

Ιατρογενής ορθοκολική διάτρηση και διάτρηση από ξένο σώμα

Δημήτρης Τσαπραλής
Επιμελητής Α Χειρουργικής
Γ.Ν.Ιεράπετρας

Αιτιολογία

- **Ενδοσκόπηση-κολονοσκόπηση**
 - Διαγνωστική
 - Θεραπευτική
- **Κατά τη διάρκεια επεμβάσεων (διεγχειρητικά)**
 - Ουρολογικών
 - Γυναικολογικών
 - Ορθοκολικής χειρουργικής
- **Ξένα σώματα**
 - Κατάποση
 - Είσοδος διά του πρωκτού

Διάτρηση κατά τη διάρκεια κολονοσκόπησης-Ορισμός

Diagnosis and management of iatrogenic endoscopic perforations: European Society of Gastrointestinal Endoscopy (ESGE) Position Statement



Authors

Gregorios A. Paspatis¹, Jean-Marc Dumonceau², Marc Barthet³, Søren Meisner⁴, Alessandro Repici⁵, Brian P. Saunders⁶, Antonios Vezakis⁷, Jean Michel Gonzalez³, Stine Ydegaard Turino⁴, Zacharias P. Tsiamoulos⁶, Paul Fockens⁸, Cesare Hassan⁹

Acute iatrogenic perforation during endoscopy is defined as the presence of gas or luminal contents outside the gastrointestinal tract [7]. The timing of diagnosis is critical for management and

Διάρθρωση κατά τη διάρκεια ενδοσκοπήσης-Συχνότητα

REVIEW

Open Access

2017 WSES guidelines for the management of iatrogenic colonoscopy perforation



Iatrogenic colonic perforations (ICPs) are an infrequent but severe complication of colonoscopy. Globally, the incidence is estimated to be 0.016–0.8% for diagnostic colonoscopies and 0.02–8% for therapeutic colonoscopies [1–10], but considering the increasing numbers of screening, diagnostic, and therapeutic colonoscopies being performed every year, the frequency of ICP is not insignificant [11, 12].

Colonoscopy perforation rate, mechanisms and outcome: from diagnostic to therapeutic colonoscopy

Authors

V. Panteris, J. Haringsma, E. J. Kuipers

Table 1 Frequency of perforation in recently published studies.

	Type of study	No. of colonoscopies	No. of perforations overall (%)	No. of therapeutic colonoscopies	No. of therapeutic perforations (%)	No. of deaths (%)
Anderson et al. [11], 2000	Retrospective	10 486	20 (0.19)	4 194	8 (0.19)	2 (0.019)
Sieg et al. [23], 2001	Prospective	82 416	13 (0.015)	14 249	9 (0.06)	1 (0.001)
Tran et al. [12], 2001	Retrospective	26 162	21 (0.08)	9 214	10 (0.11)	1 (0.006)
Nelson et al. [24], 2002	Prospective	3 196	0 (0)	1 672	0 (0)	0 (0)
Korman et al. [15], 2003	Retrospective	116 000	37 (0.03)		13	0 (0)
Gondal et al. [14], 2003	Prospective	2 524	6 (0.23)	1 807	6 (0.33)	0 (0)
Gatto et al. [13], 2003	Retrospective	39 286	77 (0.19)			4 (0.01)
Misra et al. [16], 2004	Retrospective	7 425	10 (0.13)	2 955	4 (0.13)	1 (0.013)
Cobb et al. [17], 2004	Retrospective	43 609	14 (0.032)		4	0 (0)
Heldwein et al. [22], 2005	Prospective	24 382	26 (0.1)	24 382	26 (0.1)	0 (0)
Iqbal et al. [18], 2005	Retrospective	85 824	72 (0.08)		33	5 (0.005)
Rathgaber and Wick [20], 2006	Retrospective	12 407	2 (0.016)	5 074	0 (0)	0 (0)
Levin et al. [21], 2006	Retrospective	16 318	15 (0.09)	11 083	12 (0.1)	0 (0)
Tulchinsky et al. [19], 2006	Retrospective	12 067	7 (0.05)		2	0 (0)
Luning et al. [8], 2007	Retrospective	9 209	23 (0.24)		15	3 (0.009)
Total		491 311	343 (0.07)	74 630*	75 (0.1)*	17 (0.003)

*These figures include data only from the studies that supplied both the total number of therapeutic colonoscopies carried out and the number of therapeutic perforations encountered.

Ποια επίπεδα συχνότητας εμφάνισης της επιπλοκής θεωρούνται αποδεκτά κατά τη διάρκεια κολονοσκόπησης ??

REVIEW

Open Access



2017 WSES guidelines for the management of iatrogenic colonoscopy perforation

What is the maximum incidence of ICP considered acceptable for centers where diagnostic or therapeutic colonoscopies are performed?

onoscopy [55]. The American Society for Gastrointestinal Endoscopy (ASGE)/American College of Gastroenterology (ACG) Task Force on Quality in Endoscopy recommends that post-colonoscopy perforation rates should be maintained at ≤ 1 per 500 colonoscopies ($\leq 1/1000$ in screening

- 2.1. *The maximum acceptable incidence of ICP for diagnostic colonoscopies should not exceed 0.1% (Recommendation Grade 1A).*
- 2.2. *During therapeutic colonoscopy, the maximum acceptable incidence of ICP should be $\leq 1\%$ for complex polypectomy (Recommendation 1A) and less than 7% for SEMS placement (Recommendation Grade 1C).*

Συχνότερες θέσεις διάτρησης κατά την κολonosκόπηση

REVIEW

Open Access

2017 WSES guidelines for the management of iatrogenic colonoscopy perforation



rectum [6, 13, 15, 29, 50] (Fig. 1). ICPs are generally **intra-peritoneal perforations**; **extra-peritoneal perforations** may manifest as pneumoretroperitoneum, pneumomediastinum, or subcutaneous emphysema. Combined intra- and extra-peritoneal perforations have been reported anecdotally [51].

more capacious right colon is more susceptible to rupture than the left colon, and is consistent with Laplace's law of wall tension = $(\text{pressure} \times \text{radius}) / (2 \times \text{thickness})$. Despite their theoretical advantages, no data have

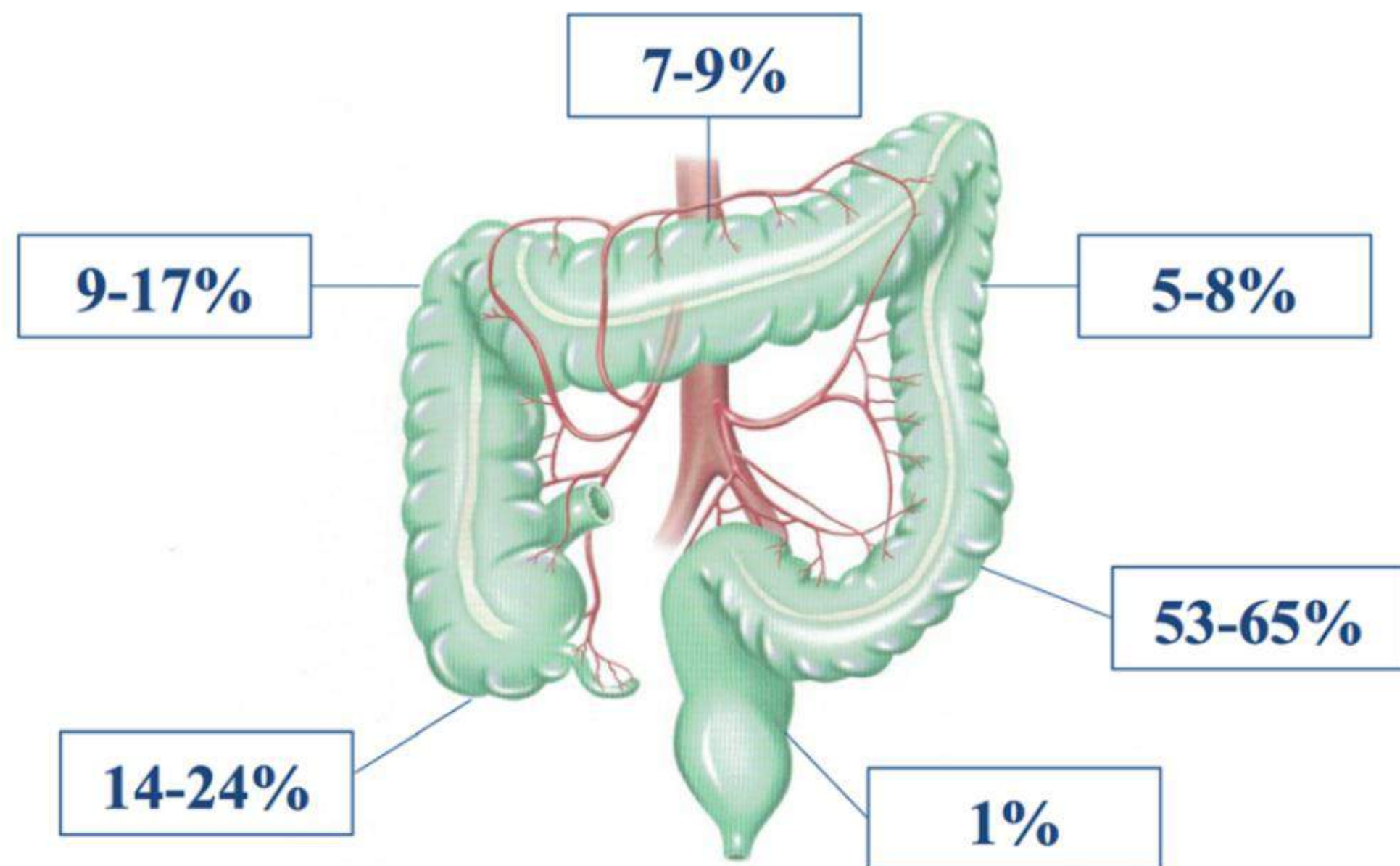


Fig. 1 Location and frequency of iatrogenic colonoscopy perforation

Παράγοντες κινδύνου για την πρόκληση ιατρογενούς διάτρησης

REVIEW

Open Access



2017 WSES guidelines for the management of iatrogenic colonoscopy perforation

Table 6 Risk factors for perforation in multivariate analysis.

Risk factors	Odds ratios (95%CI)
Patient characteristics	
<i>Age, years</i>	
40–59 [21]	1.0 (referent)
≥60	5.2 (1.4–19.2)
65–69 [13]	1.0
≥75–79	3.7 (1.7–8.2)
<i>Sex [21]</i>	
Male	1.0
Female	2.3 (0.9–6.0)
<i>Co-morbidities [13]</i>	
0	1.0
≥2	3.2 (1.6–6.1)
<i>Indications [13]</i>	
Screening	1.0
Diverticulosis	2.3 (1.3–4.0)
Obstruction	2.9 (1.3–6.7)
Polyp characteristics* [22]	
<i>Size</i>	
≥1 cm	1.0
≥1 cm	31.01 (7.53–128.1)
<i>Location</i>	
Left colon	1.0
Right colon	2.4 (1.34–4.28)

*Odds ratios refer to risk factors for major complications after polypectomy which include perforation and severe bleeding (representing 1.1 % and 1.6 % of the overall complication rate in this study, respectively).

Table 3 Principal risk factors for iatrogenic colonoscopy perforations (ICP)

Risk factors	References
Increasing age (> 65 years)	[18, 23, 26, 27, 36]
Female gender	[18, 28, 29, 36]
Low BMI	[28, 29]
Low albumin level	[20, 23, 26, 28]
Presence of comorbidities	[18, 36]
Crohn's disease and diverticulosis	[16, 18, 20, 23, 26, 28]
Admission in ICU	[20, 23, 26, 28]
Endoscopist's experience	[18, 29, 31–33]
Non-gastroenterologist endoscopists	[31, 33]
Low volume centers	[31, 33]
Previous abdominal surgery	[16, 36]
Colonic obstruction	[16, 18]
Bevacizumab therapy	[44, 46, 47]
Therapeutic vs. diagnostic procedure	[5, 10, 37–42, 44, 49]
Colonoscopy vs. sigmoidoscopy	[5, 29, 36]
General anesthesia	[34, 35]

Είδη θεραπευτικών κολonosκοπήσεων με τον μεγαλύτερο κίνδυνο διάτρησης

REVIEW

Open Access

2017 WSES guidelines for the management of iatrogenic colonoscopy perforation



Therapeutic colonoscopies generally involved a higher risk for ICP, particularly the following procedures: polypectomy for large polyps, multiple polypectomies, pneumatic dilatation for Crohn's stricture [37], the use of argon plasma coagulation, and endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD) for colorectal neoplasia [38]. For endoscopic polypectomies,

Ανασκόπηση βιβλιογραφίας

Συσχέτιση θεραπευτικών ενδοσκοπήσεων με συχνότητα διάτρησης

Colonoscopy perforation rate, mechanisms and outcome: from diagnostic to therapeutic colonoscopy

Authors

V. Panteris, J. Haringsma, E. J. Kuipers

Table 2 Perforations per polypectomy.

	Heldwein et al. [22], 2005	Gondal et al. [14], 2003	Levin et al. [21], 2006	Sieg et al. [23], 2001
Type of study	Prospective	Prospective	Retrospective	Retrospective
No. of polypectomies	3976	2208	11 083	14 249
Percentage of polyps larger than 1cm	50	19	38	39
Percentage of patients with > 1 polyp	35.6	6.5	49.3	–
No. of perforations	26	6	12	9
Perforations/polypectomies	1/153	1/368	1/923	1/1583

Colonoscopy perforation rate, mechanisms and outcome: from diagnostic to therapeutic colonoscopy

Authors

V. Panteris, J. Haringsma, E. J. Kuipers

Table 3 Perforation rate in endoscopic mucosal resections of colonic lesions.

	No. of lesions	Type of lesions	Size of lesions, mean, mm	No. of perforations
lishi et al. [35], 2000	56	Sessile	20 – 50 (range)	0
Tanaka et al. [40], 2001	81	LST	31	1
Ahmad et al. [30], 2002	41	Sessile–LST	20	0
Bergmann and Beger [31], 2003	71	Sessile–flat	25.4	1
Higaki et al. [32], 2003	24	Flat	35.5	0
Tung and Wu [41], 2003	91	Polypoid/flat	20	0
Tamura et al. [39], 2003	67	LST	23	0
Hurlstone et al. [33], 2004	58	LST	24 – 42 (range)	0
Conio et al. [27], 2004	139	Sessile	25	0
Hurlstone et al. [34], 2004	599	Sessile–flat	6.8	1
Su et al. [38], 2005	152	Flat–LST	19.4	0
Katsinelos et al. [37], 2006	59	Sessile	20 – 60 (range)	0
Bories et al. [28], 2006	52	Sessile	29.8	1
Jameel et al. [29], 2006	30	Polypoid/flat	20	0
Arebi et al. [26], 2007	161	Sessile–LST	32.5	0
Wei et al. [42], 2007	61	Polypoid/flat	14	0
Kaltenbach et al. [36], 2007	116	Flat	16.7	0
Total	1858			4

LST, laterally spreading tumor.

Colonoscopy perforation rate, mechanisms and outcome: from diagnostic to therapeutic colonoscopy

Authors

V. Panteris, J. Haringsma, E. J. Kuipers

	No. of lesions	Size of lesions, mean, mm	No. of perforations
Fujishiro et al. [43], 2006	35	32.8	2
Tanaka et al. [45], 2007	70	28	7
Tamegai et al. [46], 2007	71	32.7	1
Onozato et al. [44], 2007	30	26.2	1
Saito et al. [47], 2007	200	35	10
Hurlstone et al. [48], 2007	42	14–44 (range)	1
Fujishiro et al. [49], 2007	200	29.9	11
Total	648		33

Table 4 Perforation rate in endoscopic submucosal dissection of colonic lesions*.

* Lesion types Is, Ila, Ila+Ilc, Ilc, and LST according to the Paris classification of superficial gastrointestinal neoplastic lesions [83].

Παθογενετικοί μηχανισμοί διάτρησης

Endoscopic Perforation of the Colon: Lessons From a 10-Year Study

Monte L. Anderson, M.D., Tousif M. Pasha, M.D., M.P.H., and Jonathan A. Leighton, M.D.
*Division of Gastroenterology, Mayo Foundation and Mayo Medical School, Mayo Clinic Scottsdale,
Scottsdale, Arizona*

Table 3. Mechanism of Perforation

Type	No. (%)
Mechanical	7 (32%)
Tip of scope (direct)	
Shaft of scope (antimesenteric)	
Electrocautery	8 (36%)
Barotrauma	1 (5%)
Unclear cause, multifactorial	6 (27%)

Feasibility of endoscopic closure of an iatrogenic colon perforation occurring during colonoscopy

Ivan Jovanovic, MD, PhD, Lars Zimmermann, MD, Lucia C. Fry, MD, Klaus Mönkemüller, MD, PhD, FASGE

Belgrade, Serbia; Bottrop, Magdeburg, Germany

Perforation during colonoscopy can occur (a) at the site of endoscopic resection; (b) through shear forces occurring at the colon wall during advancement of the colonoscope, either with the tip or the shaft of the scope; (c) because of barotrauma from overinsufflation or during the therapeutic procedure as a result of gas explosion (eg, argon plasma coagulation); (d) in the setting of a friable colon such as collagenous colitis; (e) when there is a fixed distal colon obstruction and competent ileocecal valve; and (f) because of the application of electrosurgical current (eg, coagulation, hot biopsy forceps).^{1,3,4,7,9} The abil-

Κλινική Εικόνα-Σημειολογία

Clinical Presentation and Management of Iatrogenic Colon Perforations

Tewodros M. Gedebo, MD, Randy A. Wong, MD, William D. Rappaport, MD, Philip Jaffe, MD, Daniel Kahsai, MD, Glenn C. Hunter, MD, Tucson, Arizona

TABLE I
Clinical Presentation of Patients with Iatrogenic Colonic Perforation

Symptoms	Series I [n = 21] (%)	Series II [n = 87] (%)
Pain	13 (62)	49 (56%)
Fever	5 (24)	6 (7)
Bleeding	3 (14)	5 (6)
Distention	2 (10)	6 (7)
Nausea/vomiting	2 (10)	2 (2)
Subcutaneous air	1 (5)	7 (8)
Chest pain	2 (10)	2 (2)
Scapular pain	0 (0)	2 (2)
Collapse	1 (5)	1 (1)
None	5 (24)	9 (10)

Postpolypectomy syndrome (PPS)

Postpolypectomy syndrome, or postcoagulation syndrome, is characterized by abdominal pain, fever and an increase in the white cell count, following a colonoscopic polypectomy. The syndrome is caused by transmural thermal colonic damage resulting in serosal inflammation. The electric current used during snare polypectomy

of the colon. **Less than 10%** of patients are **asymptomatic** following perforation of the colon that is demonstrable radiographically [63].

Χρόνος διάγνωσης σε σχέση με την κολονοσκόπηση (Mode of presentation)

A Immediate Perforation is diagnosed at colonoscopy.

Visualizing fat, mesenteric vessels or small bowel is confirmatory. Difficulty in maintaining insufflation is suggestive of perforation [55]. Sudden onset of severe abdominal pain is an ominous sign.

B Early

Postprocedural abdominal pain, nausea and vomiting, abdominal distension, tenderness and guarding are suggestive of perforation. Fever, tachycardia and leucocytosis raise suspicion [56].

C Delayed

The symptoms and signs described above can be delayed for up to 72 h (and beyond) in some patients. Delayed presentation is more common after therapeutic colonoscopy with thermal injury. There has been one report of perforation 9 weeks after colonic biopsy [57].

Διάγνωση Περίπτωση 1: Αντιληπτή από ενδοσκόπιο

Diagnosis and management of iatrogenic endoscopic perforations: European Society of Gastrointestinal Endoscopy (ESGE) Position Statement 📄



Authors

Gregorios A. Paspatis¹, Jean-Marc Dumonceau², Marc Barthet³, Søren Meisner⁴, Alessandro Repici⁵, Brian P. Saunders⁶, Antonios Vezakis⁷, Jean Michel Gonzalez³, Stine Ydegaard Turino⁴, Zacharias P. Tsiamoulos⁶, Paul Fockens⁸, Cesare Hassan⁹

In the case of an endoscopically identified perforation, ESGE recommends that the endoscopist reports: its size and location with a picture; endoscopic treatment that might have been possible; whether carbon dioxide or air was used for insufflation; and the standard report information.

ther management. Thus, incomplete reporting – that may be dictated by the fear of future medicolegal litigation – may expose patients to needless diagnostic or therapeutic delays and cause a suboptimal outcome. A clear report stating that the endoscopic

Περίπτωση 2: μη αντιληπτή κατά την ενδοσκόπηση

Which are the minimum biochemical and imaging investigations that should be requested in the case of a suspected ICP?

- 4.1. *After diagnostic or therapeutic colonoscopies, all patients who present with abdominal pain, and/or tenderness, and/or abdominal distension, and/or fever, and/or rectal bleeding should be investigated for ICP by laboratory tests and imaging exams (Recommendation Grade 1B).*
- 4.2. *The minimum biochemical markers that should be requested in the case of suspected ICP are white blood cell count and C-reactive protein (Recommendation Grade 1C).*
- 4.3. *ICP should be confirmed with the demonstration of free intra-peritoneal or extra-peritoneal air (Recommendation 1B). CT scan is more sensitive than standard abdominal radiographs to detect free air (Recommendation Grade 1C).*
- 4.4. *In the case of localized peritoneal signs, double contrast enhanced CT scan can be a useful adjunctive tool to confirm the feasibility of non-operative management of ICP (Recommendation Grade 1C).*

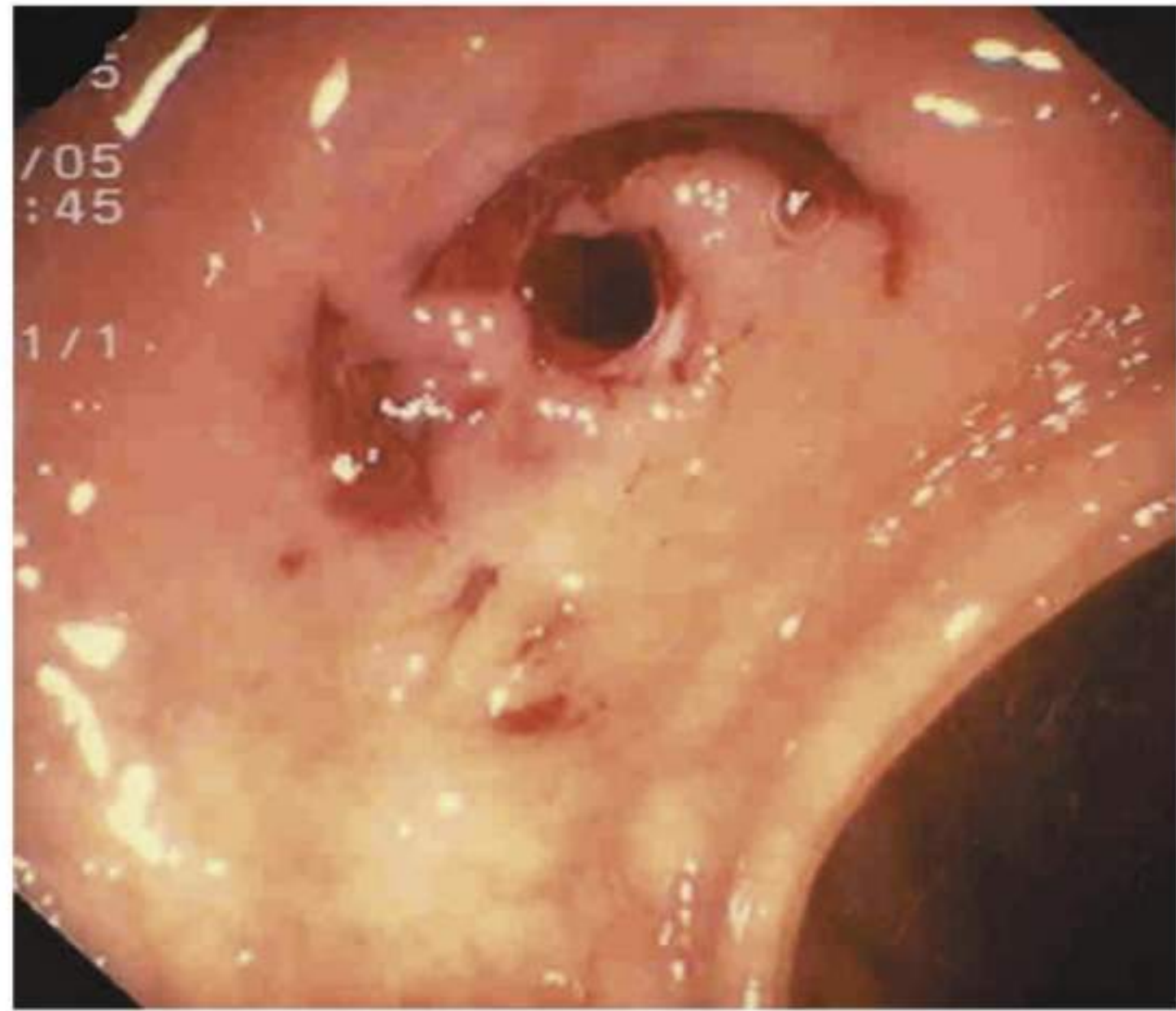


Figure 1. Small perforation in the sigmoid colon resulting from direct trauma by the tip of the endoscope.

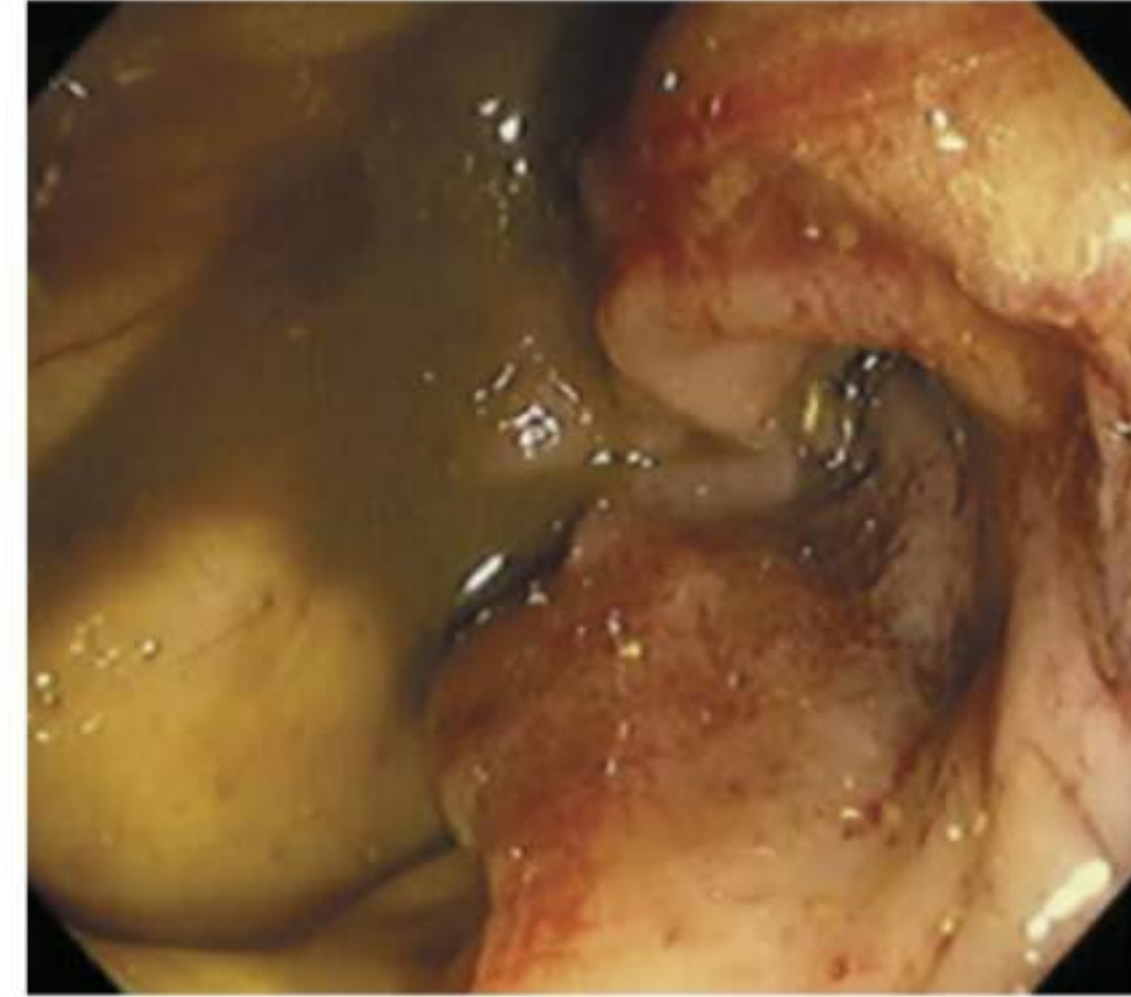


Figure 3. Large perforation caused by shaft trauma in a poorly prepared colon.

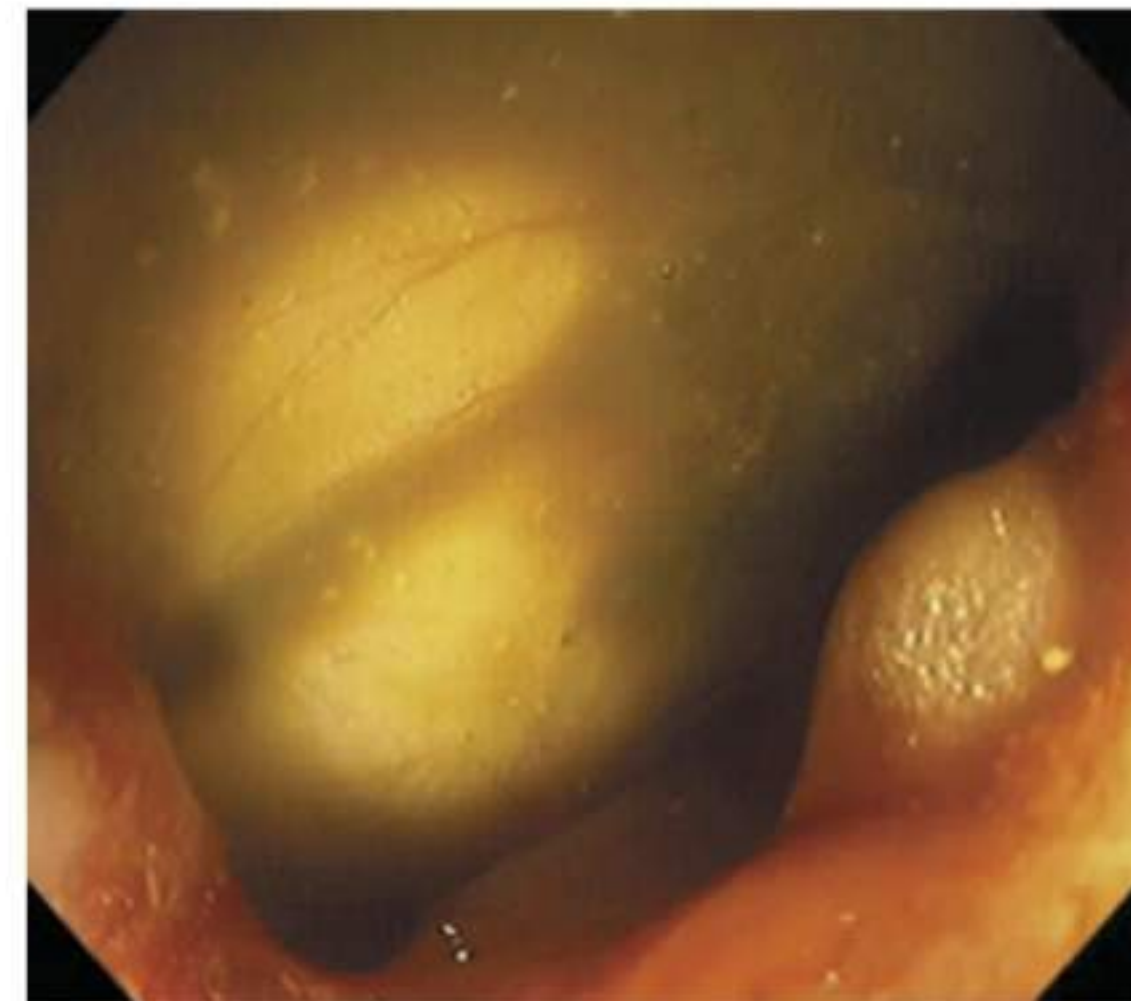


Figure 4. Same perforation as shown in Figure 3 from a different view. This type of perforation cannot be closed endoscopically, and prompt surgical intervention is warranted.

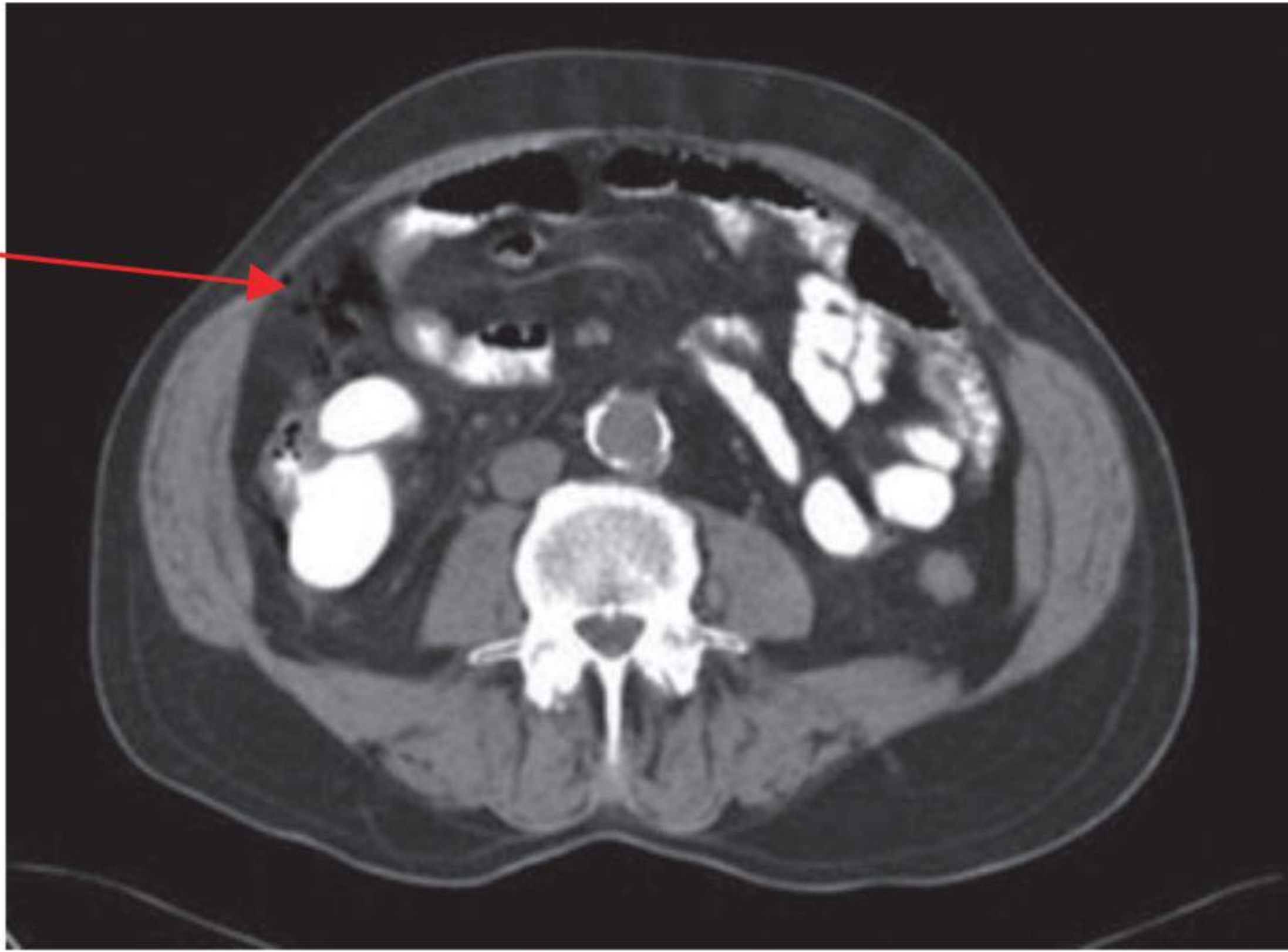


Figure 3 Computed tomographic scan demonstrating free intra-abdominal air following colonoscopic perforation.

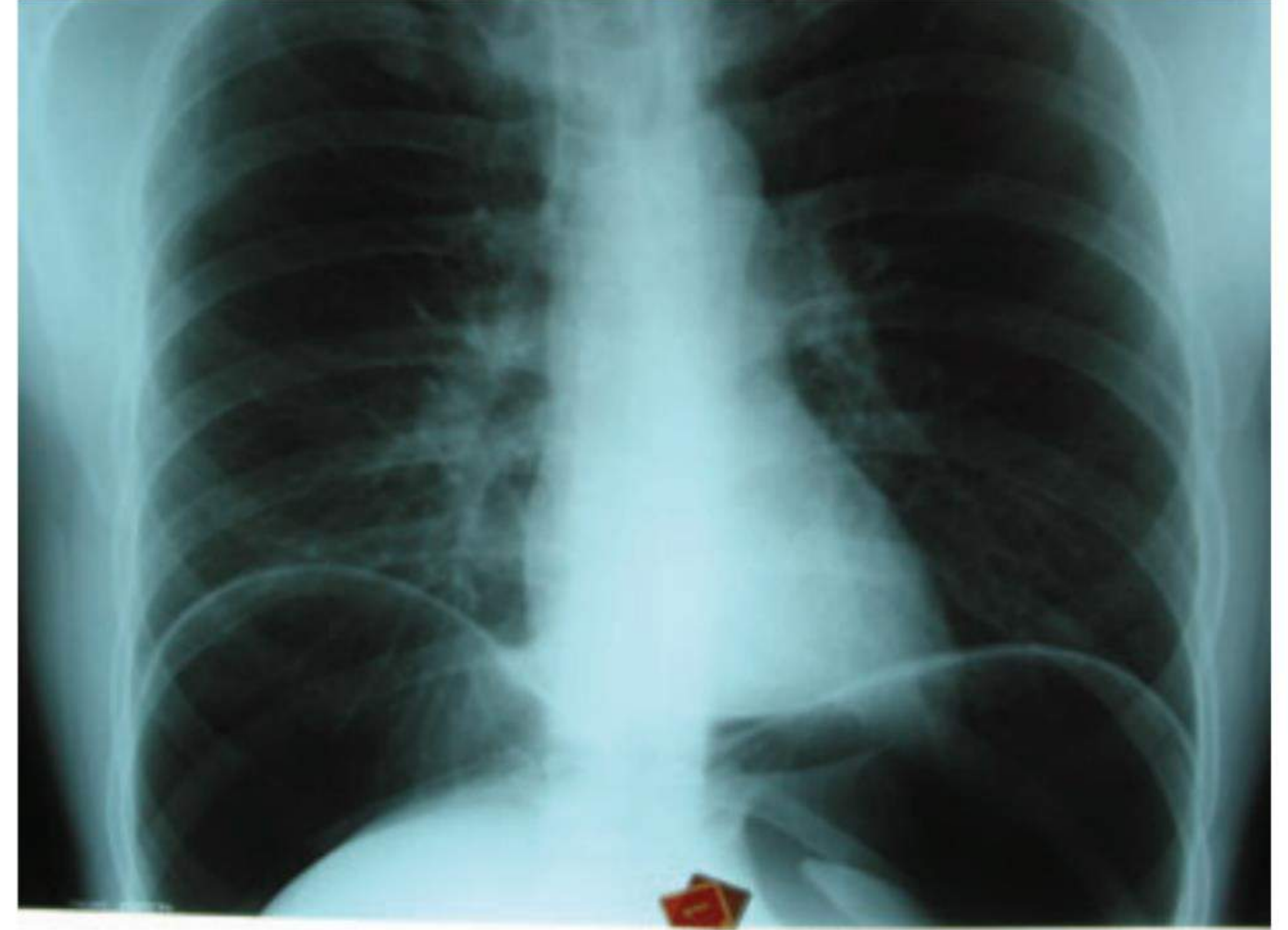


Figure 2 Erect chest X-ray showing free air under both hemidiaphragms, following iatrogenic colonic perforation at rigid sigmoidoscopy.

Θεραπεία Διάγνωση κατά την ενδοσκόπηση

Indications for a Trial of Conservative Management Following Colonoscopic Perforation

1. Perforation should be small.
 2. Perforation is retroperitoneal.
 3. There is reasonable bowel preparation.
 4. The patient is in a good general condition.
 5. Generalized peritoneal signs are absent.
 6. Presence of free air on x-ray should not influence management.
-

Post-polypectomy
coagulation
syndrome



Localized pain
No free air
Low fever
WBC: < 14.000



Conservative

Αλγόριθμος

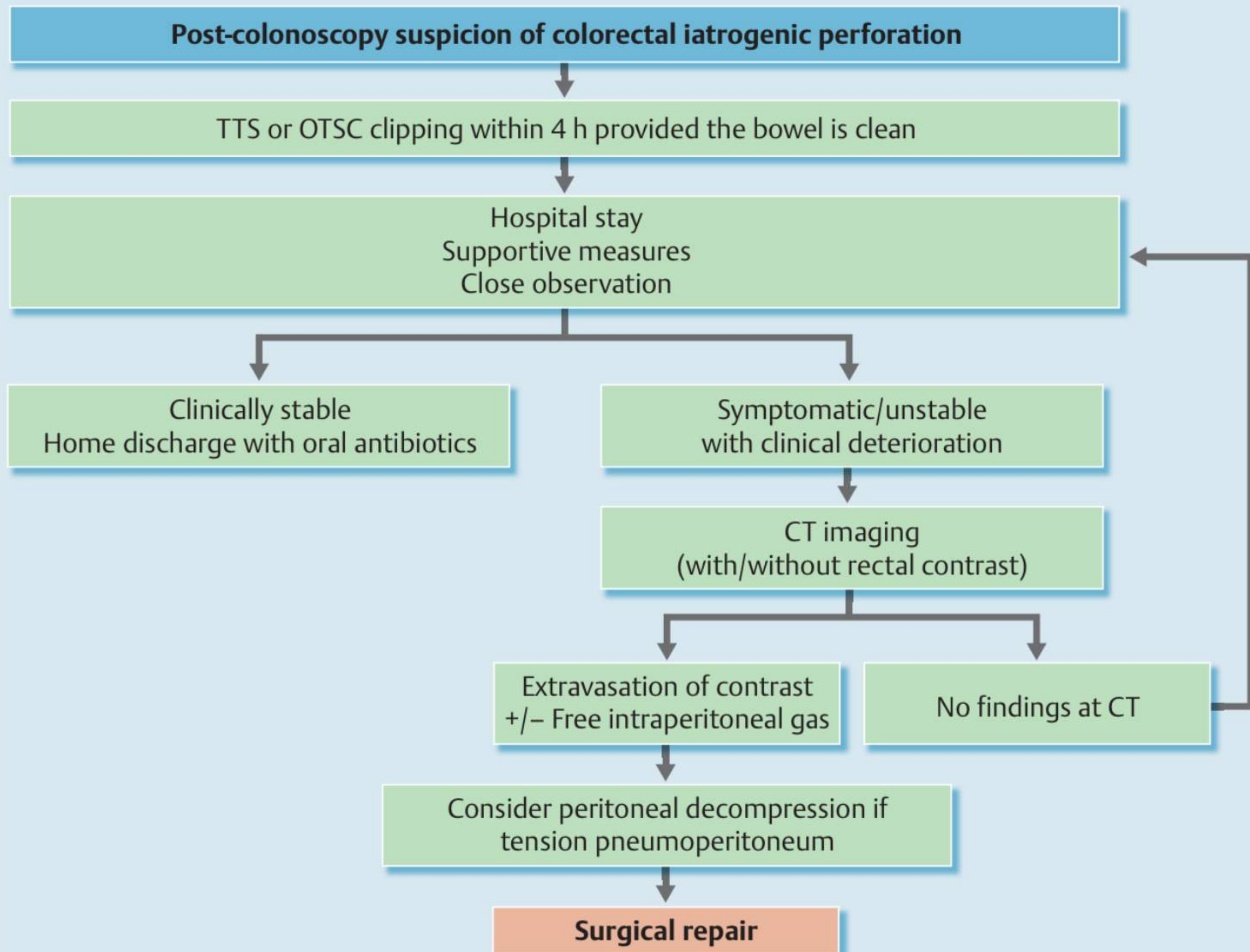


Fig. 4 Algorithm for the management of colonic iatrogenic perforations. TTS, through-the-scope; OTSC, over-the-scope clip; CT, computed tomography.

Συντηρητική αντιμετώπιση

CONSERVATIVE TREATMENT

- Clinical and imaging monitoring
- Absolute bowel rest (2-6 days)
- Broad-spectrum antibiotics (3-5 days)
- Intravenous hydration
- Multidisciplinary team follow-up

Χειρουργική αντιμετώπιση

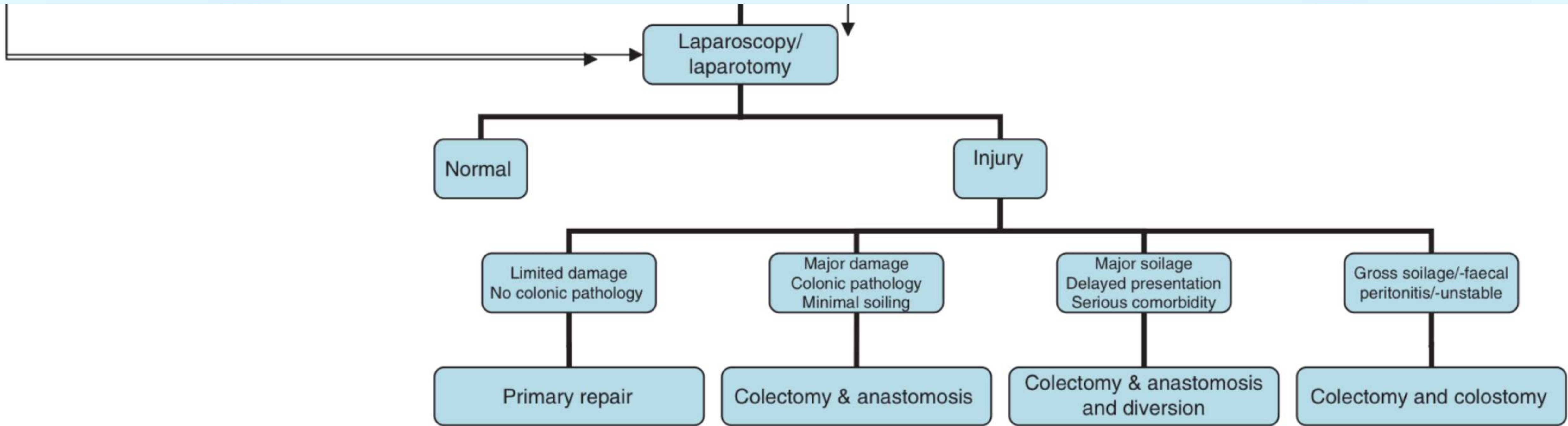


Figure 4 Algorithm for the management of colonoscopic perforations.

Fig. 1 Purse-string technique using dual-channel endoscope with an endoloop and clips in case #3 (A) and #4 (B). Iatrogenic colon perforation developed during diagnostic colonoscopy, and about 20 mm-mucosal defect was noted in the sigmoid colon. Endoscopic sealing with the purse-string technique was performed using an endoloop and clips to close the perforation

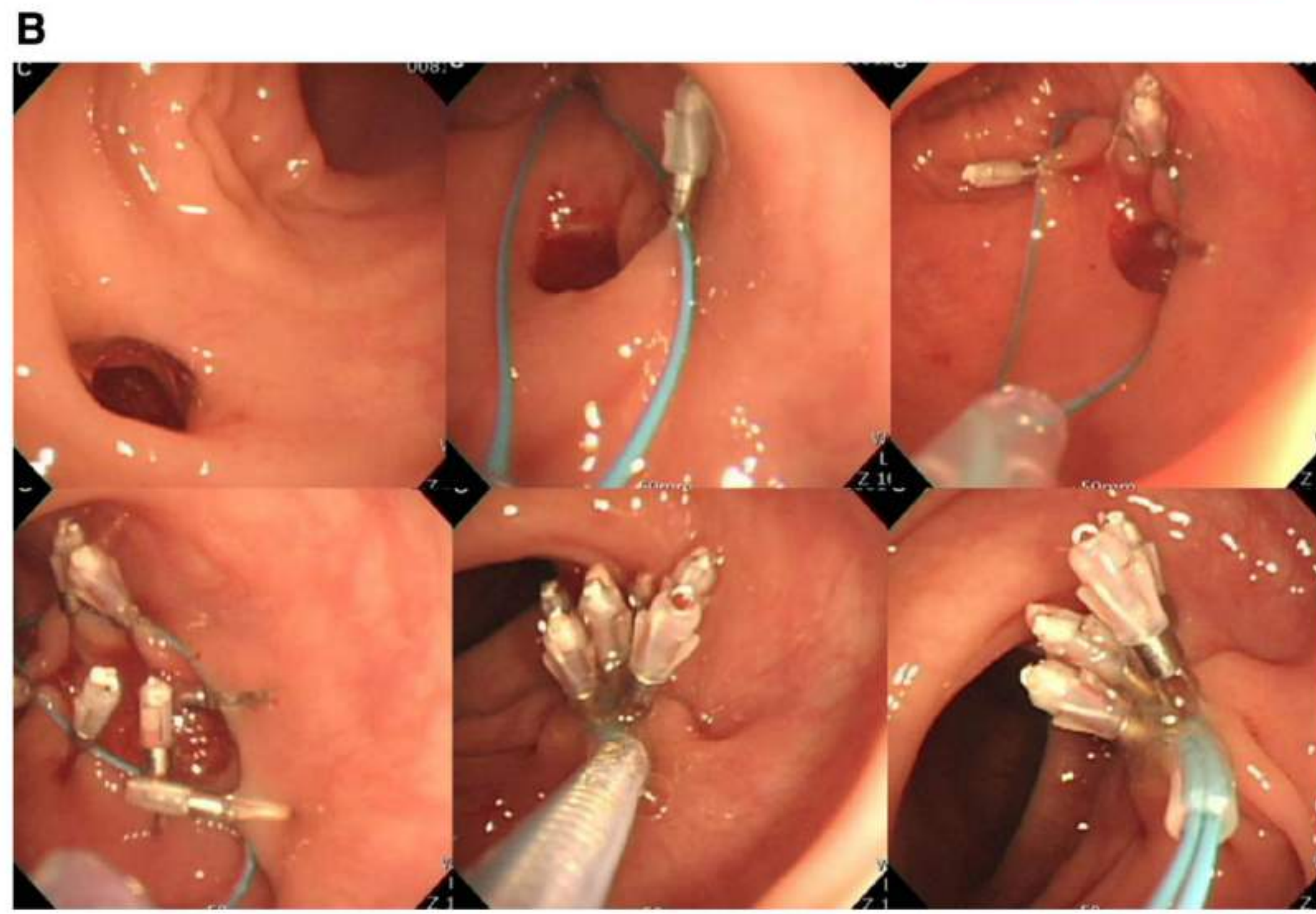
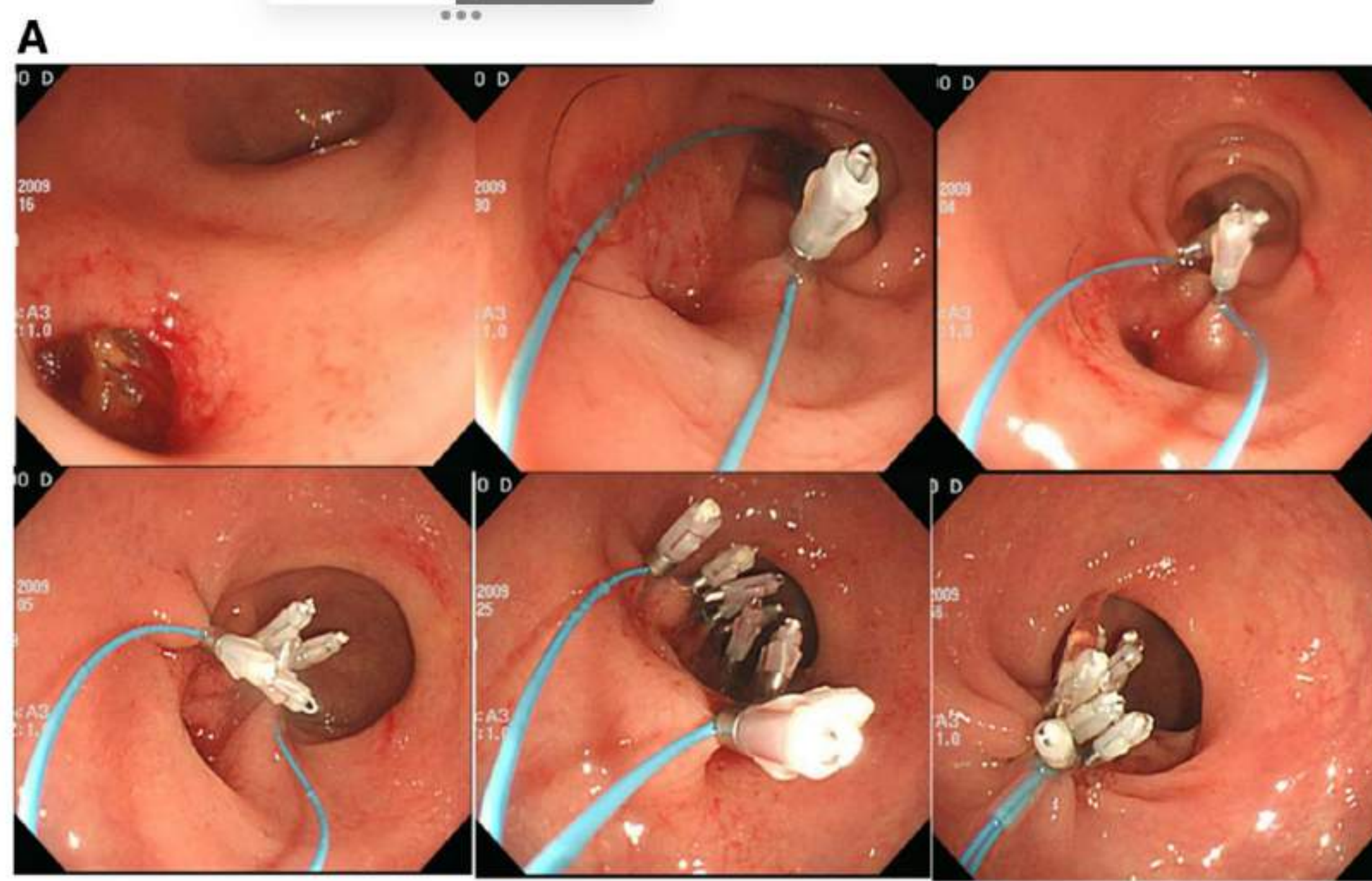
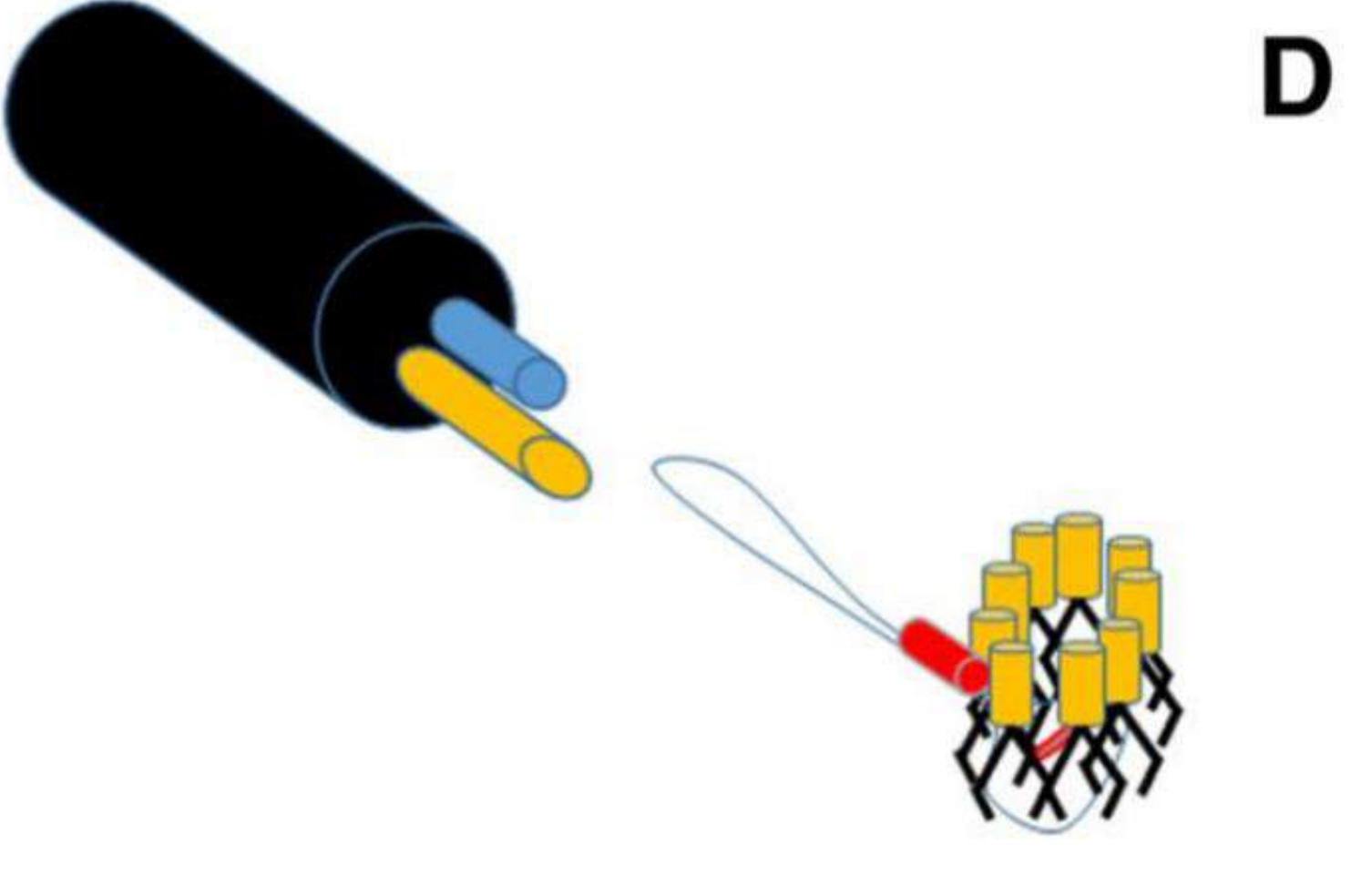
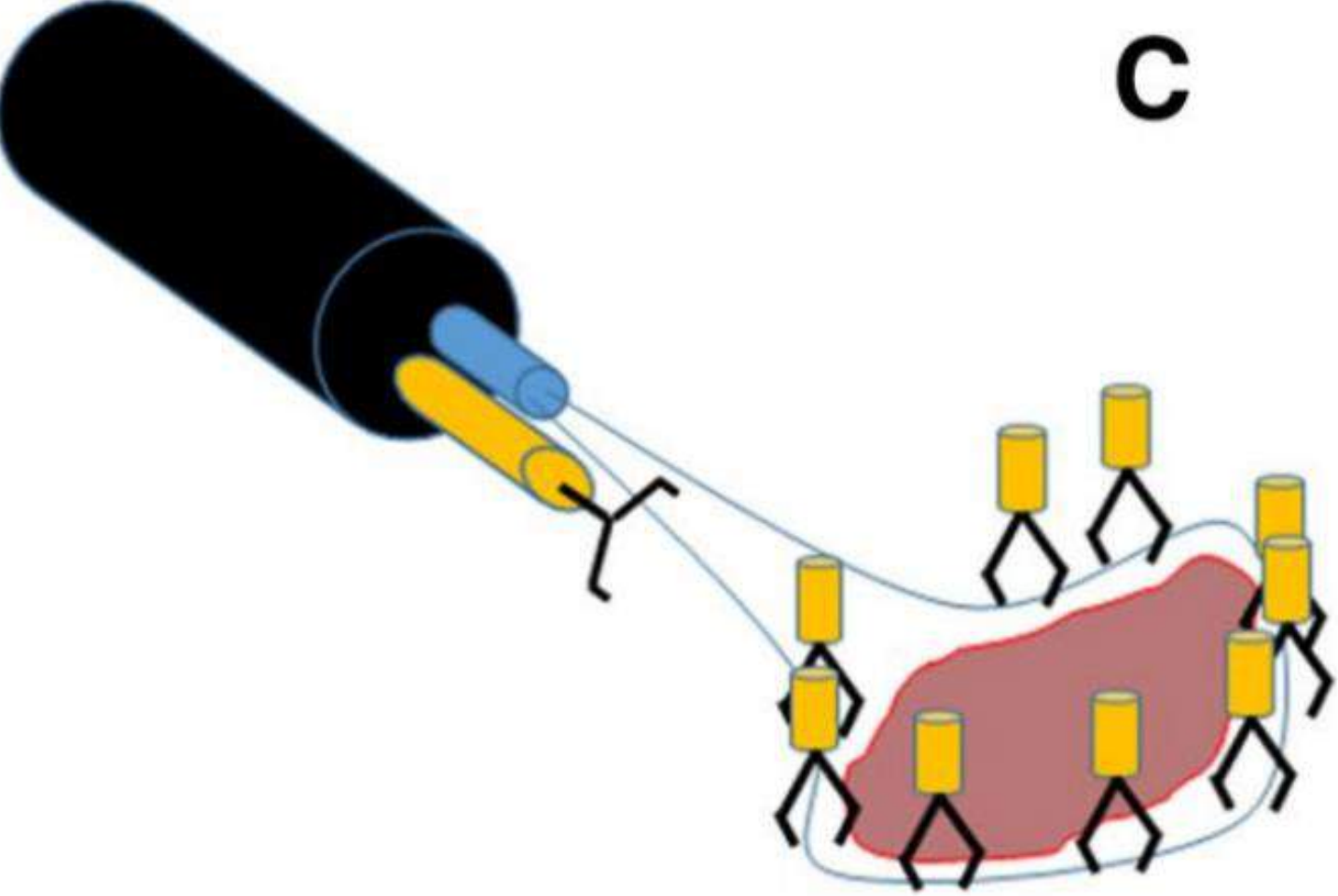
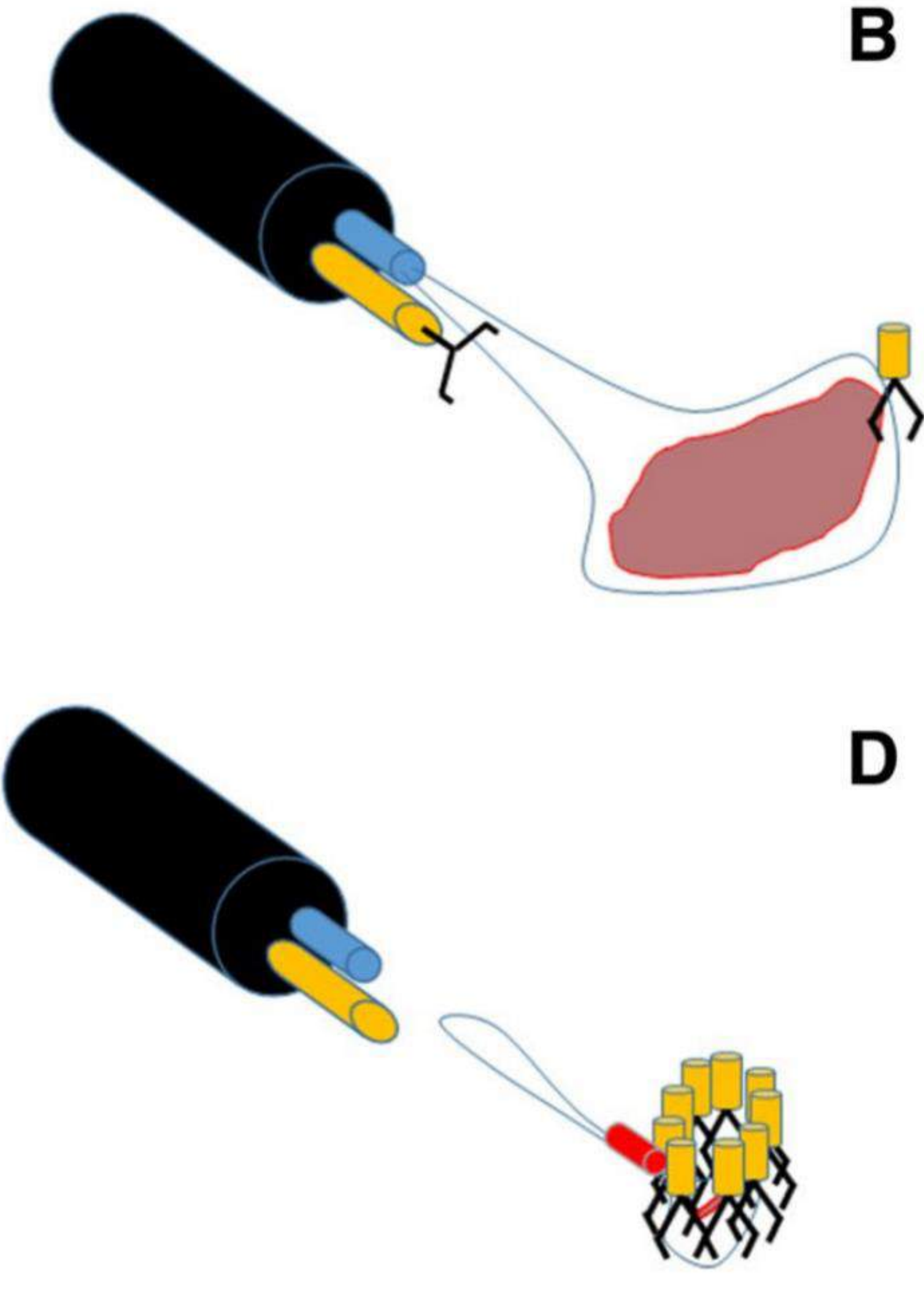
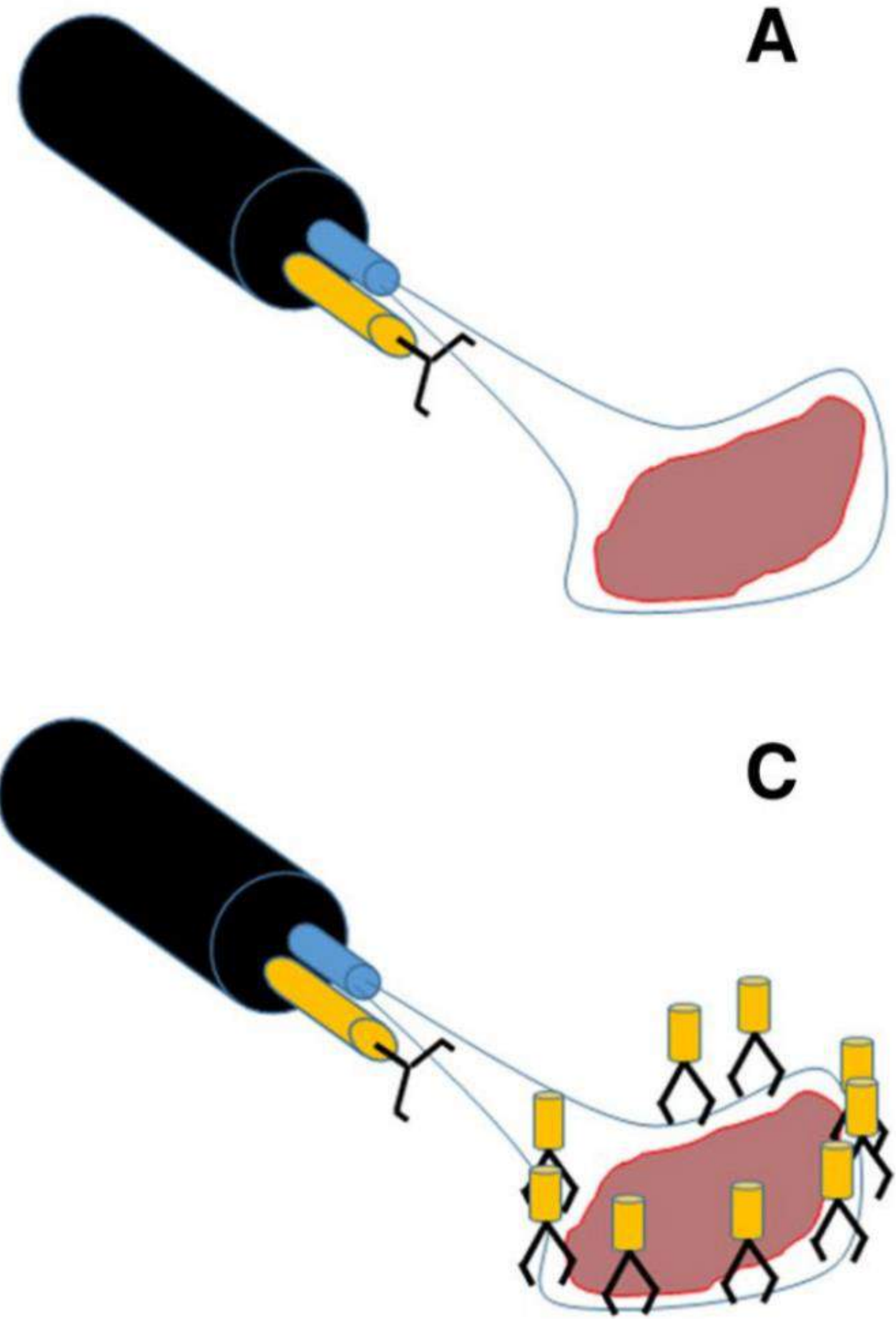


Fig. 2 Simple schematic of purse-string technique. First, an endoloop is placed at the perforation site. Then, the first clip is placed at the proximal site of the defect and anchors the endoloop on the mucosa around the perforated lesion. Next, subsequent clips fix the endoloop beside previous clips. After the defect is encircled by the endoloop and clips, the rim of the opening is approximated by fastening the endoloop with a purse-string technique



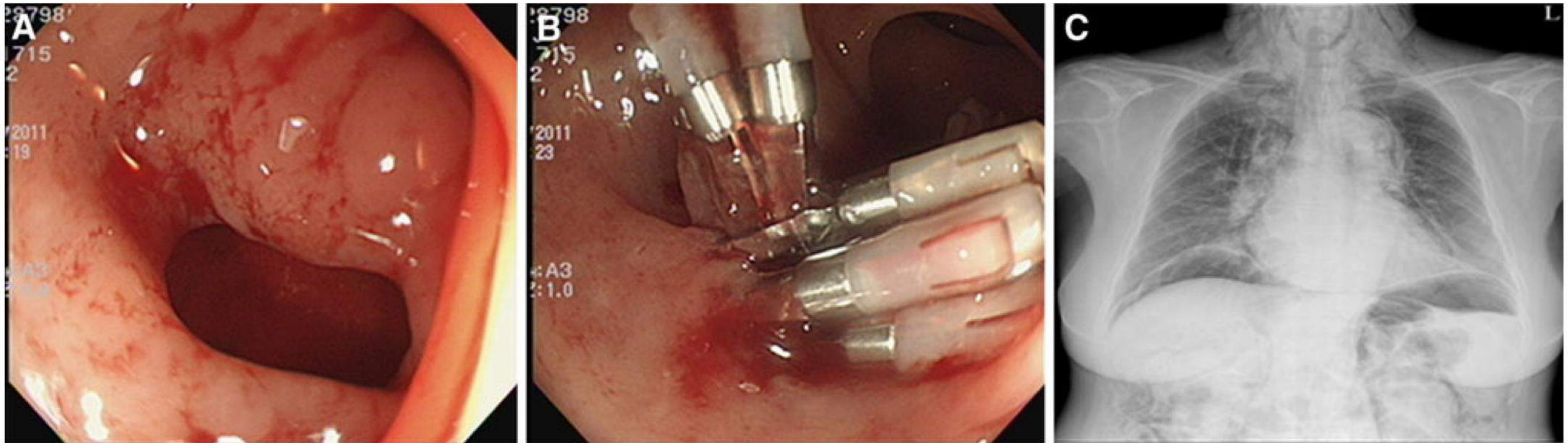


Fig. 1 Colon perforation during diagnostic colonoscopy. **a** The orifice of the perforated colon is observed. **b** The perforated orifice has been closed completely with the clips. **c** Chest X-ray shows a large amount of peritoneal free air

Ορθοκολικές Κακώσεις από βάριο (barium enema) συχνότητα

Diseases of the
Colon & Rectum

Current
Status

Rectal Perforations After Barium Enema: A Review

Peter W. de Feiter, M.D.,^{1,2} Peter B. Soeters, M.D., Ph.D.,¹
Cornelis H. C. Dejong, M.D., Ph.D.¹

Rectal perforations during barium enema are rare but serious, life-threatening complications with an overall mortality rate of approximately 50 percent.¹⁻⁷ The incidence ranges between 0.02 and 0.23 percent;^{2-4,8-11} however, these figures may be underestimated because of underreporting. The risk

Κακώσεις από βάριο-Μηχανισμοί

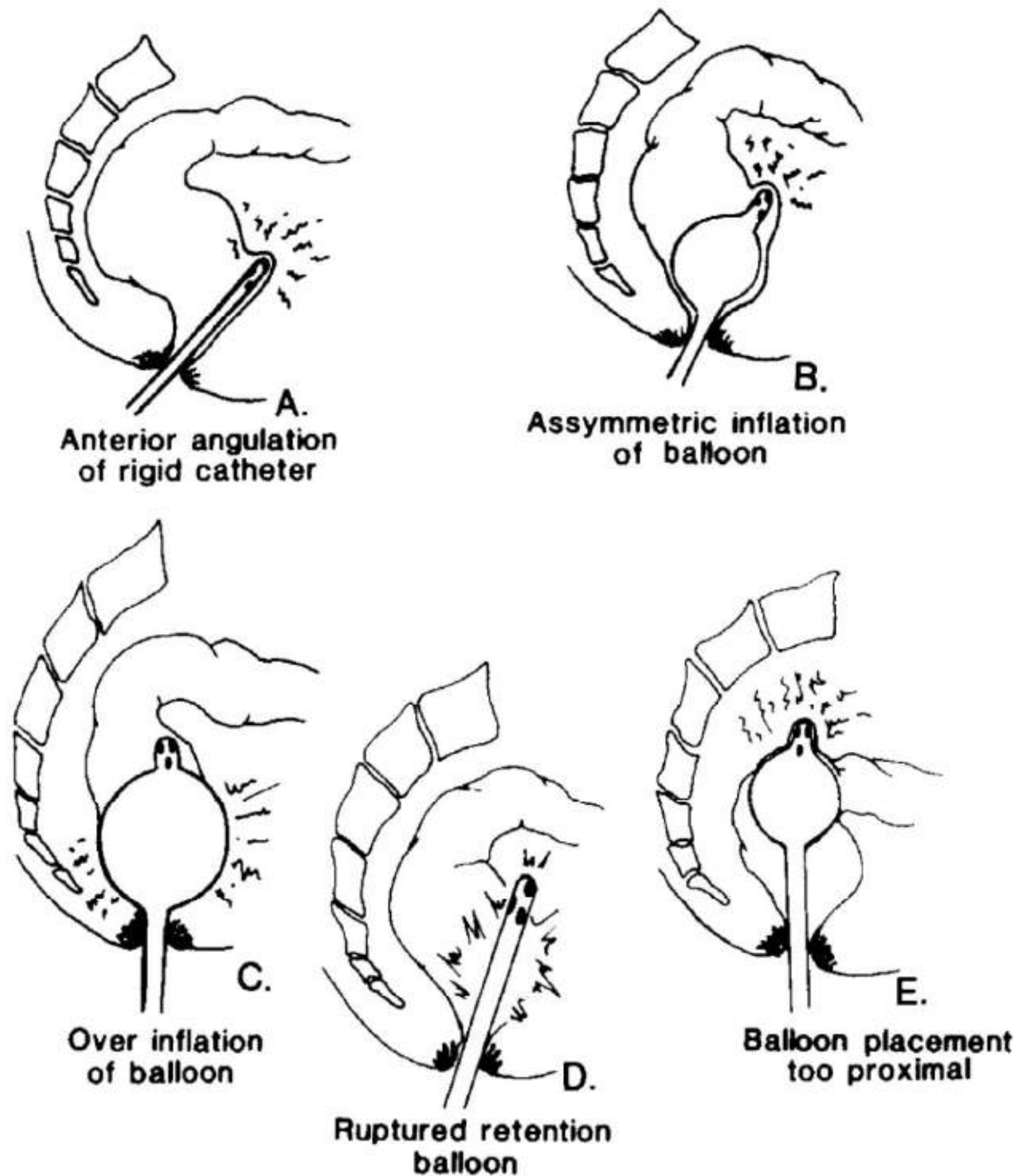


FIG 8. Possible mechanisms of rectal injury caused by enema tips or retention balloons.

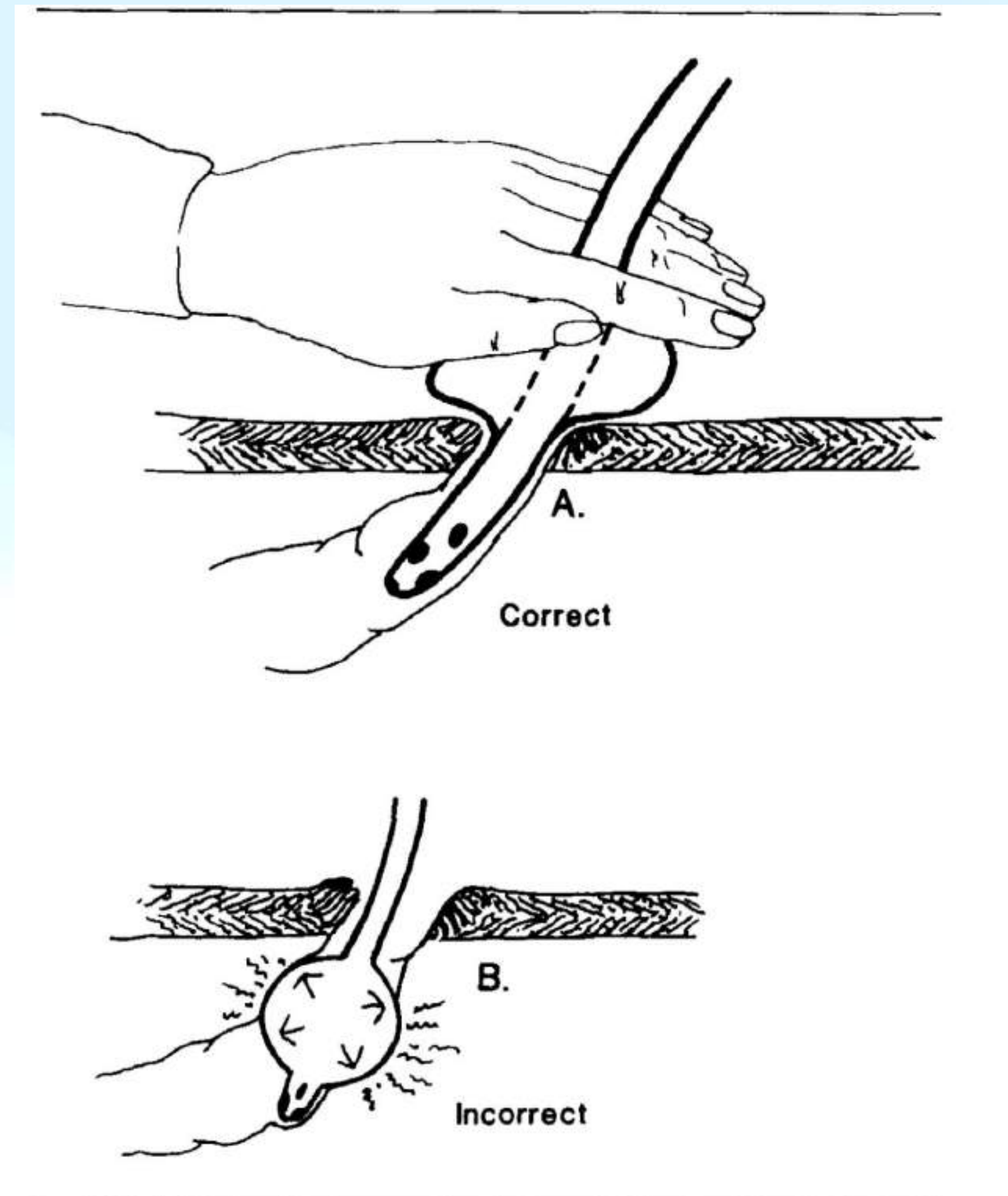


FIG 6. Recommended (*upper*) and hazardous (*lower*) methods of aiding barium retention during a barium enema via a colostomy stoma.

Κακώσεις από βάριο-Ταξινόμηση

investigation. Two types of perforations have been described: intramural, or incomplete, perforations; and transmural, or complete, perforations. Analo-

Ault,⁴² based on anatomic boundaries, Peterson *et al.*⁴³ subdivided perforations in five categories: 1) perforations of the anal canal below the levator; 2) incomplete perforations; 3) perforations into the retroperitoneum; 4) transmural perforations into adjacent viscera; 5) perforations into the free intraperitoneal cavity. Radiologic signs, as well as clinical

Κακώσεις από βάριο-Κλινικές επιπτώσεις



REVIEW ARTICLE

Iatrogenic Lesions of the Colon and Rectum*

J. N. CLASSEN, MD, R. E. MARTIN, MD, and
J. SABAGAL, MD,† *Baltimore, Md*

formance of the studies. A variety of lesions resulting from barium enema examinations have been described in the literature. These include barium granulomas, necrotizing proctitis, barium embolism, free perforation into the peritoneal cavity, and perforations at any distance due to pneumatic pressure.



Figure 2. A. Incomplete perforation. The thin longitudinal layer of barium at the site of the perforation represents the dissection between mucosa and muscularis. B. Barytoma at the site of perforation more than one year after the perforation. (Reprinted from *Curr Probl Diagn Radiol*, Vol 20, Williams SM, Harned RK, Recognition and prevention of barium enema complications, pages 123–151, © 1991, with permission from Elsevier.)



Figure 5. Perforation with venous intravasation of barium. (Reprinted from *Curr Probl Diagn Radiol*, Vol 20, Williams SM, Harned RK, Recognition and prevention of barium enema complications, pages 123–151, © 1991, with permission from Elsevier.)



Figure 4. Intrapertoneal perforation, recently reported by our group as a delayed perforation with signs of peritonitis one week after barium enema.⁶¹ The barium does not follow the bowel contours.

Κακώσεις από βάριο-θεραπεία

**Digestive
Surgery**

Dig Surg 1998;15:270-272

Received: August 5, 1996
Accepted: April 16, 1997

Osnat Madhala^a
Franklin Greif^a
Maia Cohen^b
Shlomo Lelcuk^a

Major Rectal Perforations Caused by Enema: Is Surgery Mandatory?

It seems thus that a conservative approach to the treatment of patients with a perforation of the rectum secondary to barium or cleansing enema can be undertaken even if there is a major extravasation. Provided that it is contained in the retroperitoneum, the bowel is clean, the patients' general condition is good and the rectal tear is minor. This of course does not change the traditional

Ορθοκολικές κακώσεις και Γυναικολογία

- **Φυσιολογικός τοκετός**
- **Καισαρικές**
- **Λαπαροσκοπικές επεμβάσεις**

Κακώσεις κατά τον φυσιολογικό τοκετό

- **Κακώσεις σφιγκτήρων πρωκτού (obstetric anal sphincter injuries, OASIS)**
- **Rectovaginal fistulas**

OASIS-Ορισμός και ταξινόμηση

SOGC CLINICAL PRACTICE GUIDELINE

No. 330, December 2015

Obstetrical Anal Sphincter Injuries (OASIS): Prevention, Recognition, and Repair

Table 2. Classification of OASIS

First degree	Injury to perineal skin only
Second degree	Injury to perineum involving perineal muscles but not involving the anal sphincter
Third degree	Injury to perineum involving the anal sphincter complex:
3a	Less than 50% of EAS thickness torn
3b	More than 50% of EAS thickness torn
3c	Both EAS and IAS torn
Fourth degree	Injury to perineum involving the anal sphincter complex (EAS and IAS) and anal epithelium

ΟΑΣΙΣ-Συχνότητα

The true prevalence of AI related to OASIS may be underestimated. The reported rates of AI following the primary repair of OASIS range between 15% and 61%, with a mean of 39%.² This high prevalence highlights the

ΟΑΣΙΣ-Παθογενετικοί μηχανισμοί

Obstetrical trauma that can lead to AI includes structural damage to the anal sphincter complex, pudendal neuropathy (by direct compression or stretching), or both.

ΟΑΣΙΣ-Συμπτώματα

- Συχνότερα συμπτώματα-κλινικά σημεία στην οξεία φάση:
 - Wound hematoma-disruption
 - Abscess
 - Rectovaginal fistula
- Μεταγενέστερο στάδιο:
 - Persistent pain
 - Dyspareunia
 - Urinary retention
 - Defecation problems
- Ακράτεια κοπράνων (Anal Incontinence)

OASIS-Διάγνωση

Βήμα 1ο: Κλινική αξιολόγηση

The inspection should be done with adequate lighting and analgesia and include:

- inspection of perineum with labial parting,
- inspection of the distal (caudal) posterior vagina, and
- inspection for a third degree tear behind an “intact perineum.”

Palpation is best done³ with the examiner’s dominant index inserted in the anus, and the ipsilateral thumb in the vagina. The 2 fingers then palpate with a “pill-rolling” motion to assess thickness.

Table 3 Correct classification of anal sphincter trauma

	Before course <i>n</i> (%)	After course <i>n</i> (%)	Correct answer	<i>p</i> value ^a
EAS partially torn	265 (88)	293 (97)	Yes	<0.001
EAS completely torn	289 (97)	296 (99)	Yes	0.65
IAS exposed but not torn	254 (87)	273 (94)	Yes	0.005
IAS torn	239 (81)	266 (91)	Yes	<0.001
Anal sphincter and mucosa torn	292 (97)	288 (96)	Yes	0.45

^aMcNemar’s test

ΟΑΣΙΣ-Διάγνωση Εργαστηριακή διερεύνηση

Table 1. Comparison between the available diagnostic tools for the assessment of OASIS.

Diagnostic Test	Target	Sensitivity	Accuracy	Reproducibility	Non-Op. Dependence	Intraoperative Use
TRADITIONAL						
EAUS	Morphology	++	++	-	-	+
Anorectal Manometry	Function	+	+	+	+	-
MRI	Morphology	++	++	++	++	-
EXPERIMENTAL						
TPUS	Morphology	+	+	-	-	+
Impedance Spectroscopy	Morphology Function	+	+	++	++	-

Σύγκριση διαγνωστικών μεθόδων

Therefore, for anatomic OASIS detection, pelvic MR or ultrasonography are better suited [54], while for functional evaluation, anorectal manometry is the gold standard, as reported below.

EAUS represents the gold standard method for the detection of both external and internal anal sphincter injuries as well as for the evaluation of the injury site and extent of damage [34].

Three-dimensional EAUS (3D-EAUS) permits the detection of even small sphincter injuries otherwise invisible or misinterpreted [35,36].

Authors' conclusions

The data available show that at one-year follow-up, immediate primary overlap repair of the external anal sphincter compared with immediate primary end-to-end repair appears to be associated with lower risks of developing faecal urgency and anal incontinence symptoms. At the end of 36 months there appears to be no difference in flatus or faecal incontinence between the two techniques. However, since this evidence is based on only two small trials, more research evidence is needed in order to confirm or refute these findings.

ΟΑΣIS-Θεραπεία

Primary vs Secondary

3.1. Primary Surgical Repair—Sphincteroplasty

If OASIS is diagnosed following vaginal delivery, surgical repair is carried out as soon as possible after childbirth and is defined as a primary repair, representing the mainstay of treatment. When resources for immediate repair are not available, OASIS repair may be delayed for up to 12 h without apparent detrimental effect [63].

Reconstructive surgery, which is carried out several months or years after the initial sphincter injury, is referred to as secondary repair. It follows the same principles of primary repair, and it can be performed either by colorectal surgeons or by appropriately trained gynaecologists. Repeat sphincter repair after a failed primary reconstructive surgery should be considered only if other treatment modalities have been ineffective or if there is an identifiable factor responsible for failure [4].

Sphincteroplasty (2 types)

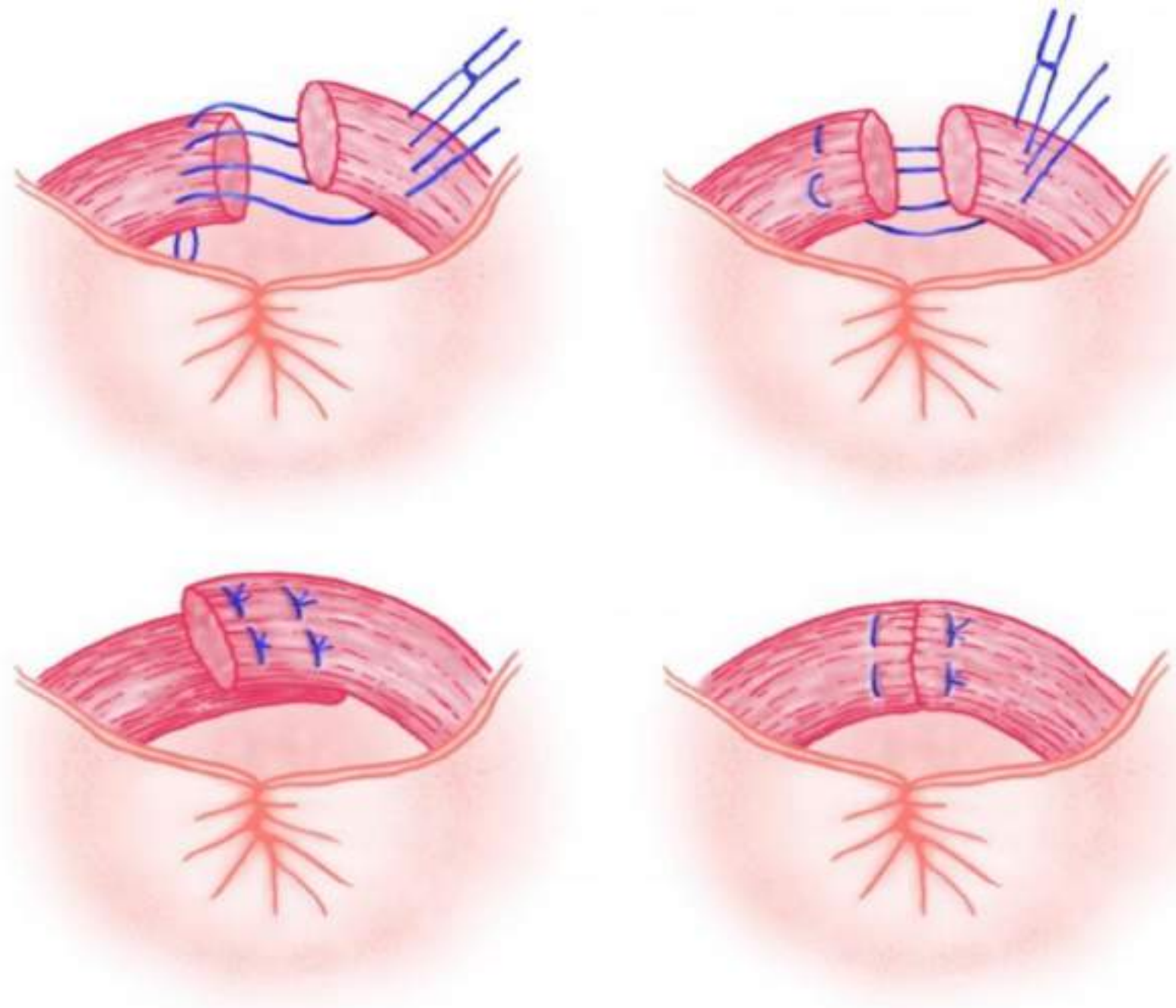


Figure 4. Methods for surgical repair of anal sphincter tears: Overlap technique (images on the left) and end-to-end technique (images on the right).

The overlap technique can only be used for full-thickness tears, as two free ends of the muscle are needed for a proper tension-free overlap repair. The torn ends of the EAS are brought together and sutured by overlapping 1 to 1.5 cm of the muscle ends, one over the other, in a double-breasted fashion [65].

A 2013 meta-analysis did not observe significant differences in the overall rate of perineal pain, dyspareunia, flatus incontinence, and FI between the two repair techniques; the overlap group showed significantly lower relative risk of FI at 12 months compared to the end-to-end group [66].

Rectovaginal fistulas (RVF)-Ταξινόμηση και διάγνωση

50 Review Article

Rectovaginal Fistulae

Bidhan Das, MD¹ Michael Snyder, MD²

¹ Division of Colon and Rectal Surgery, Department of Surgery, University of Texas-Houston, Houston, Texas

² Department of Surgery, University of Texas-Houston, Houston, Texas

neiprui when comparing operative approaches. Traditionally, a “low” fistula is located at or just slightly above the dentate line with the vaginal opening just inside the vaginal fourchette. “High” fistulae are noted as vaginal openings behind or near the cervix, and “middle” when the fistula is noted between the “high” and the “low” areas. The higher

Multiple office maneuvers have been advocated for the identification of more difficult rectovaginal fistulae.⁸ The patient can be placed in lithotomy position with a Trendelenburg positioning, placing a proctoscope, and filling the vagina with warm water; the proctoscope then insufflates the rectum, allowing air to traverse through a possible fistulous tract into the vagina to produce bubbling. Alternatively, a tampon can be placed in the vagina, and a methylene blue retention enema can be administered. The tampon is then removed after 1 hour. Blue on the tampon indicates the presence of a rectovaginal fistula.⁸

RVF-Treatment

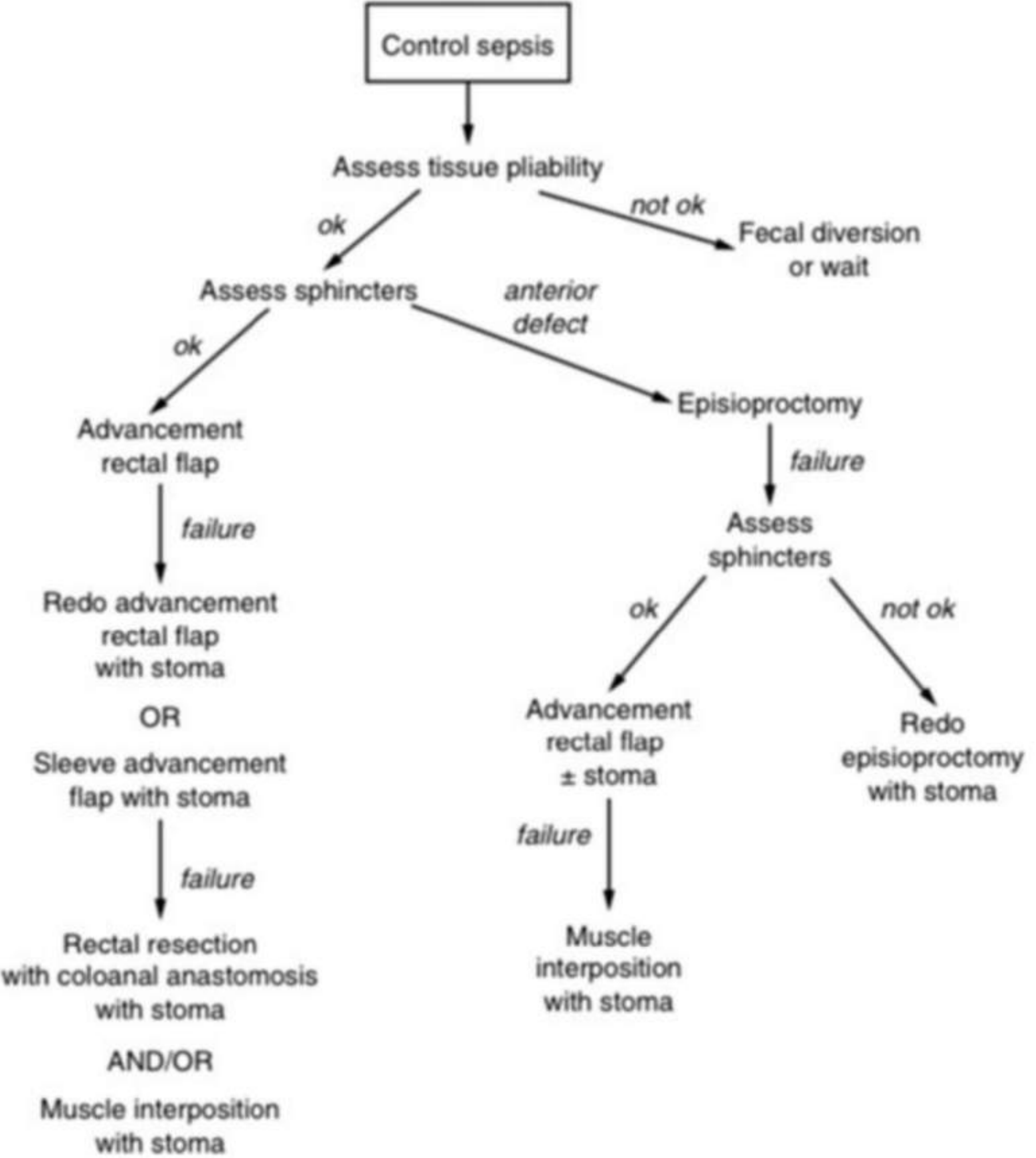


Fig. 2 Algorithm for the management of rectovaginal fistula. (From: Hull T. Rectovaginal Fistula. In: Fazio VF, Church JM, Delaney CP, eds. Current Therapy in Colon and Rectal Surgery. 2nd ed. Philadelphia, PA: Mosby, Inc.; 2005:39.)

Ορθοκολικές κακώσεις κατά τη διάρκεια άλλων επεμβάσεων

Review

Bowel Injury in Gynecologic Laparoscopy A Systematic Review

Natalia C. Llarena, BA, Anup B. Shah, MS, and Magdy P. Milad, MD, MS

Table 4. Cause of Laparoscopic Bowel Injury

Cause	No. of Bowel Injuries (n=366)	% of Bowel Injuries (95% CI)	References
Veress needle, trocar insertion, or creation of pneumoperitoneum	201	54.9 (49.8–60.0)	6,7,9,14,18,21,25,33,34,41–43,46,49,54,58,59,62,86,91,112
Electrosurgery and laser	105	28.7 (24.3–33.5)	7,22,33,34,40,42,43,58,63,90,111,112
During dissection or lysis of adhesions, unknown instrument	42	11.5 (8.6–15.1)	6,7,14,23,24,86,112
Forceps and scissors	15	4.1 (2.5–6.7)	7,34,75
Clip	1	0.3 (0.27–1.53)	5
Suction-irrigator during retraction	1	0.3 (0.27–1.53)	111
McCartney tube insertion	1	0.3 (0.27–1.53)	65

CI, confidence interval.

Table 3. Location of Laparoscopic Bowel Injuries

Location	No. of Bowel Injuries (n=354)	% of Bowel Injuries (95% CI)	References
Small intestine	166	46.9 (41.2–52.1)	7,9,14,17,18,23,25,26,33,34,37,40,42,43,58,60,63,75,80,86,91,112
Large intestine	106	29.9 (25.4–34.9)	7,14,15,17,18,21,25,33,34,37,43,58,62,80,86,111–113
Rectum	62	17.5 (13.9–21.8)	5–7,14,17,18,43,58,90
Rectum	17	5.6 (3.7–8.6)	16,24,34,53,63,65,70,72,73,91

CI, confidence interval.

RECTOVAGINAL FISTULA AFTER GASTROINTESTINAL TRACT CONTINUITY RESTORATION USING A STAPLER – CASE REPORT

JOANNA WELANYK, TOMASZ WYSOCKI, WIESŁAW NOWOBILSKI, MAREK DOBOSZ

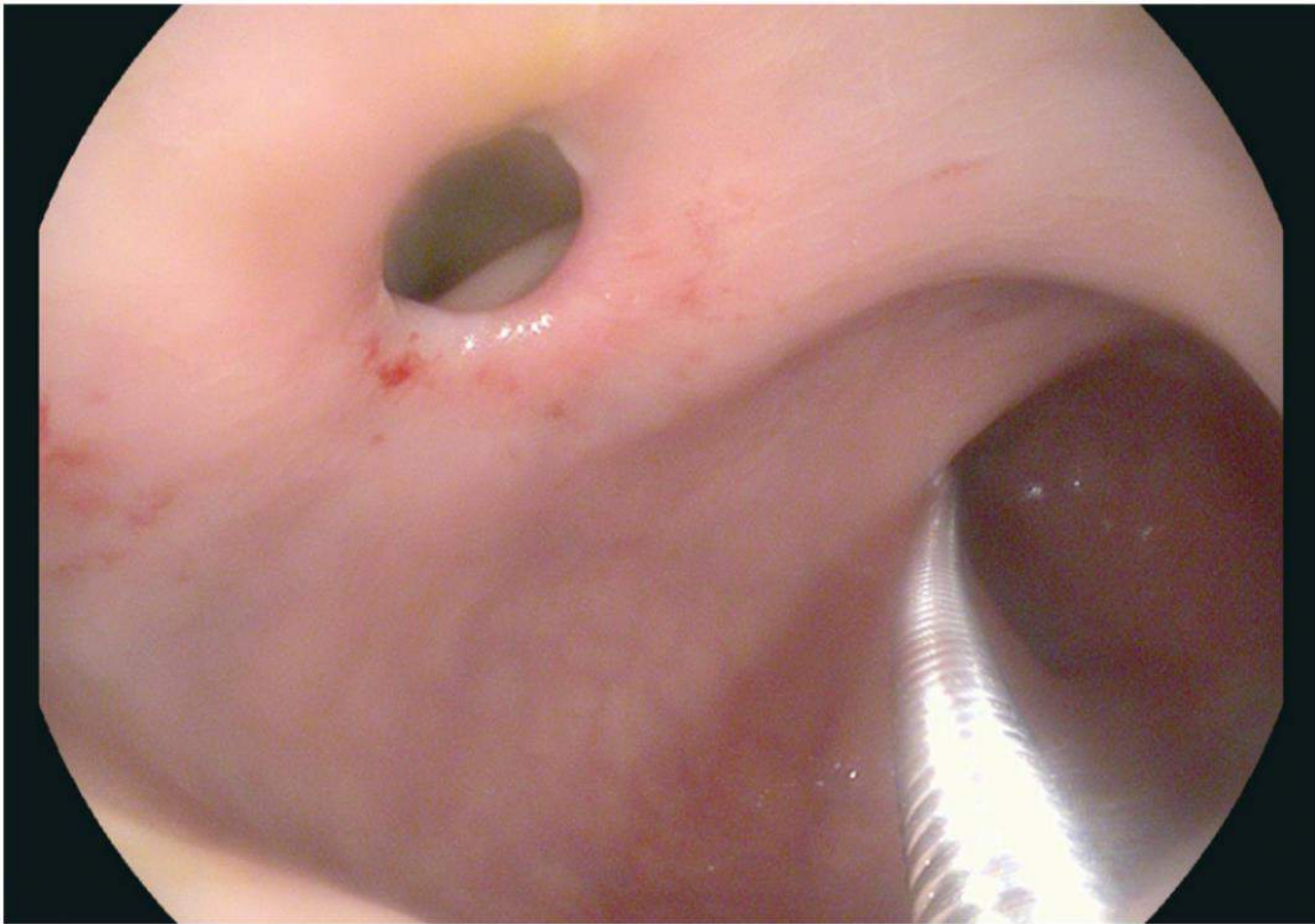


Fig. 1. Rectoscopy – visible rectovaginal fistula (7 cm from the anal orifice)



Fig. 2. After reconstruction of the continuity of the gastrointestinal tract – scheme

Ορθοκολικές κακώσεις από ξένα σώματα

Rectal Foreign Bodies: What Is the Current Standard?

Kyle G. Cologne, MD¹ Glenn T. Ault, MD¹

Systematic review

doi:10.1111/j.1463-1318.2009.02109.x

Colorectal foreign bodies: a systematic review

M. A. Kurer*, C. Davey†, S. Khan‡ and S. Chintapatla*

*Department of General Surgery, Colorectal Unit, York Hospital, York, UK, †North and East Yorkshire Alliance R&D Unit, York Hospital, York, UK and ‡Scarborough Hospital, Scarborough, UK

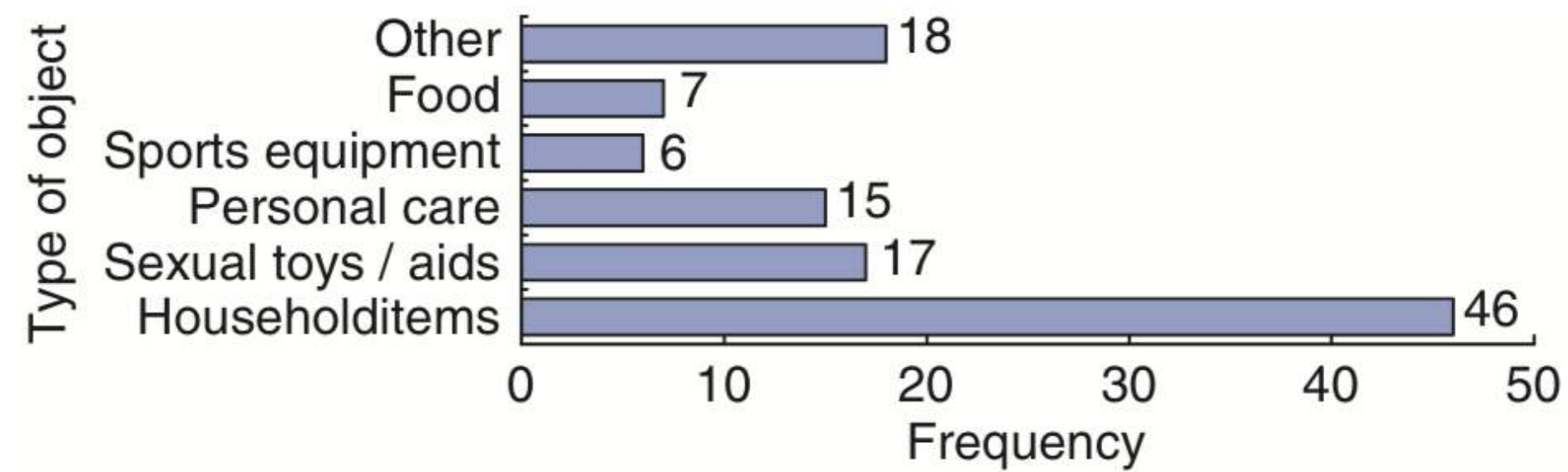


Figure 2 Nature of foreign bodies ($n = 109$).

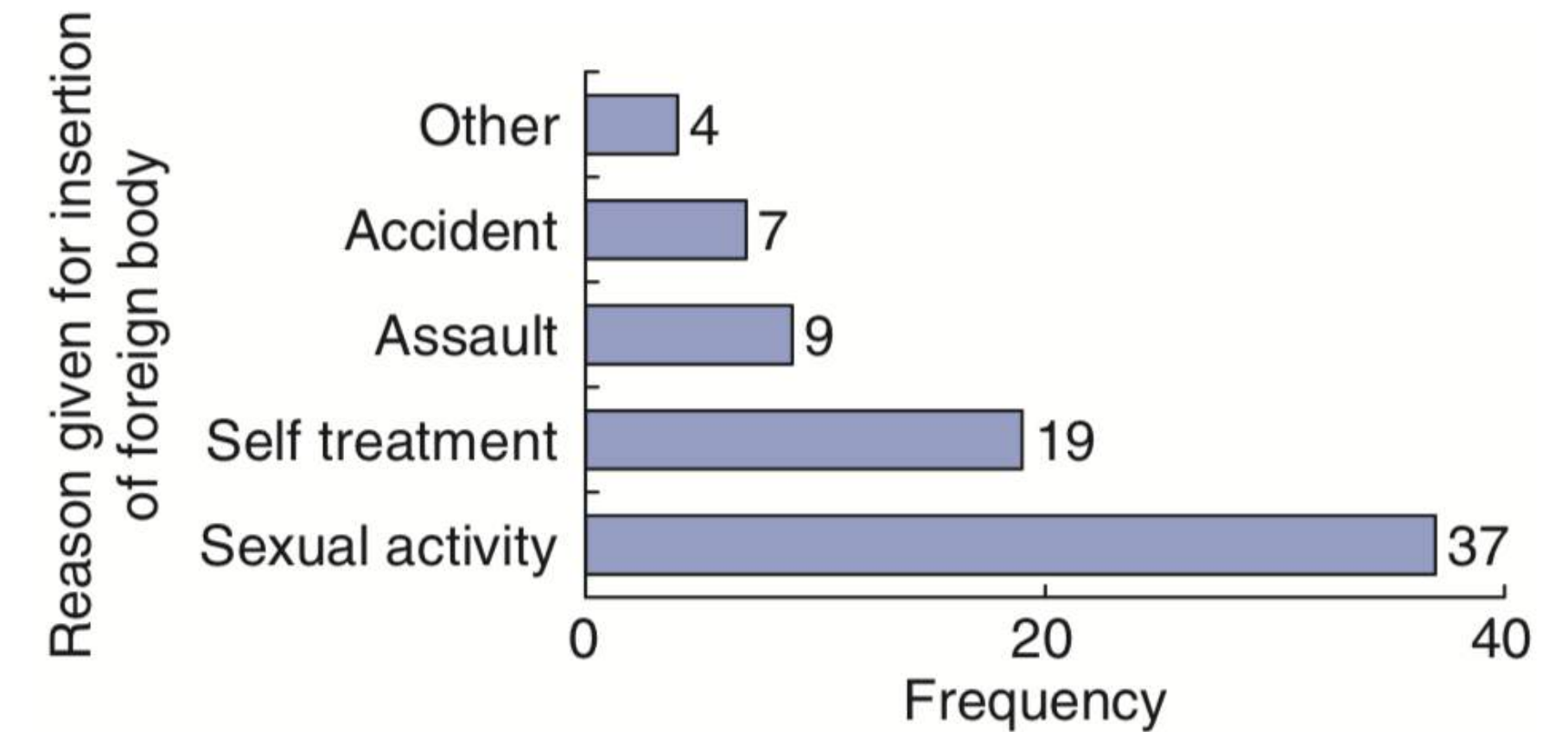


Figure 4 Reasons given for insertion of the foreign body

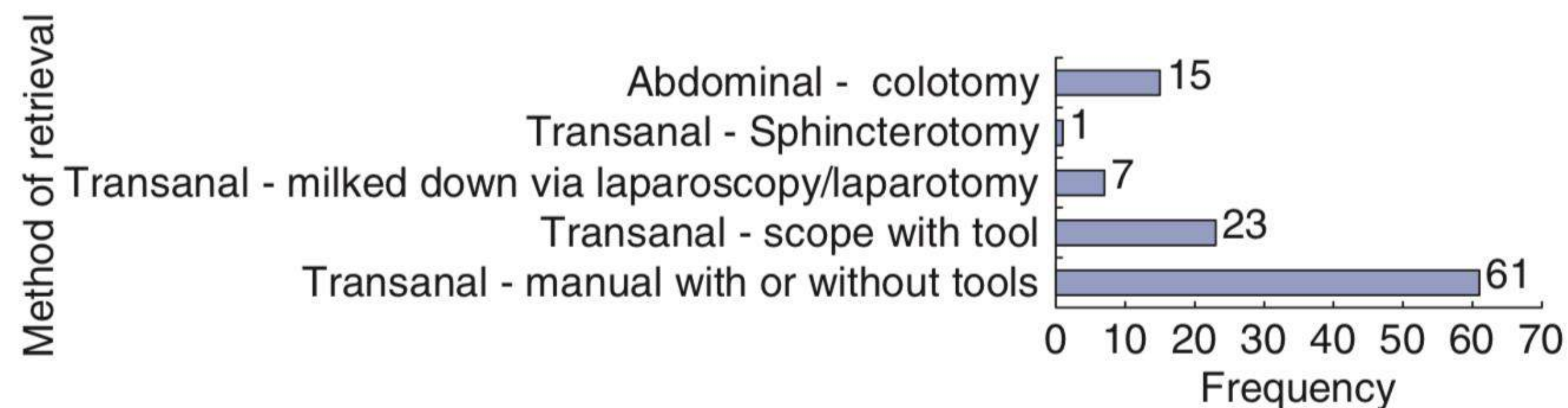


Figure 5 Methods used to retrieve the foreign body ($n = 107$).

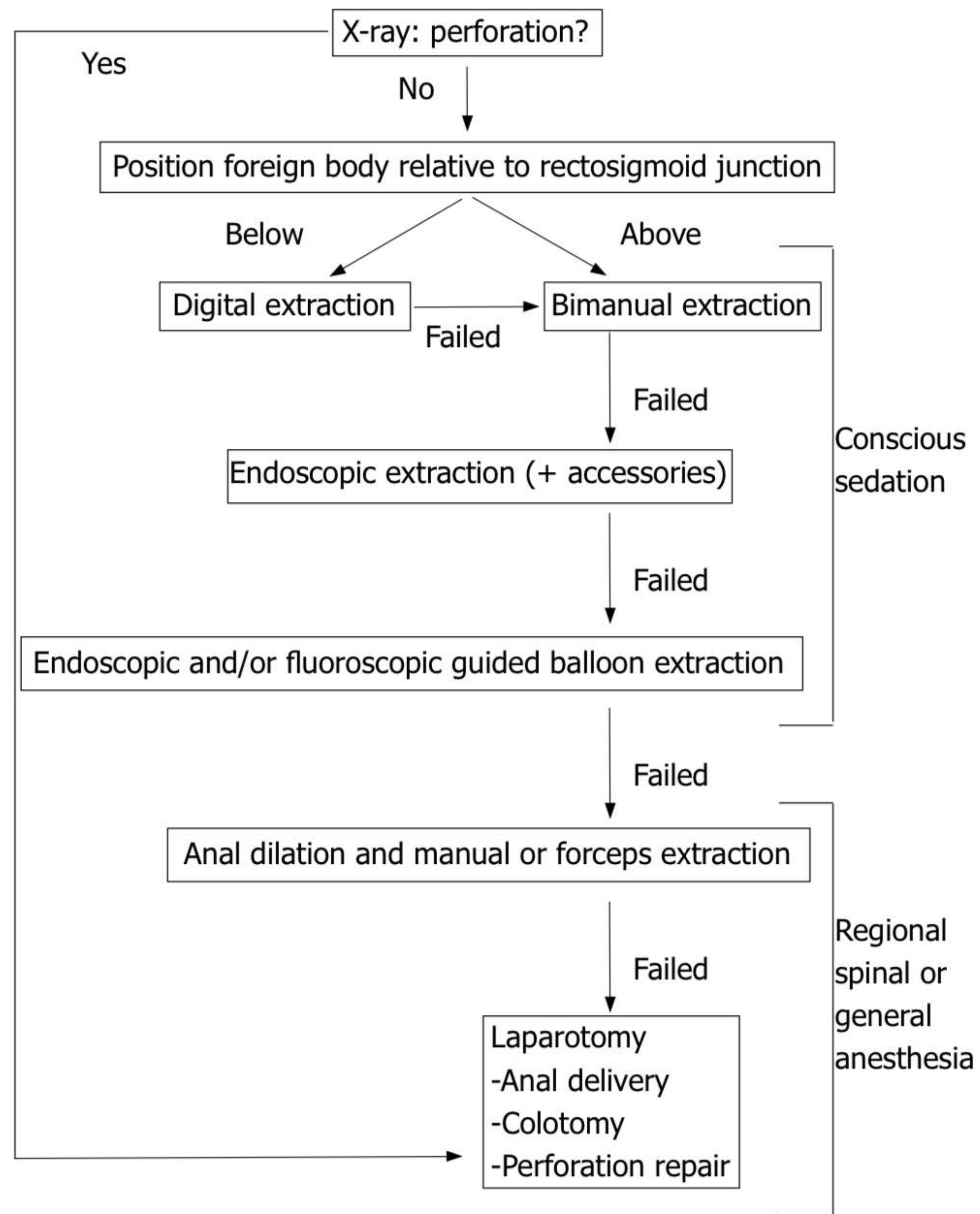


Figure 4 Algorithm for the removal of a colorectal foreign body.

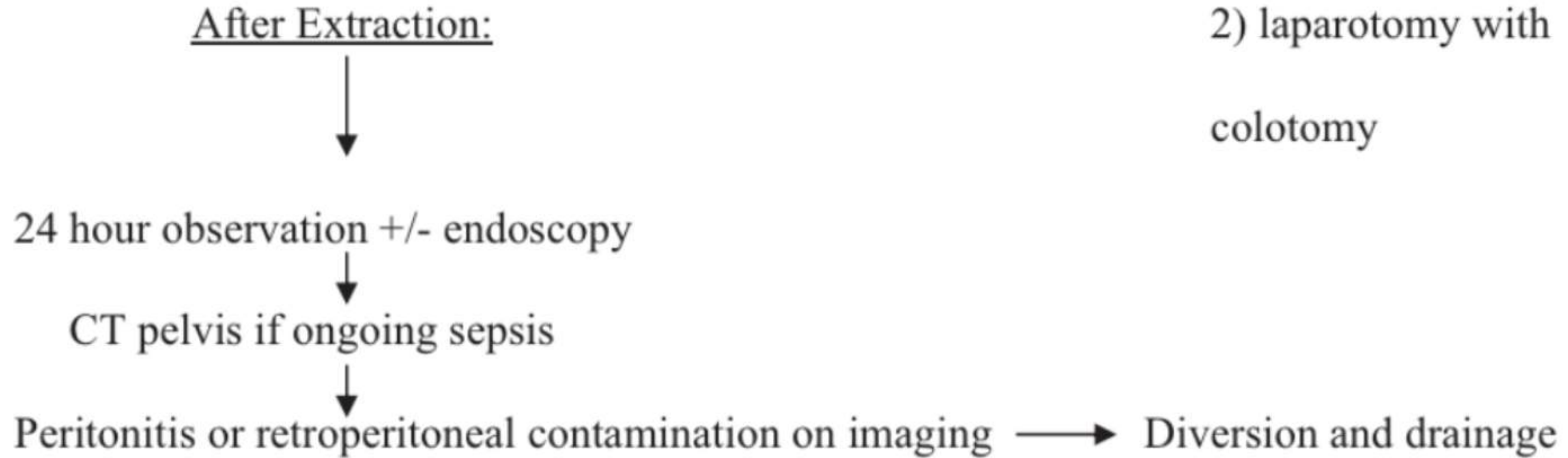


Figure 2 Algorithm for the treatment of rectal foreign bodies.

Management of ingested foreign bodies and food impactions

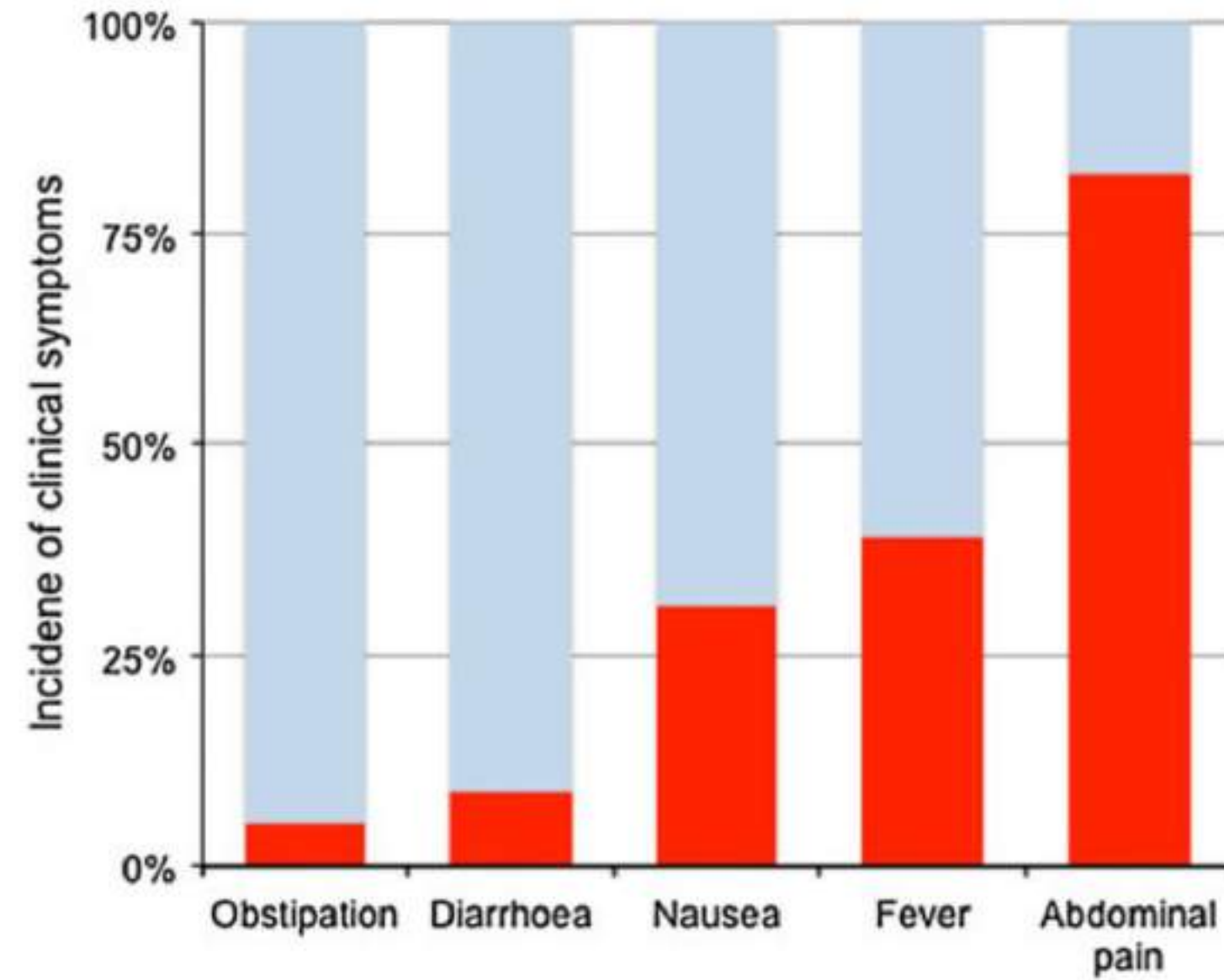


Fig. 3 Clinical symptoms of ingested toothpicks

Table 2 Sensitivity of imaging techniques in detecting toothpicks

	Number of examinations	Correct diagnosis	Sensitivity (%)
Ultrasound	46	15	32.6
Computed tomography	61	26	42.6
Endoscopy	61	44	72.1

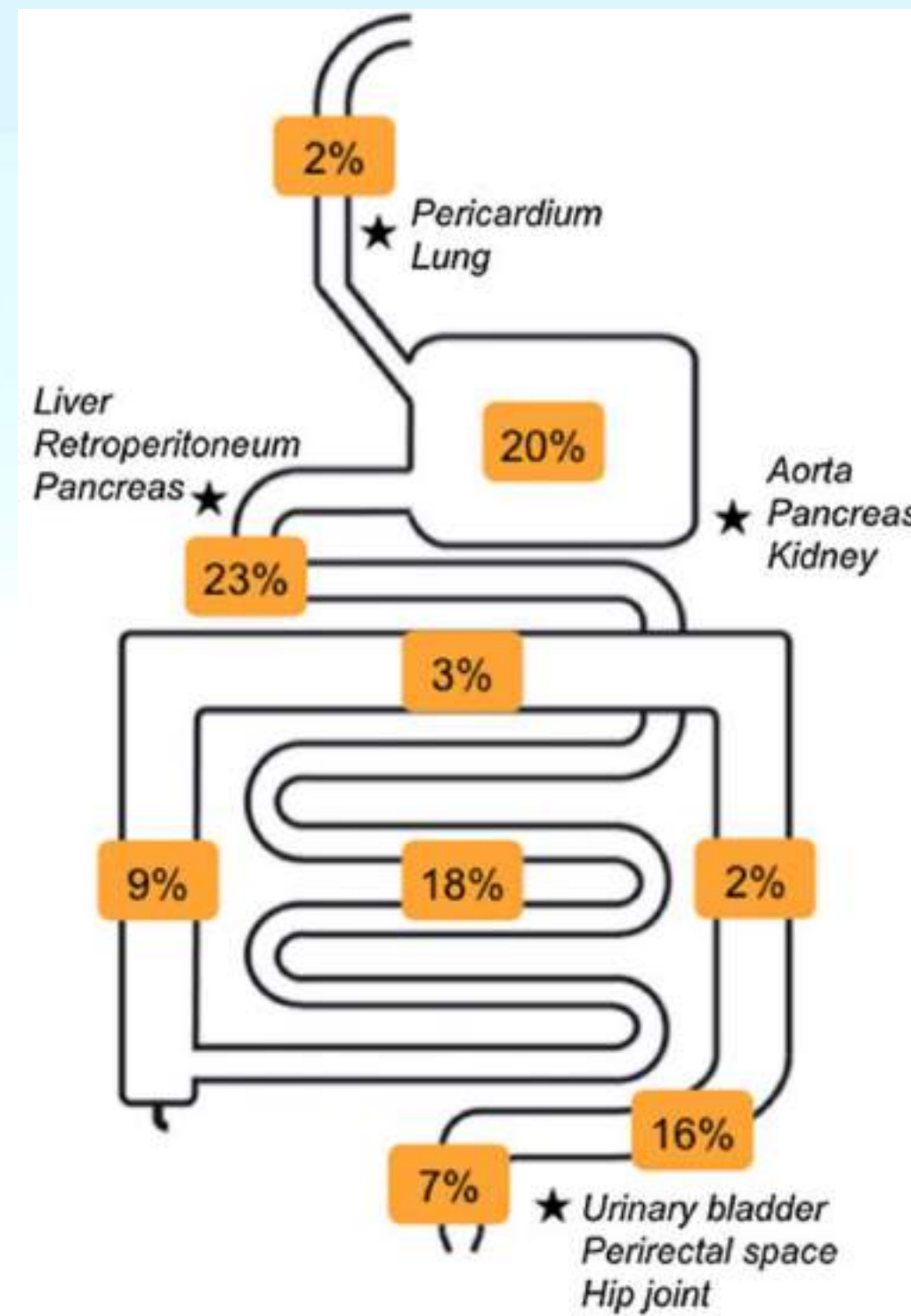


Fig. 4 Localization of the toothpick after ingestion. Stars indicate areas where perforations do not necessarily lead to peritonitis but to migration of the toothpick into adjacent organs and structures

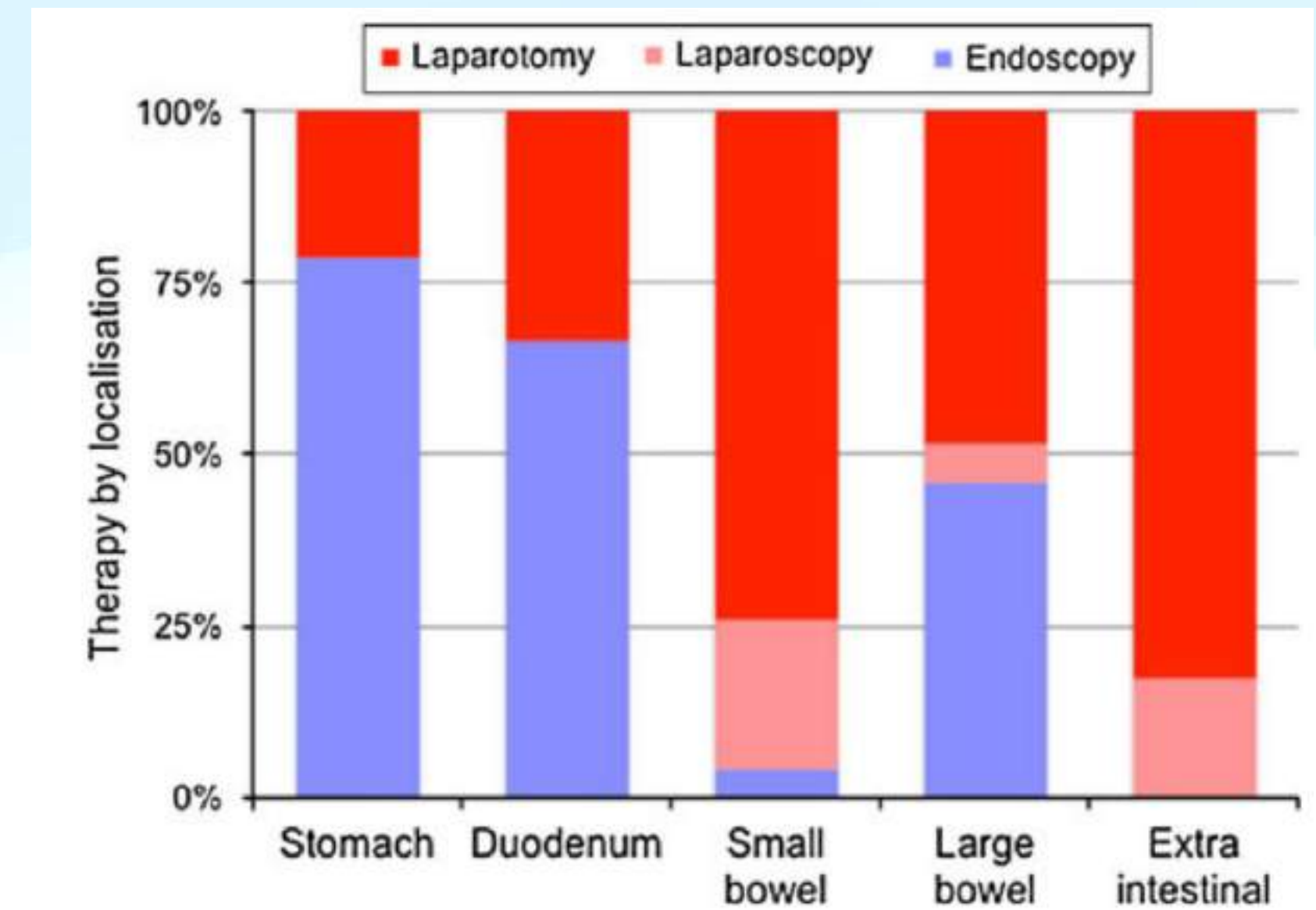


Fig. 5 Therapeutic options based on localization of the toothpick

Case Report

Trans-colonic foreign body penetration of the retro-hepatic vena cava. Report of a case and review of the literature

Offir Ben-Ishay*, Kenan Haloon, Reem Khouri, Yoram Kluger

Department of General Surgery, Rambam Health Care Campus, Haifa, Israel

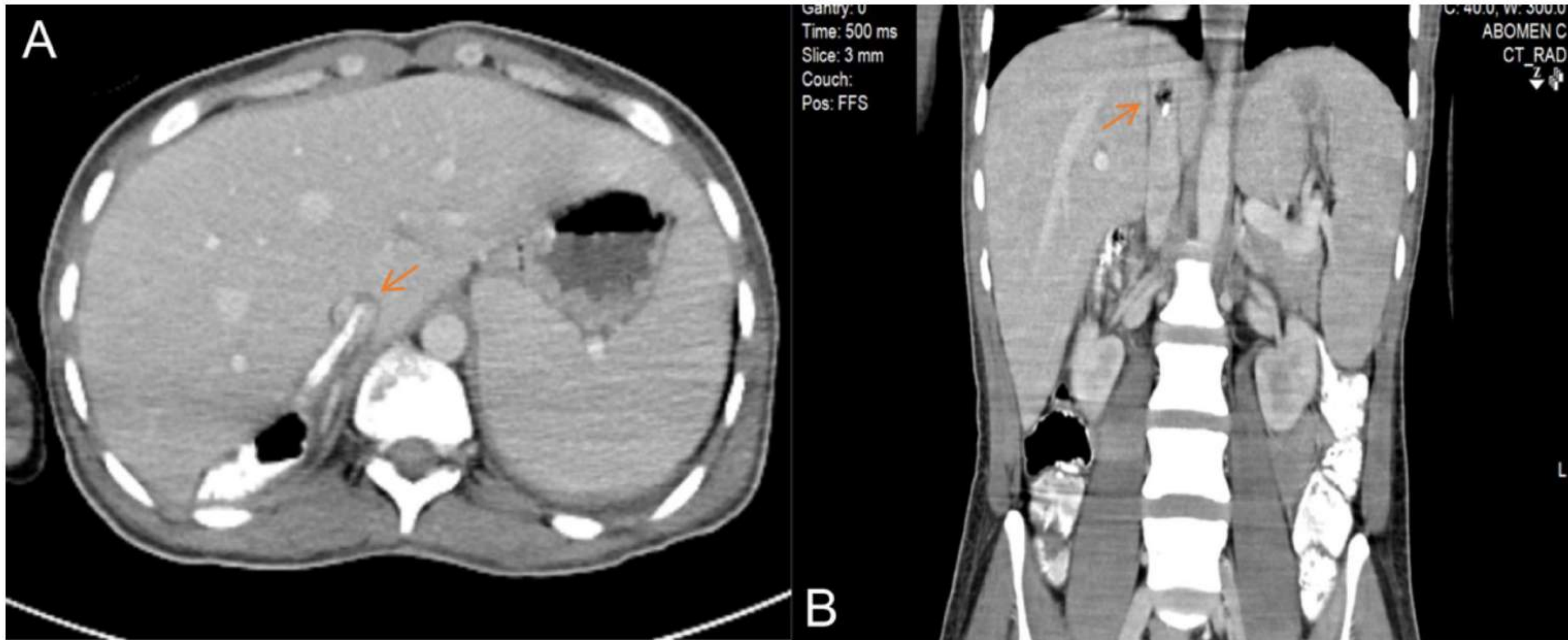


Fig. 1. Foreign body penetrating the lumen of the vena cava (A), vena cava showing intraluminal air in the vicinity of the distal end of the foreign body (B).



Χρόνια Πολλά

<https://www.facebook.com/SPYMEPLAKATZESS>