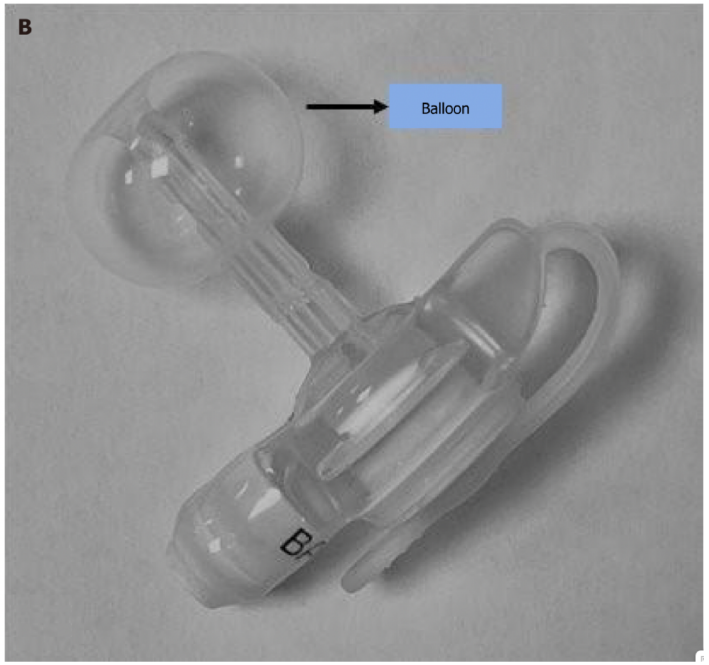
Sondes (A)

- Traction possible
- Fixation à la peau

Boutons (B)

- Encombrement stérique





Complications

Postopératoire immédiat

Irritation

Fuites

Mycose

Complications classiques

- Fuites
- Granulome
- Irritation cutanée
- Gonflage ballonnet
- Traction
- Corticoïdes locaux
- Nitrate d'argent
- IPP
- Changement de bouton
  - Charrière
  - Profondeur

Complications moins classiques

- Péritonite
- Occlusion
- Nécrose pariétale
- Faux trajet

- Réintervention

Apport de la radiologie pour les complications

Pediatric Radiology
https://doi.org/10.1007/s00247-019-04576-1

PICTORIAL ESSAY

Check for updates

Complications of percutaneous gastrostomy and gastrojejunostomy tubes in children

Sachin S. Kumbhar[1] · Matthew R. Plunk[1] · Rahul Nikam[2] · Kevin P. Boyd[1] · Pooja D. Thakrar[1]

Received: 1 September 2019 / Revised: 21 October 2019 / Accepted: 12 November 2019

- Ballonnet obstructif sur le pylore

Apport de la radiologie pour les complications

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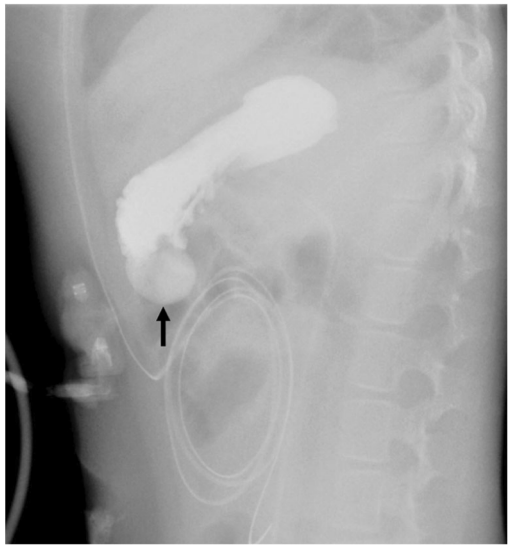
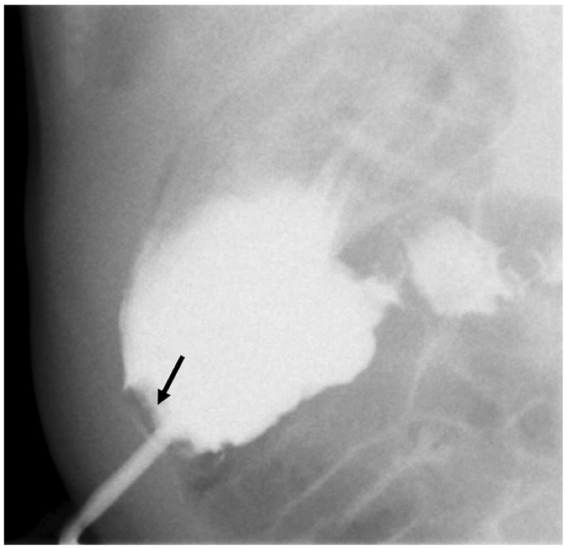
Received: 1 September 2019 / Revised: 21 October 2019 / Accepted: 12 November 2019

- Opacification normale chez un enfant de 18 mois

Face



Profil



DESC 2025

Recherche de complications

Pediatric Radiology
https://doi.org/10.1007/s00247-019-04576-1

PICTORIAL ESSAY

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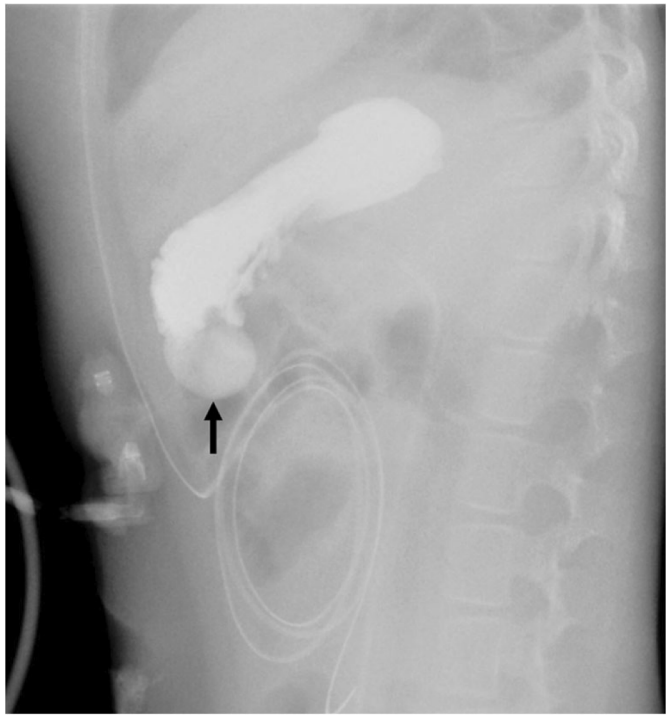
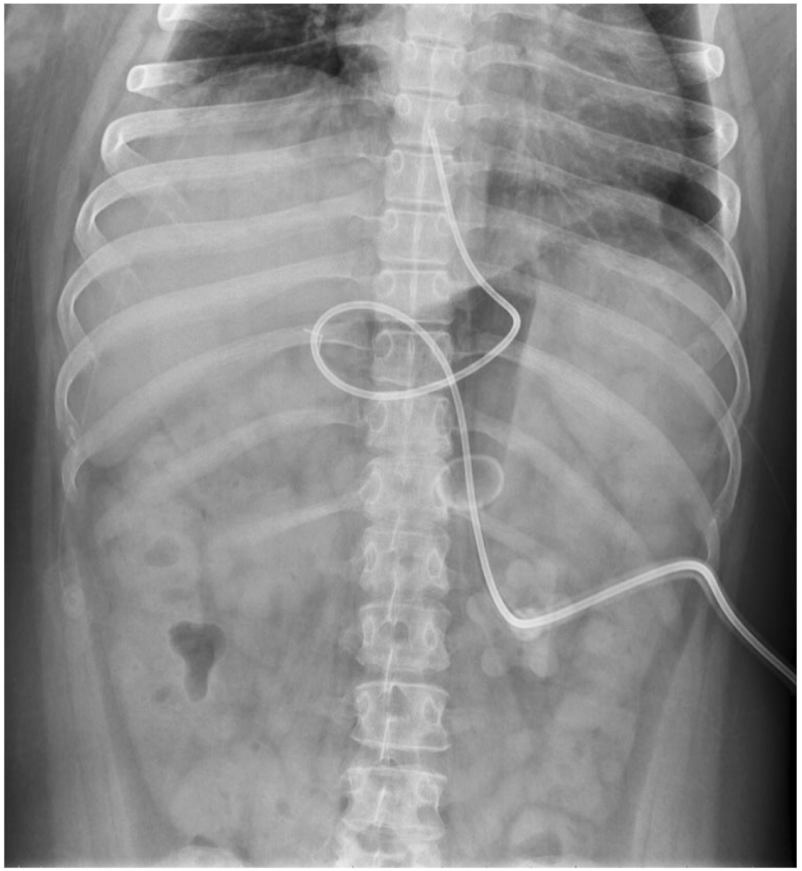
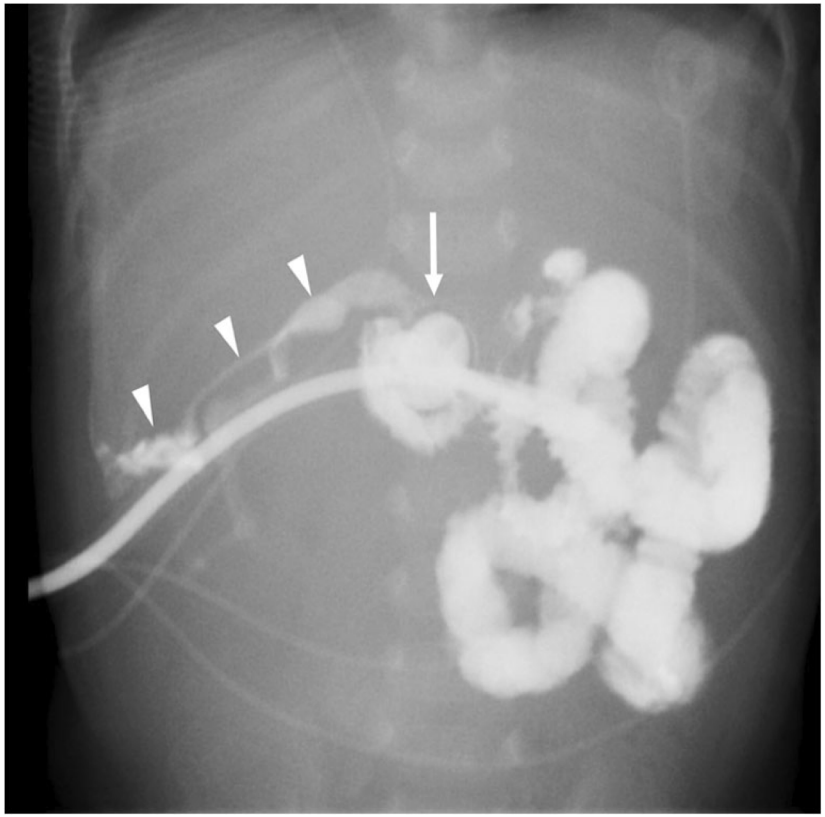
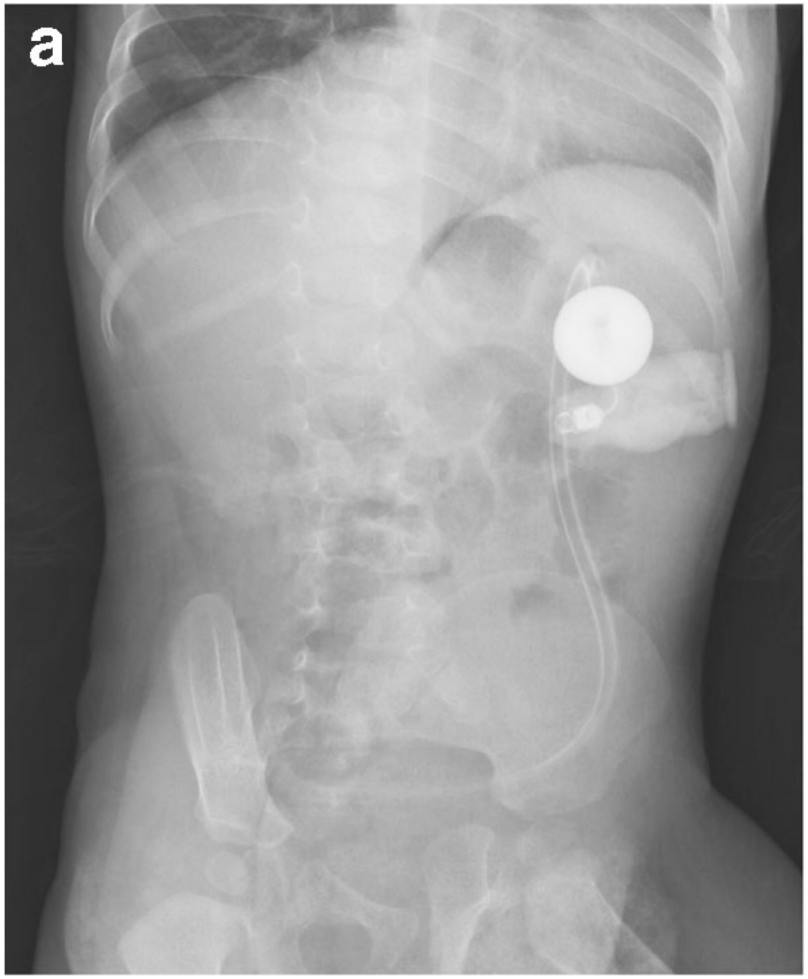


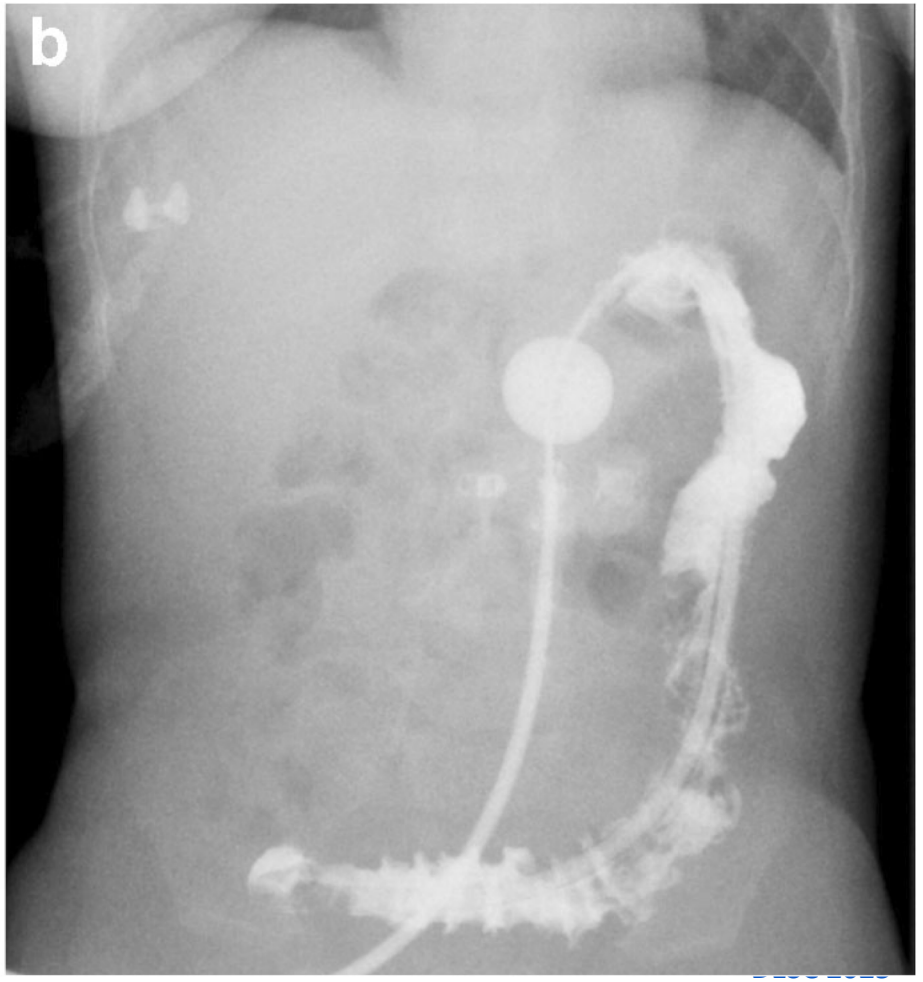
Migration œsophagienne ou jéjunale



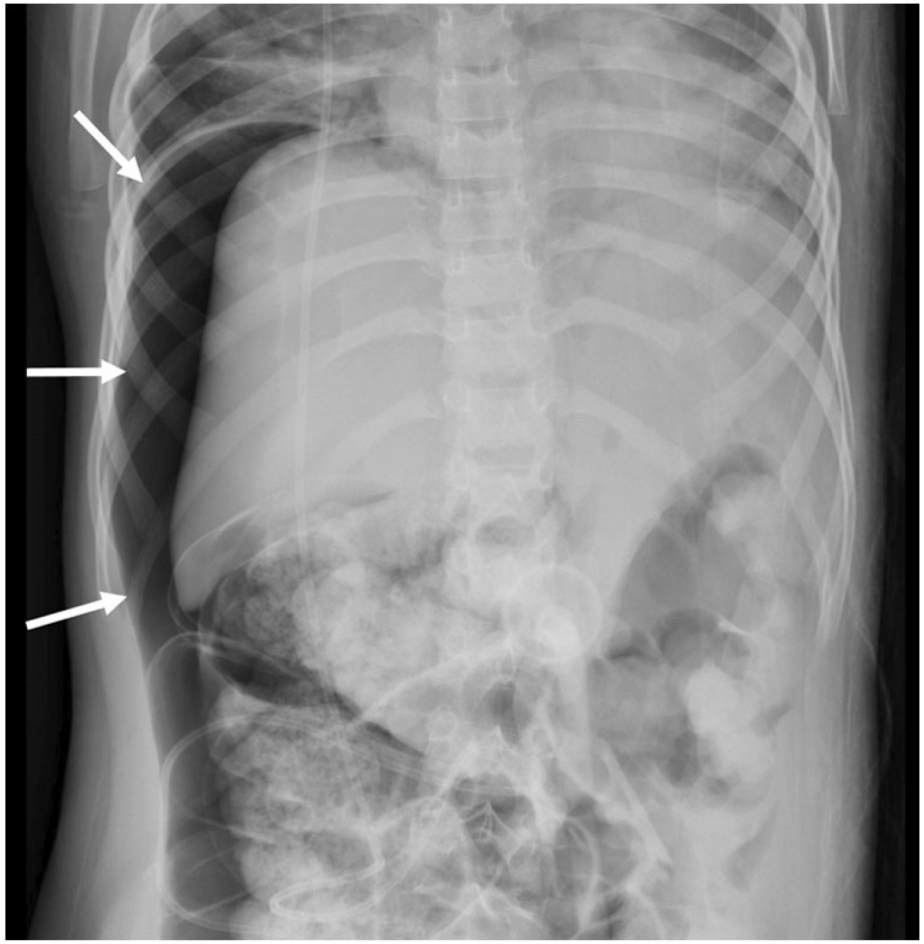


Insertion colique du ballonnet

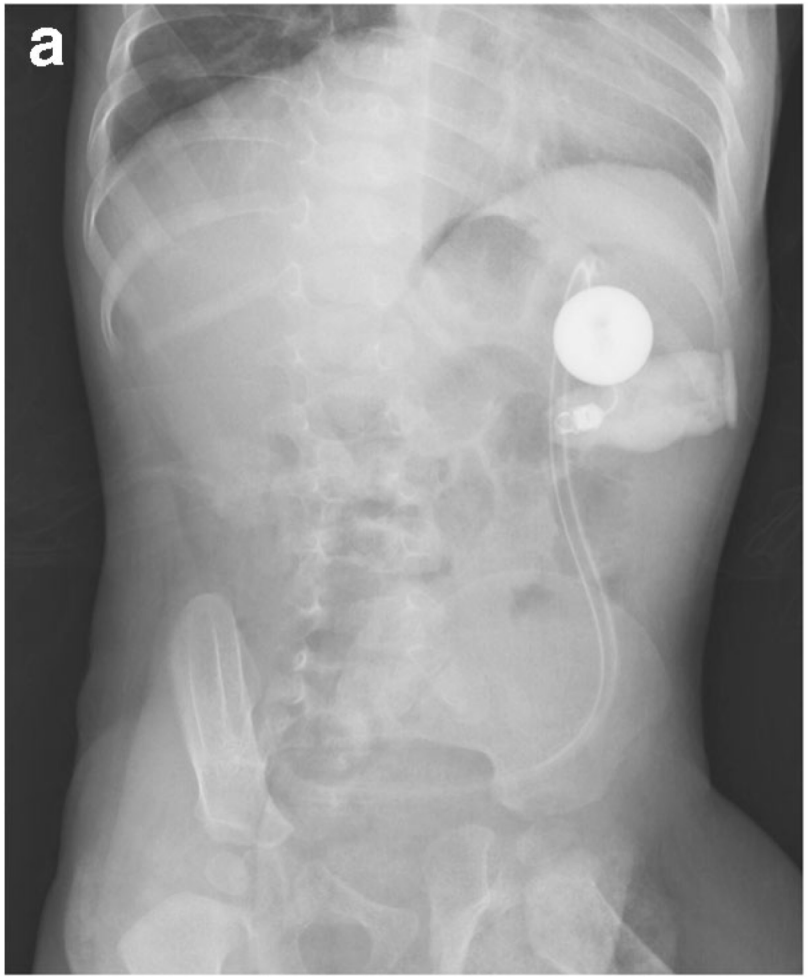


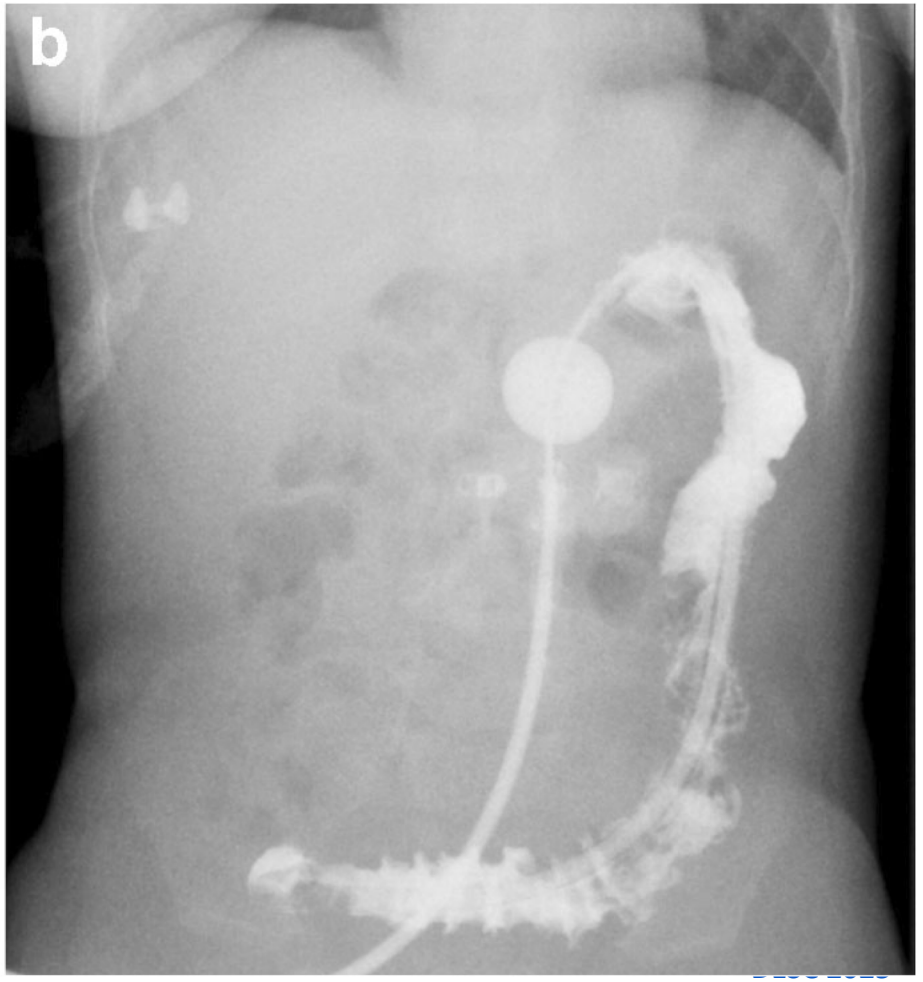


Hématome et pneumopéritoine



Insertion colique du ballonnet





Exemple avec technique lyonnaise

Environ 60 Gastrostomies chirurgicales / an

- ✓ Contre-indications au PEG / Autre chirurgie associée
- ✓ Endoscopie non disponible

Rationnel

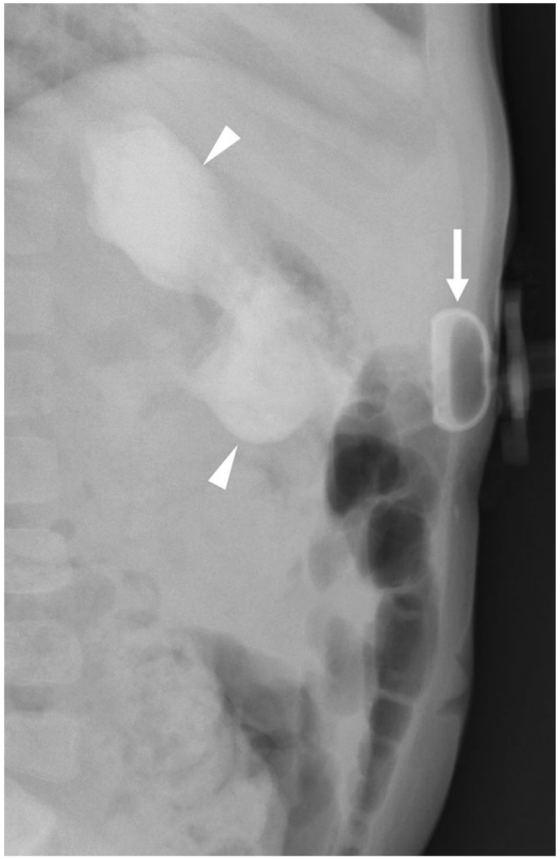
<u>Stamm – lap peu satisfaisant</u>

- ✓ 2 complications majeures (péritonites septiques)
- ✓ Cicatrisation difficile: large incision

Recherche d'une technique alterne

- ✓ Aussi fiable que le Stamm / Laparotomie
- ✓ Avec appareillage par un bouton

Prolapsus muqueux et enfouissement



Article similaire de radiologie

- Apports des opacifications pour les dysfonctionnements d'appareillage

Submit a Manuscript: https://www.f6publishing.com

World J Radiol 2025 June 28; 17(6): 107522

DOI: 10.4329/wjr.v17.i6.107522

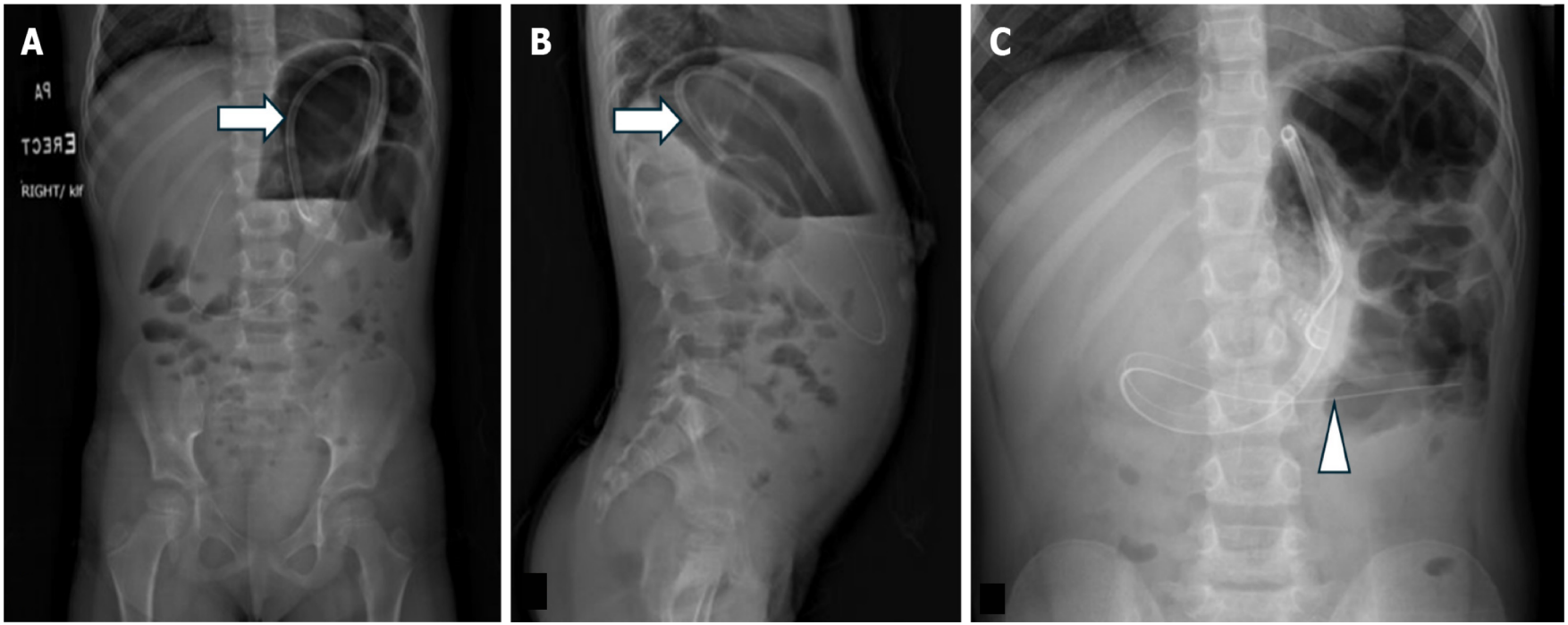
ISSN 1949-8470 (online)

MINIREVIEWS

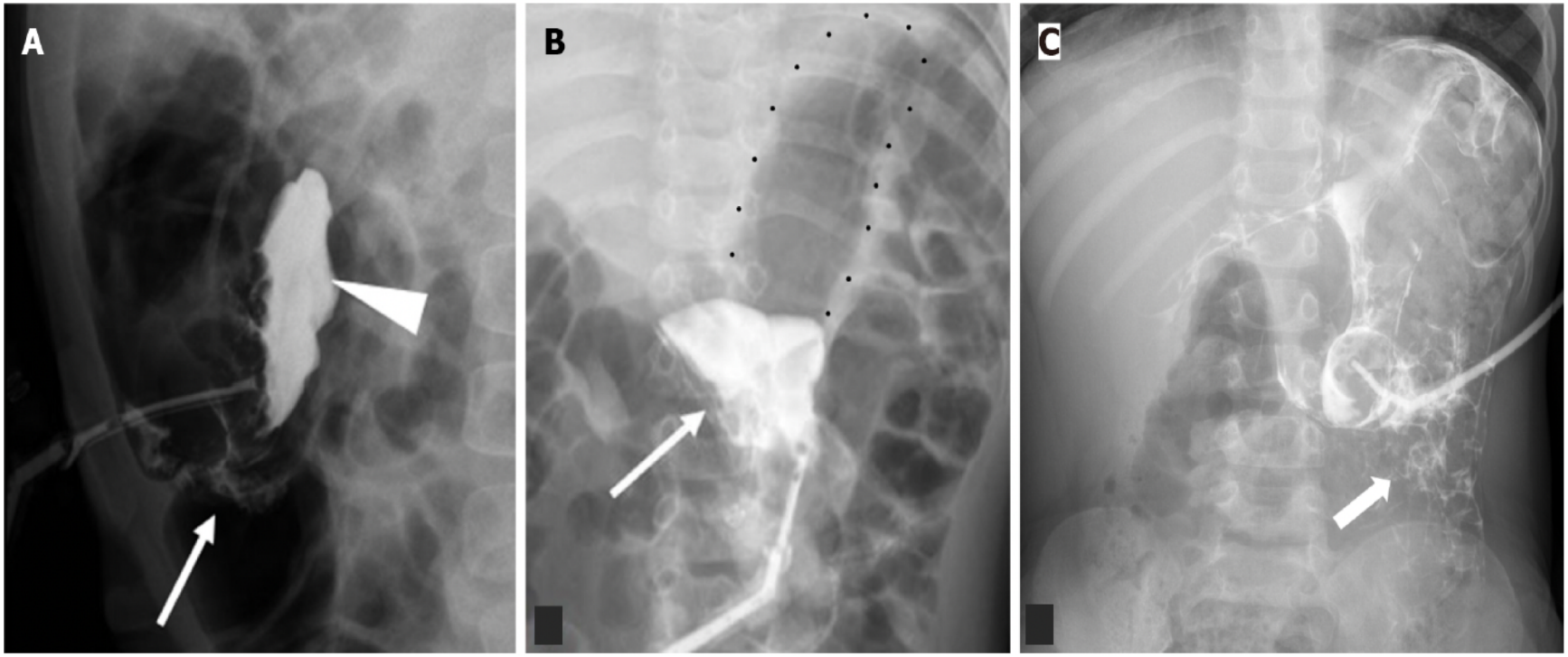
Imaging of pediatric gastrostomy tube malposition: Pearls and pitfalls

Dhrumil Deveshkumar Patel, Kathleen E Schenker, Lauren W Averill, Lauren A May

Déplacement de la sonde de jéjunostomie



Fuite de produit de contraste dans le péritoine



Conclusion

Aucune technique n’est sans complication

Faire ce que l’on sait faire ou que l’on fait souvent

Préparer les familles

Merci pour votre attention

Remerciements
Bernard Longis
Céline Grosos