MRCP use in the evaluation of Choledocholithiasis: A Case Report

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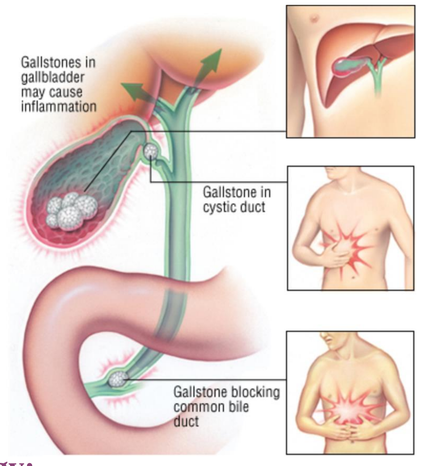
LIFE CHANGING MEDICINE

Introduction

Definitions:

- Cholelithiasis: presence of gallstones within the gallbladder.
  - A stone may pass into the cystic duct → gallbladder contracts → intermittent RUQ pain
- Cholecystitis: a gallstone obstructing the cystic duct → gallbladder distension, inflammation and ischemia.
  - Prolonged inflammation can lead to bacterial translocation → IV antibiotics (+) cholecystectomy
- Choledocholithiasis: gallstone obstructing the common bile duct → acute ascending cholangitis.
- Acute ascending cholangitis: a medical emergency associated with high morbidity and mortality.



Epidemiology:

- According to NHANES III, over 20 million Americans are estimated to have gallbladder disease
- The incidence and prevalence of choledocholithiasis is unknown, but estimated to be 5-20%
- Incidence increases with age

Case Report

A 29 year old female presented to the emergency department with post prandial epigastric and right upper quadrant abdominal pain for two weeks that acutely worsened overnight.

DAY 1: On admission, the patient's liver enzymes were elevated and her gallbladder ultrasound revealed cholelithiasis with no biliary duct dilation.

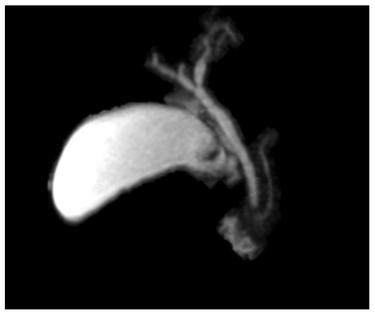
DAY 2: MRCP was performed and there was no evidence of biliary duct dilatation or choledocholithiasis. HIDA scan revealed significantly delayed uptake into the biliary system which was concerning for a high-grade biliary obstruction.

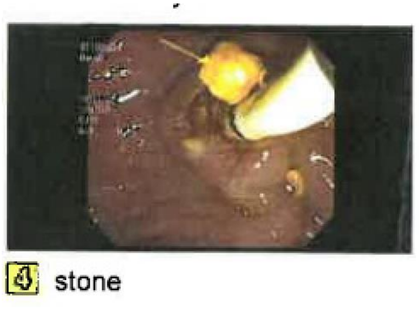
DAY 3-4: Patient's labs were followed which revealed continued transaminitis and hyperbilirubinemia. Hepatitis panel was negative.

DAY 5: Repeat MRCP still did not show any biliary duct dilation. ERCP with sphincterotomy was performed and five yellow pigmented gallstones were removed.

DAY 6: Liver enzymes and bilirubin improved.

DAY 7: Laparoscopic cholecystectomy and discharge.





Date	AST	ALT	Total bili
12/04	146	95	0.8
12/06	244	551	3.4
12/07	172	455	2.5
12/08	107	315	2.9
12/09	93	266	3.5
12/10	185	285	2.5
12/11 (day of ERCP)	270	375	2.6
12/12	215	422	1.3
12/13 (day of cholecystectomy)	133	332	1.1

Discussion

- ERCP is considered the gold standard for evaluation of choledocholithiasis and can be also a therapeutic test.
- MRCP is s non-invasive option that can be used to evaluate the biliary tree
- One analysis and review found that 82% of patients who had MRCP performed first, underwent ERCP or lap cholecystectomy.
- The sensitivity of MRCP in diagnosing choledocholithiasis is 90% and specificity is 88%
- EUS is another minimally invasive procedure that can be considered when MRCP is negative
- The question that requires further research is whether MRCP is a useful test for patient's in the evaluation of choledocholithiasis. However, even with negative MRCP, it is important to consider ERCP testing.

References

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