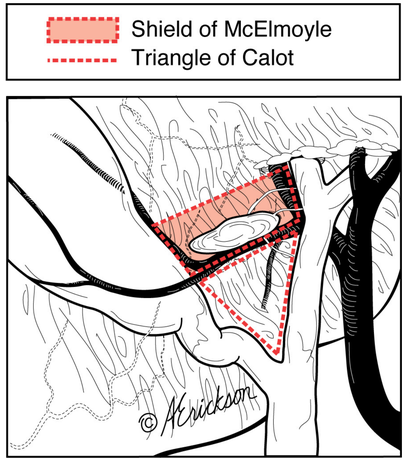
Is The Critical View of Safety Flawed?

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Background

- **Critical View of Safety (CVS)** approach was first described by Strasberg in 1992[1] (term mentioned in 1995[2]) and has been widely adopted by surgeons with goal of performing safe laparoscopic cholecystectomy.
- **SAGES guidelines (2020)** summarized that there was no evidence to support CVS over other techniques
- **Concept of Shield of McElmoyle:**
  - peritoneum that covers the cystic duct, part of body/infundibulum/neck
  - first described in 1954[3] and revisited in 2017[4]
  - no dissection when area is ”stiff, hostile and inflamed”
- **Current recommendation**: if CVS not achieved, subtotal cholecystectomy is recommended (SESAP 18)

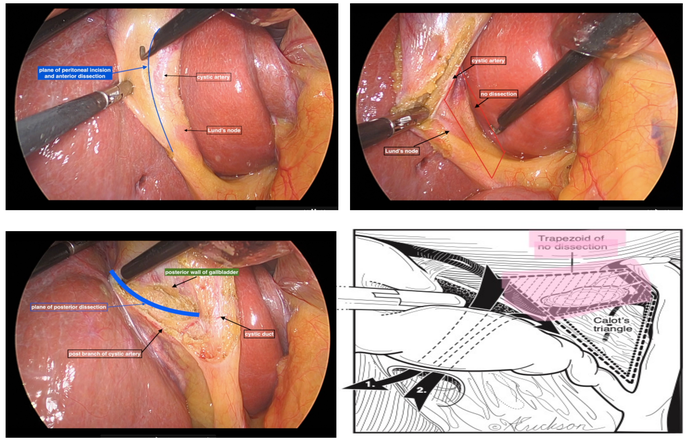


Our depiction of the shield

Flaws in CVS Technique

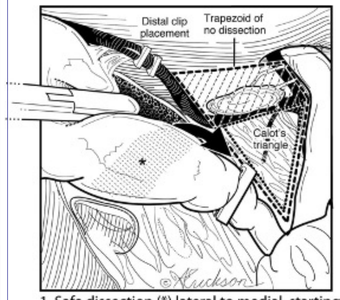
- **Difficulty in applying CVS technique during the following instances**
  - aberrant hepatic ducts
  - significantly inflamed Shield of McElmoyle
  - contracted gallbladder
  - stone impaction or fibrosis at the neck
- **Persistence of surgeon to establish CVS is potentially harmful and can cause vascular and biliary injury**
  - RHA, RHD, CBD can be injured
- **There are cases of false reassurance when “two structures are seen entering the gallbladder”**

Alternative Approach



This dissection approach avoids the **trapezoid of no-dissection.** The artery is clipped and dropped medially, allowing for safe dissection. This principle can also be applied in dome-down approach and cases where the shield of McElmoyle is hostile.

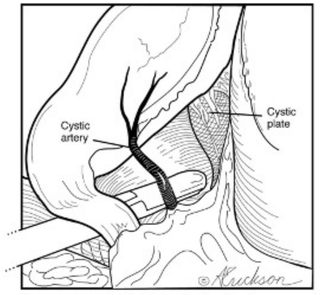
Technical Pearls



1. Safe dissection (*) lateral to medial, starting with the body of the gallbladder, ensures no biliary or vascular injury and allows identification of aberrent anatomy.

Sentinel lymph node of Lund is preserved.

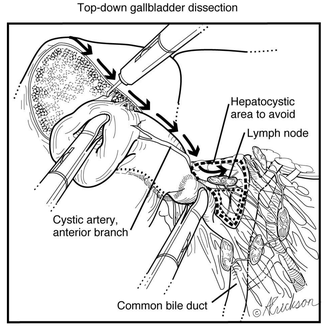
Trapezoid of no dissection = hepatocystic triangle - Calot's triangle.



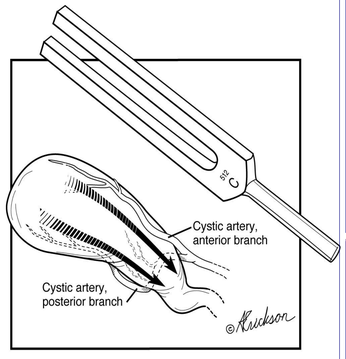
2. SAGES “critical view of safety” with exposure of cystic plate and identification of cystic artery and cystic duct.

Sentinel lymph node of Lund is removed.

This unsafe dissection allows for potential biliary and vascular injuries and damage due to potential aberrant anatomy.



In Top-Down Dissection, The “Trapezoid of No Dissection” Should Also Be Avoided



Cystic artery branches analogy to a tuning fork (diapason); as gallbladder dissection is only within the arms of the tuning fork.

Results

- 1687 Laparoscopic Cholecystectomies using Posterior Infundibular Dissection Approach
  - Age range: 15-90
  - Female: 76% (1283/1687)
  - Non-Elective: 18% (304/1687)
  - Subtotal CCY: 1% (23/1687)
  - Conversion to open: 1 case
  - Cystic stump leak: 4 cases
  - Bile duct injury: 0

Conclusion

- **<u>The anxiety and persistence of surgeon to establish CVS can be harmful, particularly when the hepatocystic area is hostile</u>**
- Aspects of CVS technique can be flawed
- No evidence to support CVS technique over other techniques
- Consider alternate approaches
  - posterior infundibular dissection avoids injury
  - fenestrated ccy in hostile situations
- Always consider anatomic variations to avoid potential injury
- Always consider safety first

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1. Strasberg SM, Sanabria JR, Clavien PA. Complications of laparoscopic cholecystectomy. Can J Surg 1992;35:275–280.
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3. McElmoyle WA. Cholecystectomy: a method for the difficult gall-bladder. Lancet 1954;26:1320e1323.
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5. Iskandar M, Fingerhut A, Ferzli G. Posterior Infundibular Dissection: Safety First in Laparoscopic Cholecystectomy. Surg Endosc 2021; 35:3175-3183