www.estesonline.org

ESTES
EUROPEAN SOCIETY FOR TRAUMA AND EMERGENCY SURGERY

The Literature

Bellio G, Marrano E. The Vicious Rolling Stones – Part 2. Surgical Pizza. Published on January 9, 2021. Accessed on December 20, 2024. Available at [https://surgicalpizza.org/emergency-surgery/the-vicious-rolling-stones-part-2/].
Bellio G, Marrano E. The Vicious Rolling Stones – Part 1. Surgical Pizza. Published on December 21, 2020. Accessed on December 20, 2024. Available at [https://surgicalpizza.org/emergency-surgery/the-vicious-rolling-stones-part-1].Mayumi T, et al. Tokyo Guidelines 2018: management bundles for acute cholangitis and cholecystitis. J Hepatobiliary Pancreat Sci 2018;25:96-100.
Okamoto K, et al. Tokyo Guidelines 2018: flowchart for the management of acute cholecystitis. J Hepatobiliary Pancreat Sci 2018;25:55-72.

Acute Cholecystitis

Tips & Tricks from ESTES Education in collaboration with the Emergency Surgery section

The Problem

Acute cholecystitis is a common surgical emergency with potentially severe complications if untreated.

The Challenge

Managing patients with varying severities and comorbidities while ensuring timely diagnosis and appropriate intervention.

The Evidence: How to Diagnose it?

The parameters to consider are:
A. Local signs of inflammation etc.
(1) Murphy's sign, (2) RUQ mass/pain/tenderness
B. Systemic signs of inflammation etc.
(1) Fever, (2) elevated CRP, (3) elevated WBC count
C. Imaging findings
Imaging findings characteristic of acute cholecystitis

Suspected diagnosis: one item in A + one item in B
Definite diagnosis: one item in A + one item in B + C

Which is the recommended imaging technique?
- **US**: first-line method; cost-effective, not invasive, and can be made at the bedside;
- **MRI/MRCP**: useful if the abdominal US was not diagnostic (difficul to obtain in emergency settings);
- **Contrast-enhanced CT scan**: useful in case of gangrenous or emphysematous cholecystitis.

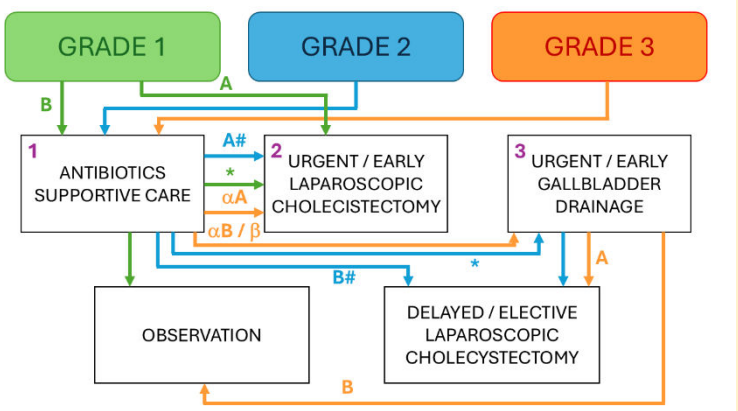
There are three severity grades according to the last guidelines (*Tokyo 2018*):

Grade I (Mild) Acute Cholecystitis
Do not meet the criteria of Grade II - III. Disease in a healthy patient with no organ dysfunction and mild inflammatory changes in the gallbladder.

Grade II (Moderate) Acute Cholecystitis
At least one of the following conditions without signs of organ dysfunction:
– Leukocytosis (>18,000/mm^3);
– Palpable tender mass in the right upper abdominal quadrant;
– Duration of complains >72 h;
– Marked local inflammation (gangrenous cholecystitis, pericholecystic abscess, hepatic abscess, biliary peritonitis, emphysematous cholecystitis).

Grade III (Severe) Acute Cholecystitis
Associated with dysfunction of any one of the following organs/systems:
– Cardiovascular: hypotension requiring treatment with dopamine (≥5 μg/kg/min), or any dose of norepinephrine;
– Neurological: decreased level of consciousness;
– Respiratory: PaO_2/FiO_2 ratio <300;
– Renal: oliguria, creatinine >2 mg/dL;
– Hepatic: PT-INR >1.5;
– Hematological: platelet count <100,000/mm^3.

Tips & Tricks: How to Treat it?



A: Charlson Comorbidity Index ≤ 5 and/or ASA Score ≤ 2 (low risk);
B: Charlson Comorbidity Index ≥ 6 and/or ASA Score ≥ 3 (high risk). In Grade III, CCI ≥ 4 and ASA Score ≥ 3 are high-risk features;
#: Antibiotics & Supportive Care successful;
*: Antibiotics & Supportive Care fail to control inflammation;
α: No Negative Predictive Factors (i.e. total bilirubin ≥2, neurological dysfunction, respiratory dysfunction) and Favorable organ system failure (i.e. cardiovascular or renal, which are rapidly reversible after admission and before surgery);
β: Negative predictive factors and/or No favorable organ system failure;
1: In Grade II & III, it is recommended to perform blood culture before the initiation of administration of antibiotics;
2: In Grade II & III, laparoscopic cholecystectomy is recommended only in Advanced Centers;
3: A bile culture should be performed during gallbladder drainage.

Conclusion

Early diagnosis and multidisciplinary planning are crucial; consider patient-specific factors when deciding between early cholecystectomy, percutaneous drainage, or conservative management.