

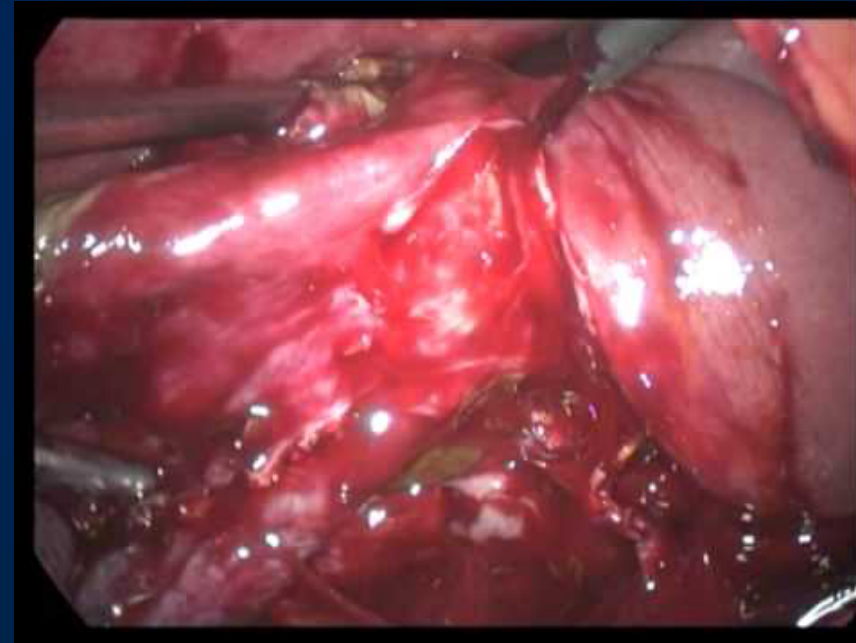
Montefiore
THE UNIVERSITY HOSPITAL

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Albert Einstein College of Medicine
OF YESHIVA UNIVERSITY

Drain and Delay Surgery is Better

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The struggle is real...



*Drain and Delay Surgery is
Better
(When patients present late)*

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No disclosures

Case report

84 yo male admitted to medical service with 5 days of chest pain/epigastric pain

ROS: n/v, anorexia for 3 days

- **PMHx**

- CHF
- PVD
- COPD

- **PSurgHx**

- 2v CABG
- Rt hemicolectomy
- Graham patch for PUD
- Rt Fem pop BPG

- **Meds**

- Lisinopril
- Coreg
- ASA/Plavix (last dose 2 days ago)
- Omeprazole

- **PSHx**

- Ambulates minimally
- Lives in nursing home

Case Report

88 yo female admitted to medical service with 5 days of chest pain/epigastric pain

- **Labs**

- Cr 2.2, K 6.0, HCO₃ 12
- EKG A-V paced, CE negative
- WBC 16K
- LFTs Alk Phos 400, T bili 1.2, D/ 0.2 nl LFTs

- **RUQ US**

- Peri cholecystic fluid
- GB wall thickening 1.5cm, stones
- Normal CBD

Imaging



What would you do?

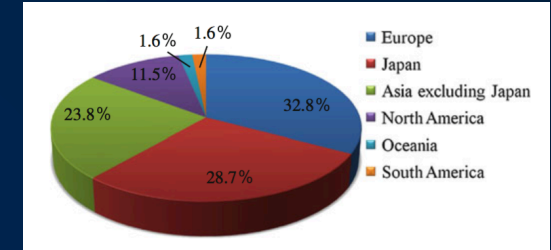
- A. Offer the patient immediate cholecystectomy?*
- B. Optimize, hold AC then offer cholecystectomy?*
- C. Treat with antibiotics with no surgery?*
- D. Treat with antibiotics and offer interval cholecystectomy?*
- E. Treat with percutaneous drainage and no surgery?*
- F. Treat with percutaneous drainage and interval cholecystectomy?*

The 72-hour Rule

- *Perceived Pathologic boundary*
 - *Early edematous versus late chronic fibrotic inflammation*
- *No real consensus in the literature*
 - *Early (24 hours → 7 days)*
- *Earlier data suggest increased conversion rate*
 - *Improved with standard approach to lap chole*
- *Gomes et al Ann Gastroenterol (2012)*
 - *Surgical findings and histopathologic (NS)*
 - *OR time*
 - *Conversion*
 - *Morbidity*
 - *Mortality*

Tokyo Guidelines

- *Developed in 2007 to establish guidelines for treatment of acute cholangitis and cholecystitis*



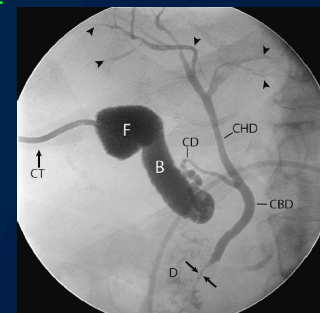
- *Some inherent problems in the guidelines:*
 - *Low diagnostic sensitivity*
 - *Dichotomy is thought and practice*
- *Establish diagnostic criteria and severity assessment criteria through a review of cases of cholangitis and cholecystitis*
 - *Best available evidence*

Tokyo Guidelines

- *Refined in 2013*
- *Based on grade of cholecystitis*
 - *Grade I – inflammatory changes with no organ dysfunction*
 - *Grade II – leukocytosis, a palpable mass and/or local inflammation and no organ dysfunction*
 - *Grade III – organ dysfunction (CV hypotension, neurologic changes, respiratory failure, oliguria, hepatic dysfunction, thrombocytopenia)*

Tokyo Guidelines

- The usefulness of PTGBD as drainage method for high risk patients is endorsed by many case series (level 4)
- No RCT showing superiority to conventional treatment (level 2b)
- Grade III patients should undergo cholecystostomy tube as initial treatment
 - Antibiotics
 - Delayed cholecystectomy



Do not account for overall co-morbidities or conditions

Evidence to support GB Drainage

Kiviniemi et al. Int Surg. 1998;83:299-302

Sugiyama et al. World J Surg. 1998;22:459-63

*Chopra et al. AJR Am J Roentgenol.
2001;176:1025-31*

Akhan et al. Euro J Radiol. 2002;42:229-36

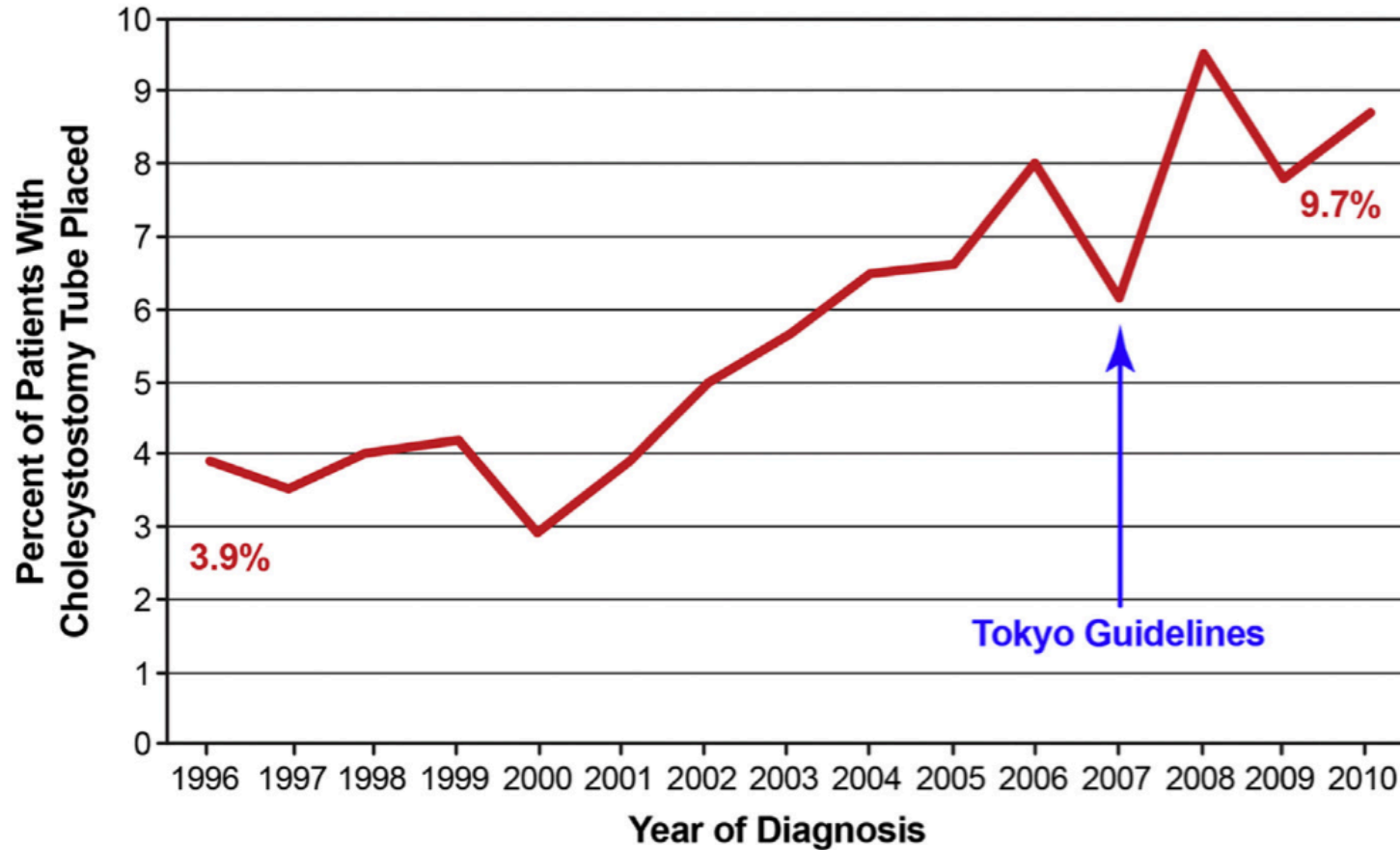
Donald et al. Gut. 1994;35:692-5

Hultman et al. Am Surg. 1996;62:263-9

Melin et al. Br J Surg. 1995;82:1274-7

Davis et al. Arch Surg. 1999;134:727-31

Tokyo Guidelines



Elderly and Emergency Cholecystectomy

Prospective study looking patient frailty and response to emergency cholecystectomy

- Cholecystitis graded by revised Tokyo guidelines (2013)*
- Frailty score assessed by the Geriatric Assessment (GA)*
- Deficits in 2 or more of the GA domains indicated increase risk. Set the definition of frailty.*

Geriatric Assessment

TEST		NUMBER OF ITEMS	RANGE	CUT-OFF SCORE
ADL	Functional status	6	0-6	<5
IADL		8	0-8	≤7
BOMC Test	Cognitive assessment	6	0-28	>10
CDT-test		7	0-7	>3
Charlson Comorbidity Scale	Comorbidity	19	0-37	>3
Geriatric Depression Scale	Depression	15	0-15	>5
MNA	Nutritional assessment	18	0-30	<24
Polypharmacy	Polypharmacy	1	0-∞	≥5 drugs/day

Study population

- *Patients > 65 year old*
 - 66 elective pts
 - 60 emergency pts
- *% of successful Lap cholecystectomy*
 - 86% elective pts
 - 70% emergency pts
- *Grades of cholecystitis*
 - Grade I 3.3%
 - Grade II 65%
 - Grade III 31.7%
- *Frailty frequency*
 - Elective pts 51.5%
 - Emergency pts 76.7%

Patient outcomes

- **Discharge**

- Elective pts, 100% to home
- Emergency pts, 8.3% to SNF

- **Mortality**

- Elective pts, none
- Emergency pts, 5%

****Frail status was a significant independent risk factor for post op complications in emergency patients**

- **30-Day Morbidity**

- Elective pts 10.6%
- Emergency pts 36.7%

- **LOS**

- Elective pts
 - Frail group had NS longer LOS (5.6 v 4 days)
- Emergency pts
 - Sig longer LOS in frail pts (10.3 v 6 days, $P=0.03$)



- *Prospective study comparing ELC to delayed LC after PTGBD*
 - *150 patients*
 - *Grade II acute cholecystitis (Tokyo guidelines)*
 - *Presented more than 72 hours after onset of symptoms*
 - *DLC performed > 6 weeks after PTGBD*
 - *Average ~ 50 yo in both groups*
 - *All ASA I or II*

- Sepsis resolved in both study populations
- Conversion to open
 - ELC 24%, DLC 2.7% ($P < 0.001$)
- Operative times
 - ELC 87 ± 33 min, DLC 38 ± 8 min ($P < 0.001$)
- Intraoperative blood loss
 - ELC 41 ± 51 mL, DLC 26 ± 24 mL ($P < 0.008$)
- Postop LOS
 - ELC 51.7 ± 49 hrs, DLC 10.7 ± 5.7 hrs ($P < 0.001$)
- Postop complications
 - ELC 26.7%, DLC 2.7% ($P < 0.001$)

	ELC (n = 75)	PTGBD ^a (n = 75)	P
Conversion	18 (24.0 %)	2 (2.7 %)	<0.001*
Conversion due to difficult dissection	14 (18.7 %)	1 (1.3 %)	<0.001*
Conversion due to bleeding	4 (5.3 %)	1 (1.3 %)	0.367
Intraoperative bleeding (ml)	41.73 ± 51.09	26.33 ± 23.86	0.008*
Operative time (min)	87.8 ± 33.06	38.09 ± 8.23	<0.001*
Subtotal cholecystectomy	13 (17.3 %)	0 (0.0 %)	<0.001*
Postoperative hospital stay (h)	51.71 ± 49.39	10.76 ± 5.75	<0.001*
Combined PTGBD and postoperative complications	20 (26.7 %)	9 (12.0 %)	0.023*
Postoperative complications	20 (26.7 %)	2 (2.7 %)	<0.001*
Bleeding	0 (0 %)	0 (0 %)	—
Bile duct injury (leak)	8 (10.7 %)	0 (0.0 %)	0.006*
Subhepatic collection	5 (6.7 %)	0 (0.0 %)	0.058
Wound infection	7 (9.3 %)	2 (2.7 %)	0.166
Bowel injury	2 (2.7 %)	0 (0.0 %)	0.497
Ileus	3 (4.0 %)	0 (0.0 %)	0.245
Choledocholithiasis	1 (1.3 %)	0 (0.0 %)	1.000

Case report

88 yo female admitted to medical service with 5 days of chest pain/epigastric pain

ROS: n/v, anorexia for 3 days

- **PMHx**

- CHF
- PVD
- ESRD on HD
- COPD

- **PSurgHx**

- 4v CABG
- Rt hemicolectomy
- Graham patch for PUD
- Rt Fem pop BPG

- **Meds**

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- Coreg
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- **PSHx**

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Case Report

88 yo female admitted to medical service with 5 days of chest pain/epigastric pain

- **Labs**

- *Cr 7, K 6.3, HCO3 12*
- *LFTs Alk Phos 400, T bili 0.9, nl LFTs*
- *WBC 16K*
- *EKG A-V paced, CE negative*
- *CXR small RLL consolidation*

- **RUQ US**

- *Pericholecystic fluid*
- *GB wall thickening 1.5cm, stones*

What would you do?

- A. Offer the patient immediate cholecystectomy?*
- B. Optimize, hold AC then offer cholecystectomy?*
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Thank you!