EMERGENCIES
APPENDICITIS

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BACKGROUND

Frequent cause of ***acute abdominal pain***
urgent intervention

Untreated, acute appendicitis will progress to perforation with abscess formation and/or diffuse peritonitis

Urgent operative intervention!

ACUTE ABDOMEN
Management Options:

- Emergent (« Surgery Now »)
- Urgent (« Surgery Today »)
- Semi Urgent (« Surgery Tomorrow »)

Elective

:: Local peritonitis with formation of an appendicular mass

:: Abscess formation

:: Gangrene of the appendix

:: Perforation

:: General peritonitis

EAES consensus statement

Laparoscopy for abdominal emergencies

Evidence-based guidelines of the European Association for Endoscopic Surgery

S. Sauerland, F. Agresta, R. Bergamaschi, G. Borzellino, A. Budzynski, G. Champault, A. Fingerhut, A. Isla,M. Johansson, P. Lundorff,

B. Navez, S. Saad, E. A. M. Neugebauer

Surg Endosc (2006) 20: 14–29

Acute appendicitis

Patients with symptoms and diagnostic findings suggestive of acute appendicitis

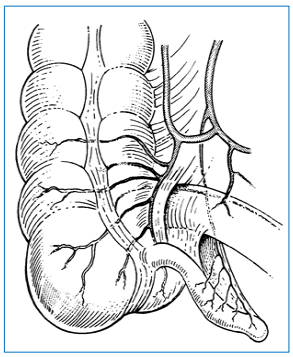
should undergo diagnostic laparoscopy (GoRA) and, if the diagnosis is confirmed,

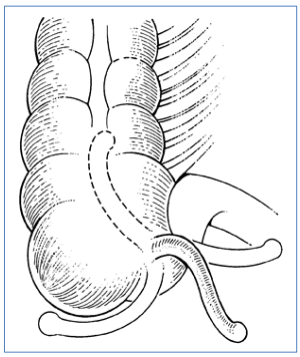
laparoscopic appendectomy (GoRA).

This recommendation also pertains to perforated cases

Retrocaecal appendix

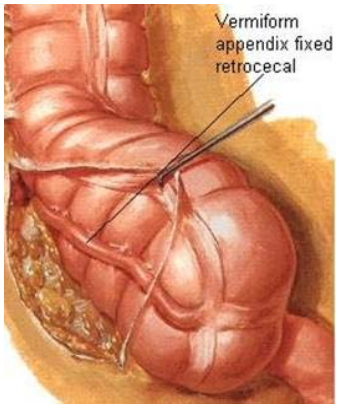
Once the last ileal loop and the taenia coli have been identified, search for the insertion of the caecal appendix





Retrocaecal appendix

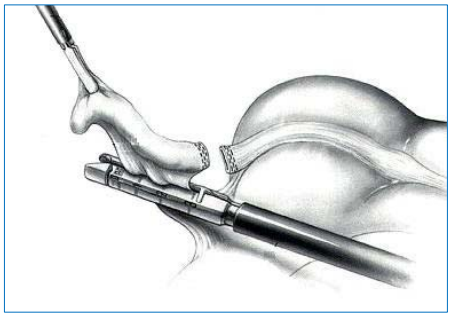
Mobilize the caecum by dividing its retroperitoneal attachment



Inflamed basis

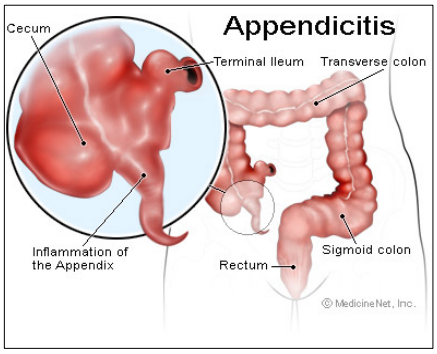
In situations where the base of the appendix is inflamed or necrotic, it may be necessary to resect part of the caecum as well.

In this case, it may be useful to use an endoscopic stapler



Inflamed basis

Endoscopic stapler is used to ensure closure of the caecum



APPENDICULAR PERITONITIS

The E.A.E.S. Clinical Practice Guideline on the Pneumoperitoneum for Laparoscopic Surgery

There are no contraindications to create a pneumoperitoneum when laparoscopic surgery is applicable in cases of peritonitis (grade B)

Presupposing
- -appropriate perioperative measures (e.g. adequate preoperative volume loading)
- -haemodynamic stability

Laparoscopic management of acute peritonitis

CONTRA- INDICATIONS

SEPTIC SHOCK

ASA IV

SEVERE ABDOMINAL DISTENSION

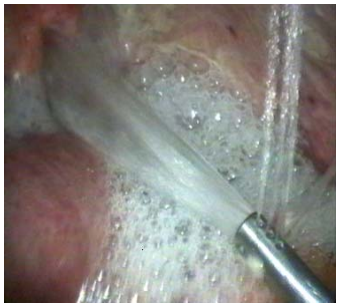
Laparoscopic management of acute peritonitis (Precautions)

IV Ab before PNP

PNP : 8 -12 mmHg

First lavage

Experienced surgical and anesthesiological teams

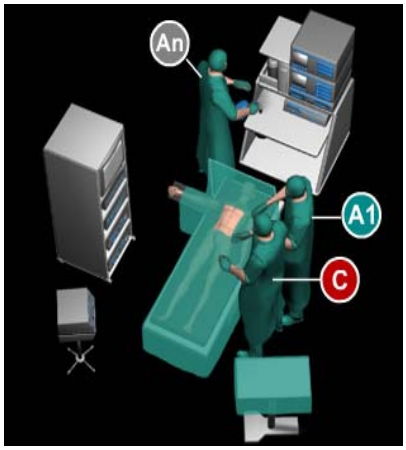


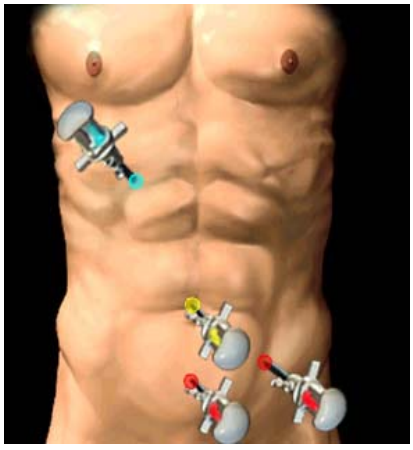
APPENDICULAR PERITONITIS
Advantages of Laparoscopic approach

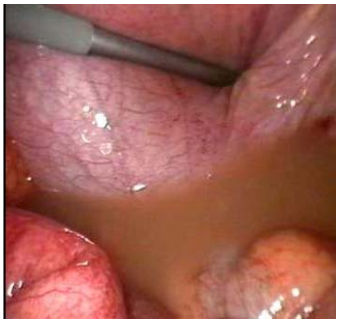
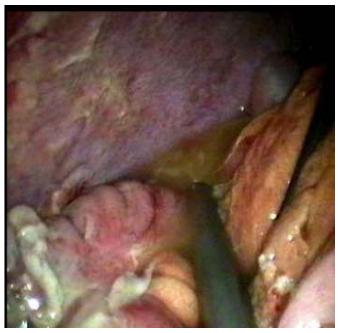
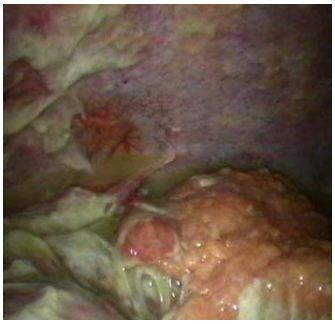
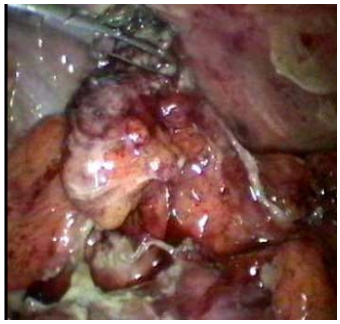
High diagnostic accuracy (98 %)
Correction of the preop clinical severity peritonitis (26%)
Avoidance of a formal laparotomy (79 %)
Low postop intraabdominal abscess rate (2 %)
Low postop wound sepsis rate (1 %)
Mc Burney first ---> Laparoscopy (4 %)

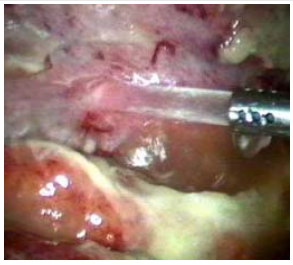
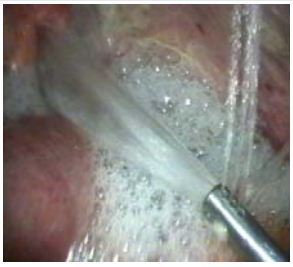
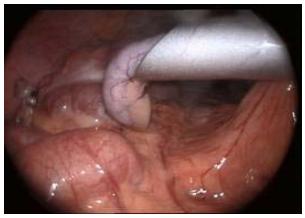
Navez , Surg Laparosc Endosc 2001 , 313-316

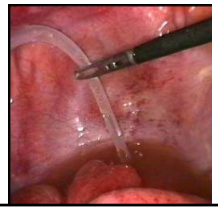
APPENDICULAR PERITONITIS







Appendicular mass

This is caused by inflammation and swelling of the appendix, caecum, omentum and distal part of the terminal ileum

Appendicular mass

Treat conservatively with bowel rest, antibiotics, analgesics and fluids

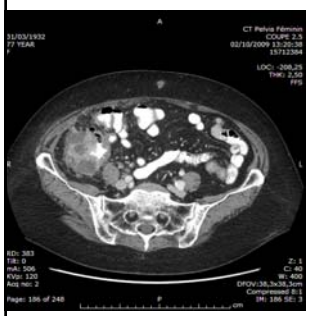
Consider interval appendectomy if symptoms recur

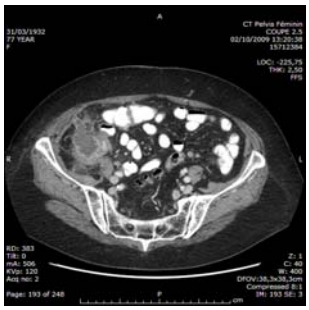
KEY POINTS

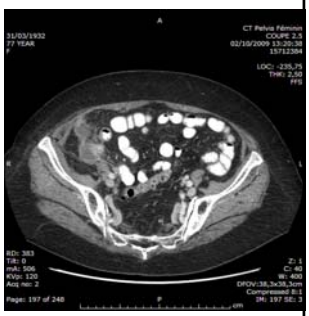
Treat acute, gangrenous or perforated appendix with appendectomy

Treat appendicular mass with medical management

Appendicular abscess





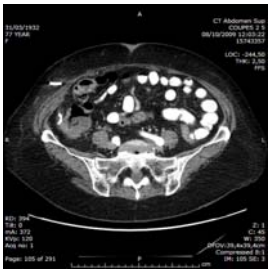


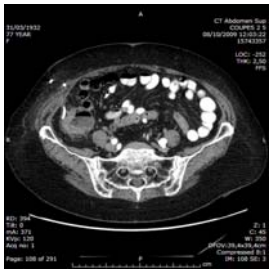
QUIZ

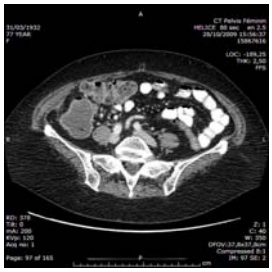
1. Conservative treatment
   (bowel rest, IV antibiotics, delayed colonoscopy))
2. Percutaneous drainage
   (IV antibiotics, delayed colonoscopy)
3. Laparoscopic approach
4. Open approach
5. Ask the supervisor

Appendicular abscess

Percutaneuous drainage







Appendicular abscess

Treat the abscess with percutaneous drainage

Consider delayed colonoscopy

interval appendectomy if symptoms recur

Consider surgical drainage if percutaneous drainage is unsuccessfull or unavailable

How to perform? No consensus

Laparoscopy

Mini laparotomy

Laparotomy with resection

IV ANTIBIOTICS

Amoxicillin-clavulanate	1-2g every 6 to 8h
Ciprofloxacine	400mg every 12h
Metronidazole	500mg every 6 to 8h
Second generation cephalosporin	
Cefuroxime	1-2g every 8h
Metronidazole	500mg every 6 to 8h

Duration of treatment

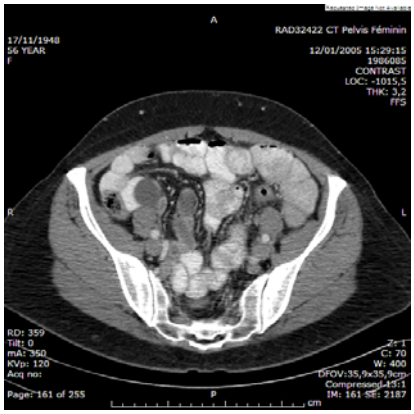
Acute appendicitis: Single pre-operative dose

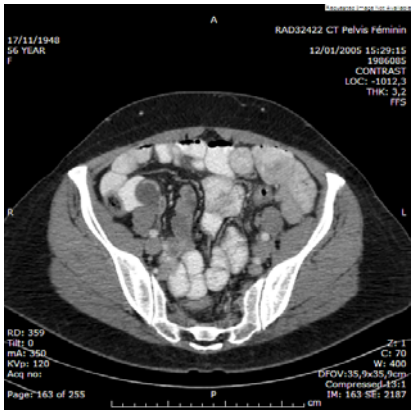
of broad-spectrum antibiotic

Gangrenous appendicitis: 1 to 3 days after surgery

Perforated appendicitis: 3 to 7 days after surgery

Appendicular Mucocele





QUIZ

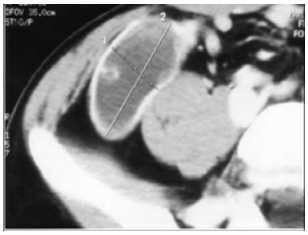
1. Reassure, it's only a cyst
2. Control CT-scanner in 6 months
3. Appendectomy
4. Colonoscopy & appendectomy
5. Ask the supervisor

Appendicular Mucocele

Appendicular mucocele is a rare lesion
(0.2 - 0.3% of surgical appendectomy specimens)
It is a descriptive term denoting an obstructive dilatation of the appendicular lumen by mucinous secretions

Mucinous cystadenoma and cystadenocarcinoma account for 60 - 70%
of all mucoceles

Less common causes:
- retention cyst
- mucosal hyperplasia
- carcinoid
- appendicolith
- endometriosis
- adhesions
- volvulus



Mucinous cystadenoma and cystadenocarcinoma

- high correlation of synchronous or metachronous colorectal adenomas and carcinomas (up to 20%)
- association with mucin-secreting tumors of the ovary
- pseudomyxoma peritonei (avoid iatrogenic rupture of the mucocele)

Treatment

Appendectomy is used for simple mucocele or for cystadenoma

Right hemi-colectomy is recommended for cystadenocarcinoma

BGES
The Belgian Group for Endoscopic Surgery