

Sent on Saturday, 2012 March 03

Search: **NOTES and gastrointestinal endoscopic surgery**

## PubMed Results

Item 1 of 1

1 J Minim Invasive Gynecol. 2011 Nov-Dec;18(6):741-6.

### **Infection during natural orifice transluminal endoscopic surgery peritoneoscopy: a randomized comparative study in a survival porcine model.**

[Guarner-Argente C](#), [Beltrán M](#), [Martínez-Pallí G](#), [Navarro-Ripoll R](#), [Martínez-Zamora MÀ](#), [Córdova H](#), [Comas J](#), [de Miguel CR](#), [Rodríguez-D'Jesús A](#), [Almela M](#), [Hernández-Cera C](#), [Lacy AM](#), [Fernández-Esparrach G](#).

#### **Source**

Endoscopy Unit, Hospital Clínic, University of Barcelona, CIBERehd, Barcelona, Spain.

#### **Abstract**

#### **BACKGROUND:**

Infection in natural orifice transluminal endoscopic surgery (NOTES) remains controversial.

#### **OBJECTIVE:**

To estimate the frequency of infection during NOTES peritoneoscopy with different routes of access and to compare with laparoscopy.

#### **DESIGN:**

Prospective randomized controlled study (Canadian Classification type I).

#### **METHODS:**

Forty female pigs were randomly assigned to 3 NOTES (transgastric, transrectal, and transvaginal) and laparoscopic groups. Antiseptic technique was used for NOTES, whereas laparoscopy was performed in a sterile environment. Preoperative and postoperative intravenous antibiotics were administered. Closure of the transluminal access site was performed in all animals. Peritoneal fluid was collected for culture at the end of surgery and at necropsy at day 14.

#### **RESULTS:**

Thirty-nine peritoneoscopies were successfully completed. Necropsy confirmed complete healing of NOTES incisions, but 2 animals in the laparoscopy group had small abscesses in the abdominal incisions. There were no statistical differences in the presence of peritoneal adhesions. Positive culture results were seen in all groups at the end of the procedure and in all animals at necropsy, but this did not lead to clinical signs of gross infection. The most common organisms that colonized the peritoneum were gram-positive cocci and gram-negative bacilli from the normal swine gastrointestinal flora.

#### **LIMITATIONS:**

Animal model and small sample size.

#### **CONCLUSIONS:**

In these small series of animals and with the careful lavage and preparation used, NOTES appeared to be comparable to laparoscopy in terms of peritoneal contamination and clinical infection. Despite the adherence to a strict antiseptic protocol, peritoneal contamination occurs but does not lead to septic complications in the swine.

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PMID: 22024260 [PubMed - indexed for MEDLINE]

Sent on Saturday, 2012 April 21

Search: **NOTES and gastrointestinal endoscopic surgery**

## PubMed Results

Item 1 of 1

1 Colorectal Dis. 2011 Nov;13 Suppl 7:43-6. doi: 10.1111/j.1463-1318.2011.02781.x.

. **Totally transrectal endoscopic total mesorectal excision (TME).**

[Lacy AM, Adelsdorfer C.](#)

### Source

Department of Gastrointestinal Surgery, Institute of Digestive and Metabolic Diseases, Hospital Clínic, IDIBAPS, Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas, Centro Esther Koplowitz, University of Barcelona, Barcelona, Spain.[alacy@clinic.ub.es](mailto:alacy@clinic.ub.es)

### Abstract

Surgical treatment has been in constant evolution in the search for minimizing incisions regardless of the complexity of the operation. Natural Orifice Translumenal Endoscopic Surgery (NOTES) represents this progression of surgery to less invasive procedures. Transanal endoscopic microsurgery (TEM) is an ideal NOTES platform to access the peritoneal cavity endoscopically through the anus and specifically to allow colorectal resections be performed through smaller, or indeed without, abdominal incisions. Transanal rectosigmoidectomy with total mesorectal excision (TME) using TEM is a feasible and oncologically safe option. Such use of currently available combined hybrid laparoendoscopic systems provides a safe platform to define future clinical applications and advantages of NOTES. Furthermore, it stimulates the active development of technologies that will support and enable it.

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PMID: 22098517 [PubMed - indexed for MEDLINE]

Sent on Saturday, 2012 April 21

Search: **NOTES and gastrointestinal endoscopic surgery**

## PubMed Results

Item 1 of 1

1 Colorectal Dis. 2011 Nov;13 Suppl 7:43-6. doi: 10.1111/j.1463-1318.2011.02781.x.

. **Totally transrectal endoscopic total mesorectal excision (TME).**

[Lacy AM, Adelsdorfer C.](#)

### Source

Department of Gastrointestinal Surgery, Institute of Digestive and Metabolic Diseases, Hospital Clínic, IDIBAPS, Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas, Centro Esther Koplowitz, University of Barcelona, Barcelona, Spain.[alacy@clinic.ub.es](mailto:alacy@clinic.ub.es)

### Abstract

Surgical treatment has been in constant evolution in the search for minimizing incisions regardless of the complexity of the operation. Natural Orifice Translumenal Endoscopic Surgery (NOTES) represents this progression of surgery to less invasive procedures. Transanal endoscopic microsurgery (TEM) is an ideal NOTES platform to access the peritoneal cavity endoscopically through the anus and specifically to allow colorectal resections be performed through smaller, or indeed without, abdominal incisions. Transanal rectosigmoidectomy with total mesorectal excision (TME) using TEM is a feasible and oncologically safe option. Such use of currently available combined hybrid laparoendoscopic systems provides a safe platform to define future clinical applications

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PMID: 22098517 [PubMed - indexed for MEDLINE]

Sent on Saturday, 2012 April 28

Search: **NOTES and gastrointestinal endoscopic surgery**

### PubMed Results

Item 1 of 1

1 Zhonghua Yi Xue Za Zhi. 2011 Jul 19;91(27):1895-8.

. [Value of peritoneoscopy via natural orifice transluminal endoscopic surgery in the diagnosis of peritoneal carcinomatosis].

[Article in Chinese]

[Zhu HM](#), [Li YX](#), [Wang LS](#), [Li YP](#), [Wang N](#), [Shi RY](#), [Luo WX](#).

#### Source

Gastroenterology, Second Affiliated Clinical Medical College, Shenzhen People's Hospital, Shenzhen 518020, China. [zhuhm@medmail.com.cn](mailto:zhuhm@medmail.com.cn)

#### Abstract

##### OBJECTIVE:

To evaluate the value of peritoneoscopy via natural orifice transluminal endoscopic surgery (NOTES) in the diagnosis of patients with peritoneal carcinomatosis.

##### METHODS:

A total of 32 patients with peritoneal carcinomatosis were diagnosed by histological examination of biopsies at our hospital from April 2007 to October 2010. Their data of clinical manifestations, gastroscopy, colonoscopy, abdominal ultrasonography, abdominal computed tomography, magnetic resonance imaging, ascitic cytology and transgastric peritoneoscopy via NOTES were analyzed retrospectively.

##### RESULTS:

Among them, gastrointestinal cancers were diagnosed by digestive endoscopy in 9 cases (28.1%). And ovarian lesions in 8 cases (25.0%), pancreatic cancer in 2 cases (6.3%), primary liver cancer in 2 cases (6.3%) and bile duct carcinoma in 1 case (3.1%) were suspected according to imaging examinations. No peritoneal carcinomatosis was found by digestive endoscopy or imaging examinations. Ascitic cytology was positive in 6 cases (18.8%). Peritoneal carcinomatosis was diagnosed by transgastric peritoneoscopy via NOTES with histological examination of biopsies in all patients. Their findings of transgastric peritoneoscopy via NOTES were divided into 5 types, i.e., mass type (n = 3, 9.4%), nodular type (n = 5, 15.6%), ulcerative type (n = 1, 3.1%), omentum-embracing type (n = 1, 3.1%) and mixture type (n = 22, 68.8%).

##### CONCLUSION:

Transgastric peritoneoscopy via NOTES with histological examination of biopsies has important value in the pathologic diagnosis and the endoscopic typing of peritoneal carcinomatosis.

PMID: 22093844 [PubMed - indexed for MEDLINE]

Sent on Saturday, 2012 May 05

Search: **NOTES and gastrointestinal endoscopic surgery**

### PubMed Results

Item 1 of 1

1 J Gastrointest Surg. 2012 Jan;16(1):183-6; discussion 186-7. Epub 2011 Oct 14.

. **Female sexual function after pure transvaginal appendectomy: a cohort study.**

[Solomon D](#), [Lentz R](#), [Duffy AJ](#), [Bell RL](#), [Roberts KE](#).

**Source**

Department of Surgery, Section of Gastrointestinal Surgery, Yale University School of Medicine, 40 Temple Street, Suite 7B, New Haven, CT 06510,  
USA. [D.Solomon@yale.edu](mailto:D.Solomon@yale.edu)

**Comment in**

- [Endoscopy. 2012 Apr;44\(4\):399-402.](#)

**Abstract**

**BACKGROUND:**

The impact of transvaginal natural orifice transluminal endoscopic surgery (NOTES) on female sexual function is unknown. We therefore performed a prospective cohort study of women undergoing pure transvaginal appendectomies (TVA) versus traditional laparoscopic appendectomies (LA). Using a validated, 19-point, female sexual function index questionnaire (FSFI) assessing six domains of sexual function (desire, arousal, lubrication, orgasm, satisfaction, and pain with intercourse), pre- and postoperative sexual function was compared.

**METHODS:**

Between August 2008 and August 2010, 42 patients with acute appendicitis were offered a pure TVA. Patients who did not wish to undergo a TVA underwent an LA and served as controls. Both groups were provided with an FSFI before surgery and at regular intervals for up to 1 year. Pre- and postoperative FSFI results were compared between cohorts using unpaired t tests, and between individuals within each cohort pre- and postoperatively using paired t tests.

**RESULTS:**

Twenty-two underwent LA, 18 patients underwent a pure TVA, and 2 refused participation in this study. Preoperative and >60 days postoperative FSFI data were available for 21 patients (10 LA and 11 TVA). Baseline FSFI scores were not significantly different between groups (LA,  $19.3 \pm 0.9$ ; TVA,  $19.3 \pm 0.8$ ,  $p = 0.99$ ). FSFI scores at greater than 60 days postoperatively did not differ significantly from FSFI scores preoperatively in either group (LA,  $19.3 \pm 0.9$  to  $19.7 \pm 0.7$ ;  $p = 0.87$ ; TVA,  $19.3 \pm 0.8$  to  $19.4 \pm 0.9$ ;  $p = 0.97$ ). No FSFI domain in either cohort was significantly changed postoperatively.

**CONCLUSIONS:**

Neither LA nor TVA affected female sexual function scores. This suggests that TVA does not have negative effects on female sexual function. The results of this study may prove beneficial in consultations with patients concerning the sexual sequelae of transvaginal surgery.

PMID: 21997432 [PubMed - indexed for MEDLINE]

Sent on Saturday, 2012 July 07

Search: **NOTES and gastrointestinal endoscopic surgery**

PubMed Results

Item 1 of 1

1 J Surg Res. 2012 May 15;174(2):e61-7. Epub 2011 Nov 18.

. **Gastric emptying is delayed in transgastric NOTES: a randomized study in swine.**

[Córdoba H](#), [Guarner-Argente C](#), [Martínez-Pallí G](#), [Navarro R](#), [Rodríguez-D'Jesús](#)

[A, Rodríguez de Miguel C, Beltrán M, Martínez-Zamora MÀ, Comas J, Lacy AM, Thompson CC, Fernández-Esparrach G.](#)

**Source**

Department of Gastroenterology, Hospital Clinic, University of Barcelona, Barcelona, Spain.

**Abstract**

**AIM:**

The aim of this study was to evaluate the restoration of gastrointestinal motility after NOTES using capsule endoscopy (CE).

**MATERIALS AND METHODS:**

Twenty adult Yorkshire pigs were randomly assigned to four groups: transgastric NOTES (gNOTES), transrectal NOTES (rNOTES), transvaginal NOTES (vNOTES), and laparoscopy (LAP). At the end of a 30-min peritoneoscopy with identification of seven predetermined organs, an array of eight receivers and the recorder were attached to the abdominal wall. The CE was delivered into the antrum with the help of an endoscope and a polypectomy snare. Animals were kept alive for 14 d.

**RESULTS:**

Median time for surgery was longer in gNOTES (56 min, range 47-63) and vNOTES (54 min, range 44-79) than in LAP (32 min, range 32-33; P < 0.05 and P < 0.01) and in rNOTES (45.5 min, range 33-56) (P = ns). This increase was related to a larger incision and longer closure times. Images from the CE were successfully retrieved in 19 cases. The CE was retained in the stomach in all animals in gNOTES (459 min; range 360-600), but only in one animal in rNOTES and vNOTES and in none in the LAP group. Failure of passage of the CE beyond the stomach was associated with gNOTES and longer closure of the incision. Animals in the gNOTES group gained less weight than the others and this change was statistical significant when compared with vNOTES animals (1.7 kg, range -1.98 to 4.5 versus 8.4 kg, range 5.8 to 11.45; P < 0.01).

**CONCLUSION:**

Gastric emptying is delayed after gNOTES peritoneoscopy compared with rNOTES, vNOTES, and LAP and this effect is associated with less weight gain.

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PMID: 22225977 [PubMed - indexed for MEDLINE]

Sent on Saturday, 2012 July 28

Search: **NOTES and gastrointestinal endoscopic surgery**

PubMed Results

Item 1 of 1

1 Surg Endosc. 2012 Jun;26(6):1629-36. Epub 2011 Dec 17.

- . **Transgastric pure-NOTES peritoneoscopy and endoscopic ultrasonography for staging of gastrointestinal cancers: a survival and feasibility study.**

[Donatsky AM, Vilmann P, Meisner S, Jørgensen LN, Rosenberg J.](#)

**Source**

Department of Surgical Gastroenterology, Herlev Hospital, University of Copenhagen, Herlev Ringvej 75, 2730 Herlev, Denmark.[andersdonatsky@gmail.com](mailto:andersdonatsky@gmail.com)

**Abstract**

**BACKGROUND:**

Human natural orifice transluminal endoscopic surgery (NOTES) has mainly been based on simultaneous laparoscopic assistance (hybrid NOTES), forgoing the theoretical benefits of the NOTES technique. This is due to a lack of NOTES-specific instruments

and endoscopes, making pure-NOTES procedures difficult and time consuming. An area where pure NOTES could be adopted at its present stage of development is minimally invasive staging of gastrointestinal (GI) cancer. The aim of this study is to evaluate the feasibility of combining transgastric (TG) pure-NOTES peritoneoscopy and intraperitoneal endoscopic ultrasonography (ip-EUS) with intraluminal EUS (il-EUS) for peritoneal evaluation.

#### **METHODS:**

This was a feasibility and survival study where il-EUS followed by ip-EUS and peritoneoscopy was performed in 10 pigs subjected to TG pure NOTES. A score was given with regard to achieved visualisation of predefined anatomical structures. Survival was assessed at postoperative day (POD) 14.

#### **RESULTS:**

All animals survived until POD 14. Median total procedural time was 94 min (range 74-130 min). Median time for il-EUS, ip-EUS and peritoneoscopy was 11 min (range 7-14 min), 13 min (range 8-20 min) and 10 min (range 6-23 min). Il-EUS, ip-EUS and peritoneoscopy resulted in a score of 15/15 points (range 14-15 points), 6/9 points (range 1-8 points) and 12/13 points (range 8-13 points).

#### **CONCLUSIONS:**

TG pure-NOTES peritoneoscopy and ip-EUS combined with il-EUS is feasible and provides sufficient peritoneal evaluation. The technique could have potential for minimally invasive staging of GI cancers.

PMID: 22179468 [PubMed - indexed for MEDLINE]

Sent on Saturday, 2012 August 04

Search: **NOTES and gastrointestinal endoscopic surgery**

#### PubMed Results

Item 1 of 1

1 Hepatogastroenterology. 2012 Jun;59(116):1131-4. doi: 10.5754/hge10622.

**Natural orifice transluminal endoscopic surgery in surgical oncology: analysis of indications and feasibility in cancer patients.**

[Chopra SS](#), [Mrak K](#), [Warnick P](#), [Huenerbein M](#).

#### **Source**

Department of General-, Visceral- and Transplantation Surgery, University Medicine, Berlin, Germany.

#### **Abstract**

#### **BACKGROUND/AIMS:**

Natural orifice endoscopic surgery (NOTES) is an emerging technique that has been postulated as a promising alternative to laparoscopy in the field of minimal invasive surgery. Until now appropriate indications, safe access routes and general feasibility of this approach have not been defined exactly in surgical oncology.

#### **METHODOLOGY:**

A total of 474 patients undergoing cancer surgery were analyzed regarding possible applications of transluminal endoscopic surgery. Patient with potential indications underwent intraoperative endoscopy to evaluate technical aspects, indications and intraoperative feasibility.

#### **RESULTS:**

A potential indication for transluminal surgery was found in 54 of 474 patients (11%) undergoing abdominal cancer surgery. Staging of gastrointestinal tumors was considered the main indication (45%) followed by splenectomy (11%) and diagnostic

excision (11%). As a potential access route the transgastric approach was considered in 42 patients (66%) and the transcolonic approach in 18 patients (28 %). Of these 42 patients, 19 (30%) presented with significant intra-abdominal adhesions which would have resulted in a more complicated procedure. Accurate transluminal orientation was considered impossible in 13 cases (20%).

#### **CONCLUSIONS:**

Although some indications for NOTES procedures in surgical oncology have been identified in this study these techniques have to be assessed cautiously. Implementation of NOTES in surgical oncology is currently difficult because of technical problems, lack of intraoperative orientation and abdominal adhesions.

PMID: 22580664 [PubMed - indexed for MEDLINE]

Sent on Saturday, 2012 August 25

Search: **NOTES and gastrointestinal endoscopic surgery**

#### PubMed Results

Item 1 of 1

1 Endoscopy. 2012 May;44(5):493-8. Epub 2012 Apr 24.

#### **. Transgastric endoscopic gastroenterostomy using a partially covered occluder: a canine feasibility study.**

[Luo H](#), [Pan Y](#), [Min L](#), [Zhao L](#), [Li J](#), [Leung J](#), [Xue L](#), [Yin Z](#), [Liu X](#), [Liu Z](#), [Sun A](#), [Li C](#), [Wu K](#), [Guo X](#), [Fan D](#).

#### **Source**

Department of Gastroenterology, Xijing Hospital, Fourth Military Medical University, Xi'an, China.

#### **Abstract**

#### **BACKGROUND AND STUDY AIMS:**

The use of natural orifice transluminal endoscopic surgery (NOTES) for gastroenterostomy has been previously reported, but it remains technically challenging and additional assistance is often needed. The aim of this study was to develop and evaluate a novel method for the creation of a gastroenterostomy using NOTES with an occluder.

#### **METHODS:**

Transgastric endoscopic gastroenterostomy was performed in 12 healthy female dogs using a therapeutic upper gastrointestinal endoscope and a partially covered occluder. The occluder was removed with a snare 1 week later. The patency of the gastroenterostomy was confirmed by endoscopy, contrast radiological study, necropsy, and histological examination after 2 weeks.

#### **RESULTS:**

NOTES gastroenterostomy with an occluder was successful in all 12 dogs. The mean operative time was  $32.3 \pm 10.3$  min (range 20.3 - 53.5). One dog (the first; 8.3 %) died 4 days after the operation of severe intra-abdominal infection due to incorrect deployment of the occluder and poor bowel preparation. Minor bleeding occurred at the anastomosis after removal of the occluder in two of the remaining dogs (18.2 %). Necropsy revealed postoperative adhesions that had developed at the anastomotic site in one dog (9.1 %). No anastomotic leakage or intestinal obstruction was observed. Complete healing of the anastomosis was confirmed on histological evaluation.

#### **CONCLUSION:**

Gastroenterostomy performed entirely by NOTES using an occluder was technically feasible in this survival animal model.

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PMID: 22531984 [PubMed - indexed for MEDLINE]

Sent on Saturday, 2012 September 22

Search: **NOTES and gastrointestinal endoscopic surgery**

## PubMed Results

Item 1 of 1

1 Surg Endosc. 2012 Jul;26(7):2080-5. Epub 2012 Jan 19.

- . **Minilaparoscopy-assisted natural orifice total colectomy: technical report of a minilaparoscopy-assisted transrectal resection.**

[Lacy AM](#), [Saavedra-Perez D](#), [Bravo R](#), [Adelsdorfer C](#), [Aceituno M](#), [Balust J](#).

### Source

Department of Gastrointestinal Surgery, Institute of Digestive and Metabolic Diseases, Hospital Clínic, University of Barcelona, Villarroel 170, 08036 Barcelona, Spain. [alacy@clinic.ub.es](mailto:alacy@clinic.ub.es)

### Abstract

#### BACKGROUND:

Experimental experience and the technological evolution of minimally invasive surgical devices have allowed initial reports describing the clinical applicability of natural orifice transluminal endoscopic surgery (NOTES). Colorectal resections are an interesting target for the NOTES platform. Theoretically, the transrectal approach could overcome the proposed limitations of transvaginal access, increasing NOTES clinical applicability. Hybrid procedures such as minilaparoscopy-assisted natural orifice surgery (MA-NOS) are the safe progression to pure NOTES. This report describes the first clinical case of a transrectal MA-NOS total colectomy.

#### METHODS:

The patient was a 36-year-old man with severe ulcerative colitis (UC) who experienced failure of immunosuppressive therapy. The standard steps of laparoscopic total colectomy were respected, with basic triangulation maintained throughout the case. A transrectal endoscopic device was used for optic assistance, colon dissection, ileum section, and specimen retrieval. Transrectal MA-NOS total colectomy was assisted by three laparoscopic ports: a 12-mm port used as the terminal ileostomy site, a 2-mm needle epigastric port, and a 5-mm umbilical port used as a drain site at the final intervention. No intraoperative complications occurred.

#### RESULTS:

The total operative time was 240 min. Oral intake was initiated on postoperative day 2. Because of UC rectal activity, a course with azathioprine was completed, and the patient was discharged receiving 1 g of rectal mesalazine for maintenance. The final pathology demonstrated pancolonic inflammatory bowel disease in the form of UC with severe activity.

#### CONCLUSIONS:

Transrectal MA-NOS total colectomy was feasible and safe in the reported case. Improvement in NOTES instrumentation and selective clinical applications are mandatory before clinical trials.

PMID: 22258297 [PubMed - indexed for MEDLINE]