WHEN IS LAPAROSCOPIC DIAGNOSIS THE BEST EMERGENCY OPTION?

Marco Maria Lirici

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EAES CLINICAL PRACTICE GUIDELINES ON LAPAROSCOPY FOR ABDOMINAL EMERGENCIES

Consensus Development Conference 2004
Updates 2006

perforated peptic ulcer, acute cholecystitis,
acute pancreatitis, acute appendicitis,
acute diverticulitis, mesenteric ischemia,
Gynecologic disorders, incarcerated hernia
acute nonspecific abdominal pain,
adhesion and small bowel obstruction,
abdominal trauma

Sauerland, Agresta, Bergamaschi, Borzellino, Budzynski, Champault, Fingerhut, Isla, Johansson, Lundorff, Navez, Saad, Neugebauer

METHODS

Oxford hierarchy for grading clinical studies according to Levels of Evidence / Grade of Recommendation

GoR	LoE	Study design
A	1a	Systematic reviews of RCTs
	1b	Individual RCT
	1c	All-or-none case series
B	2a	Systematic reviews of cohort studies
	2b	Individual cohort study
	2c	Outcomes research
	3a	Systematic review of case-control studies
	3b	Individual case-control study
C	4	Case series
D	5	Expert opinion, bench research, first principles

The EAES clinical practice guidelines on laparoscopy for abdominal emergencies

EMERGENCY LAPAROSCOPY

- PREOPERATIVE WORKUP EFFECTIVE: LAPAROSCOPY TO CONFIRM DIAGNOSIS AND PLANNED TREATMENT CHOICE
- UNCERTAIN PREOPERATIVE DIAGNOSIS: THE PRIMARY AIM IS DIAGNOSTIC

EMERGENCY LAPAROSCOPY BENEFITS

- GOOD DIAGNOSTIC ACCURACY: 86-100% DEFINITIVE DIAGNOSIS IN COHORT STUDIES OF UNSELECTED PATIENTS (1988-2008)
- FEASIBILITY OF SURGICAL TREATMENT THROUGH THE LAPAROSCOPIC APPROACH

EMERGENCY LAPAROSCOPY DRAWBACKS

- MISSED DIAGNOSES
- PROCEDURE RELATED COMPLICATIONS
- DELAY TO DEFINITIVE OPEN SURGICAL PROCEDURE

ACUTE ABDOMEN

- Acute Appendicitis
- Gynaecological disorders
- Acute Cholecystitis
- Perforated Peptic Ulcer
- Acute Pancreatitis
- Acute Divericulitis
- Mesenteric Ischemia
- Acute Abdominal Pain
- Incarcerated Hernia
- Bowel Obstruction

ACUTE APPENDICITIS

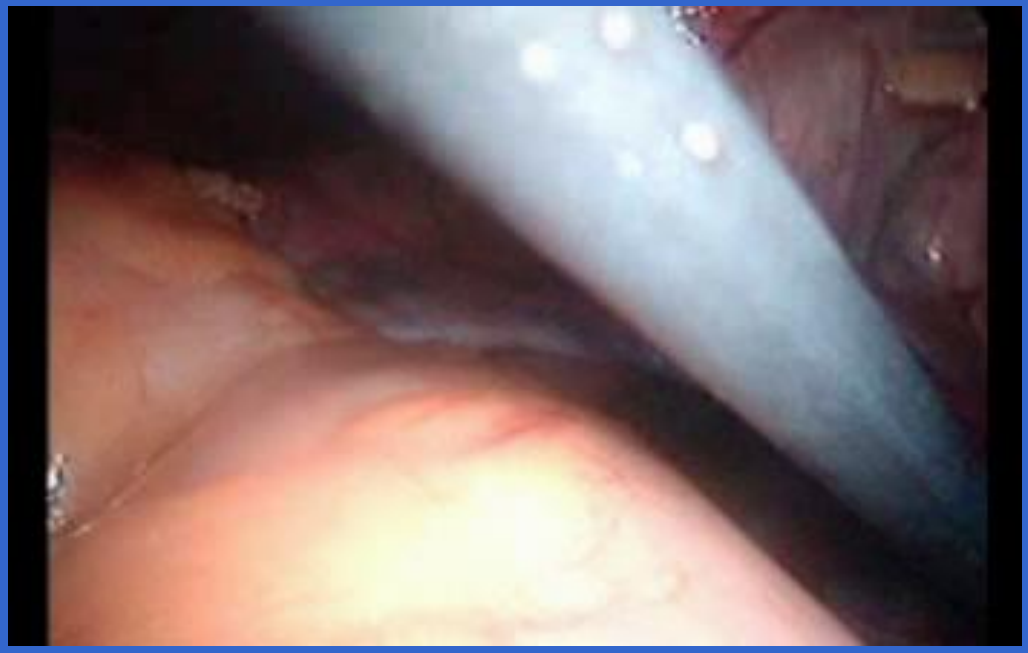
- Patients with symptoms and diagnostic findings suggestive of acute appendicitis should undergo diagnostic laparoscopy (GoR A)
- If diagnosis is confirmed laparoscopic appendectomy (GoR A)
- If diagnostic laparoscopy shows that symptoms cannot be ascribed to appendicitis , appendix may be left in situ (GoR B)

ACUTE APPENDICITIS

- Le linee guida dell'EAES sull'appendicectomia sono chiaramente in favore dell'approccio laparoscopico, soprattutto per il rischio significativamente ridotto di infezione della ferita e il più rapido recupero postoperatorio. Cio' in accordo con I risultati più recenti della Cochrane review
- Il dolore postoperatorio non sembra variare tra intervento laparoscopico ed intervento a cielo aperto
- I costi ospedalieri della appendicectomia laparoscopica sono ancora leggermente più alti di quelli di una appendicectomia a cielo aperto

GYNECOLOGIC DISORDERS

- If gynecologic disorders are the suspected cause of abdominal pain, diagnostic laparoscopy should follow conventional diagnostic investigations (GoR A)
- If needed a laparoscopic therapy for the disease should be performed (GoR A)



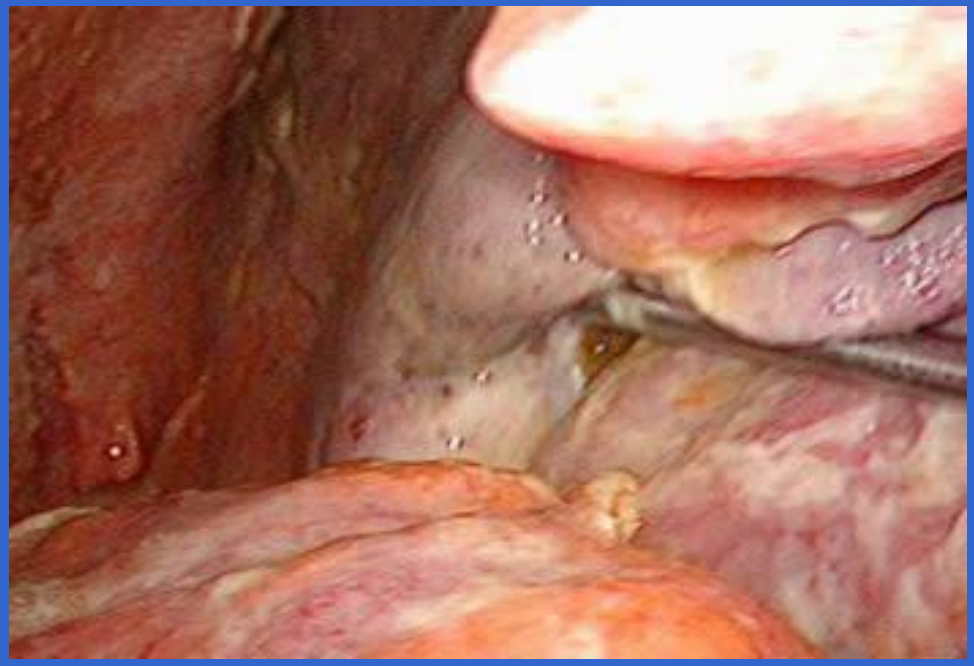
Acute abdomen – Tortion of endometrial ovarian cyst, Pelvic haemoperitoneum – Differential diagnosis with acute appendicitis

ACUTE CHOLECYSTITIS

- **Diagnosis: 100% specificity of clinical signs and US scanning. Laparoscopic cholecystectomy as early as possible after admission (GoR A)**

PERFORATED PEPTIC ULCER

• According to the EAES statement Laparoscopy is “clearly superior” to open surgery. If symptoms and diagnostic findings are suggestive of peptic ulcer perforation, diagnostic laparoscopy and laparoscopic repair are recommended (GoR A)



Acute abdomen – Peptic ulcer perforation with fibrinous ritonitis – confirmed diagnosis and laparoscopic treatment

ACUTE DIVERTICULITIS

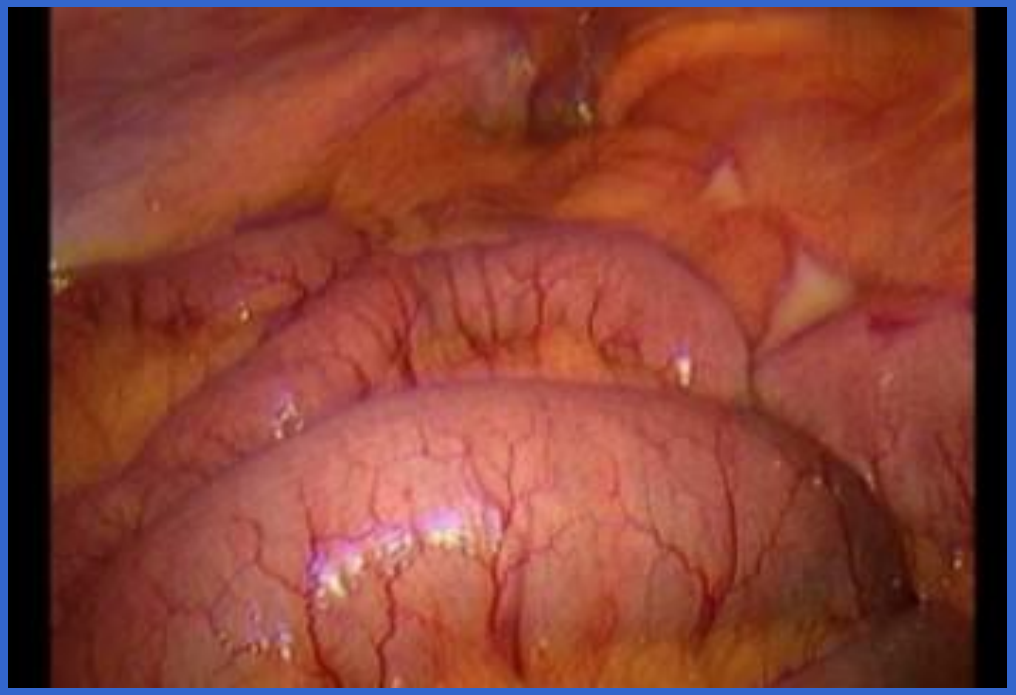
- Diagnosis by clinical signs and TC
- Diagnostic Laparoscopy unnecessary
- Patients with presumed acute uncomplicated diverticulitis should not undergo emergency laparoscopic surgery (GoR C)
- Colonic resection remains standard treatment for perforated diverticulitis, laparoscopic lavage and drainage may be considered in some selected patients (GoR C)

Modified Hinchey classification for complicated diverticulitis

•Stage I	pericolic abscess
•Stage IIa	distant abscess
•Stage IIb	complex or multiple abscesses/fistulae
•Stage III	purulent peritonitis
•Stage IV	faecal peritonitis

ACUTE DIVERTICULITIS

- Per la diverticolite acuta ricorrente complicata, stadi I e II di Hinchey trattamento di scelta Sigmoidectomia VL dopo il secondo attacco, in elezione.
- Per la diverticolite complicata in stadio III e IV trattamento in urgenza sigmoidectomia con anastomosi primaria vs Hartmann. Ruolo laparoscopia controverso



Left colectomy for acute diverticulitis with peritoneal abscess - Hinchey II b

MESENTERIC ISCHEMIA

- If mesenteric ischemia is clinically suspected, conventional imaging is preferable over diagnostic laparoscopy in defining therapeutic management (GoR C)
- Rate of mesenteric ischemia among patients with acute abdomen is 1%. Laparoscopy in these patients relates to its diagnostic rather than its therapeutic opportunities

ACUTE NONSPECIFIC ABDOMINAL PAIN

- Il dolore addominale acuto non specifico è problema importante presente sino al 40% di tutti I ricoveri chirurgici in emergenza
- E' definito tale una condizione di dolore acuto che insorge da meno di 7 gg e che dopo tutti gli accertamenti rimane di natura incerta

- Patients with severe non specific abdominal pain after full conventional investigations should undergo diagnostic laparoscopy if symptoms persist (GoR A)
- Patients with NSAP of medium severity may undergo diagnostic laparoscopy after a period of observation (GoR C)

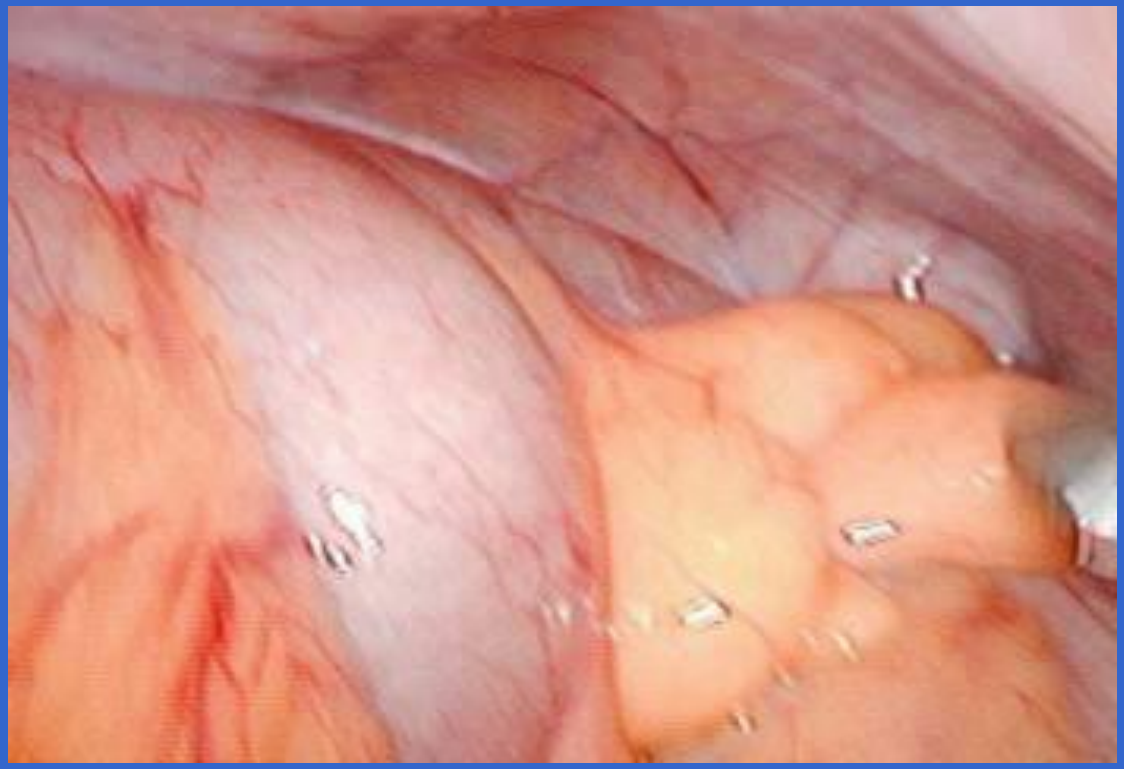
INCARCERATED HERNIA

- Although the open approach remains standard treatment for incarcerated hernia, laparoscopic surgery may be considered in carefully selected patients (GoR C)

- L'evidenza sui relativi benefici della chirurgia laparoscopica delle ernie inguinali ed incisionali è grande ma riguarda esclusivamente studi ove venivano esclusi tutti I casi sintomatici o ricoverati in regime di urgenza
- Appare ingiustificato adottare il principio di trasferimento d'evidenza da dati ottenuti in elezione per indicare l'approccio laparoscopico al trattamento delle ernie incarcerate

When is laparoscopic diagnosis the best emergency option?

Bowel obstruction – colonic or rectal stenosis by colorectal cancer – Laparoscopic Hartman procedure



SMALL BOWEL OBSTRUCTION AND ADHESIONS

- In the case of clinical and radiological evidence of small bowel obstruction nonresponding to conservative management, laparoscopy may be performed using an open access techniques (GoR C)
- If adhesions are found at laparoscopy, cautious laparoscopic adhesiolysis can be attempted for release of small bowel obstruction (GoR C)

- L'adesiolisi laparoscopica in emergenza non ha incontrato accettazione generale a causa della visione limitata e del rischio di lesioni jatrogene dell'intestino
- Esiste poi una elevata percentuale di conversione che oscilla tra il 15 e il 43 %

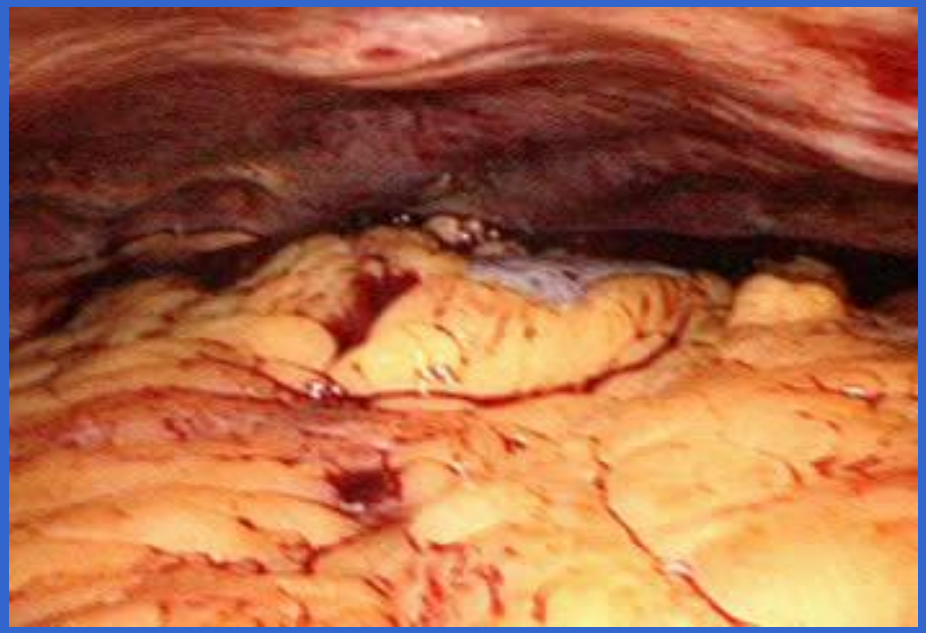
BLUNT AND PENETRATING ABDOMINAL TRAUMA

- For suspected penetrating trauma, diagnostic laparoscopy is a useful tool to assess the integrity of peritoneum and avoid a nontherapeutic laparotomy in stable patients (GoR B)
- Stable patients with blunt abdominal trauma may undergo diagnostic laparoscopy to exclude relevant injury (GoR C)

BLUNT AND PENETRATING ABDOMINAL TRAUMA

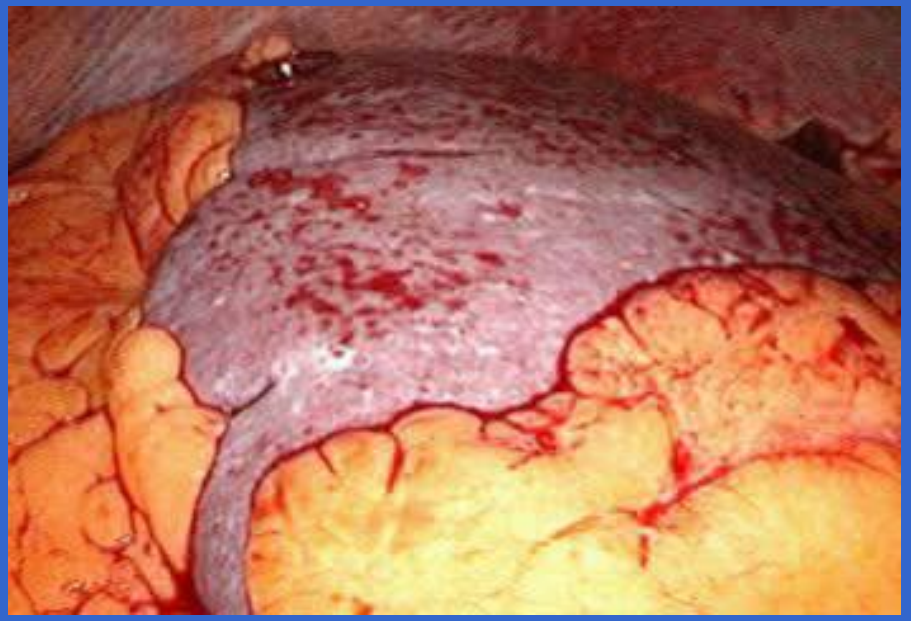
- Only two randomized studies (1 blunt abdominal trauma, 1 penetrating abdominal trauma)
- Role in well selected patients: haemodynamically stable
- Laparostomy may be life saving in unstable patients
- In stable patients with penetrating trauma laparoscopy decreases length of stay and cost
- Both laparoscopy highly effective in evaluating the diaphragm in thoracoabdominal penetrating trauma, especially on the left side. Thoracoscopy to be preferred on the right side

Abdominal blaunt trauma – haemoperitoneum with splenic lesion – conservative laparoscopic treatment versus splenectomy



MESH

SPLENECTOMY



CONCLUSIONS

Available evidence clearly demonstrates the superiority of a laparoscopic approach in various emergency situations, but laparoscopy offers less or unclear benefit in other acute conditions.
Therefore, a policy of laparoscopy for all patients with acute abdominal pain still seems unjustified, although laparoscopy will be the advantage of the majority of patients.

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