Diagnostic accuracy of EUS compared with MRCP in detecting choledocholithiasis: a meta-analysis of diagnostic test accuracy in head-to-head studies

Summary: While ERCP remains the most sensitive and specific diagnostic modality in choledocholithiasis, while considering less invasive alternative modalities, EUS is notably more sensitive than MRCP (.97 vs .87). Thus, implementing EUS in clinical practice as the initial diagnostic modality instead of MRCP could markedly decrease the amount of false negatives.

SOAP #1

Identifying Data:

Full name: Ms. HCP

Address: Jamaica, NY

MRN#: [redacted]

Date & Time: 1/17/24 at 1pm

Location: QHC ER

Religion: Unspecified

Source of Information: Self

Reliability: Reliable

S:

37YOF w/ PMH of CSDx2 and b/l tubal ligation presents with RLQ abdominal pain x1 day. Reports pain is constant and 4/10 in severity without radiation or provoking/alleviating factors. Endorses associated anorexia, nausea, vomiting x2 yesterday. Denies constipation, diarrhea, bloating, dyspepsia, fever. Denies dysuria, suprapubic tenderness, vaginal bleeding or discharge. Last oral intake 1800 yesterday. LMP 12/29/23.

Home Medications:

None

O:

Vitals:

BP: 104/68

Temp: 97.7F

HR: 64bpm

Resp: 64bpm

SpO2: 100% RA

BMI: 32.1

Recent Labs:

WBC 16.47k/mcL
HgBL 12.6 g/dL
HCT: 39.7%

PE:
Gen: A&Ox3, appears slightly uncomfortable lying supine in bed
Neuro: Following commands appropriately, no focal deficits, moving all extremities
HEENT: Atraumatic, normocephalic
Resp: Non-labored, chest expansion symmetrical, CTA B/L
CV: Normal S1/S2, RRR
Abd: Soft, minimally distended at RLQ. RLQ tenderness without guarding or rebound. Murphy Sign negative.
GU: No flank tenderness

Imaging:
CT Abdomen/Pelvis with IV Contrast Final Impression: Acute uncomplicated appendicitis

A:
37YOF presents with RLQ pain consistent with uncomplicated acute appendicitis confirmed on CT.

P:
Admit to general surgery
Plan for OR
Type and Screen, Urine HcG
NPO, IVF
Ciprofloxacin/Flagyl IV
Pain and Nausea control
DVT ppx with subcutaneous heparin and SCDs

SOAP #2
Identifying Info:
Full name: Ms. SM
Address: Jamaica, NY
MRN#: [redacted]
Date & Time: 1/21/24 at 8:15am
Location: QHC B4W
Religion: Unspecified

Source of Information: Self
Reliability: Reliable

S:
71YOF w/ PMH of breast cancer s/p R radical mastectomy (2009) and h/o recurrent RUE cellulitis, HD1 admitted for RUE cellulitis. Seen and examined at bedside on rounds with Dr. Valor and the surgery team. Pt reports erythema, warmth, and edema of RUE continues, but have improved since admission. Rates pain 2/10 in severity. Denies chills, sweats, N/V, fever, anorexia.

O:
Vitals
BP: 133/71
HR: 97bpm
Resp: 18
Temp: 98.4F
SpO2: 96% RA
BMI: 28.67

Recent Labs:
WBC: 25.79k/mcL
HgB: 11.4g/dL
Hct: 35.3%
Platelet Count: 207k/mcL

Medications:
ampicillin-sulbactam, 3 g, IV Infusion, Q6H
anastrozole, 1 mg, Oral, Daily
enoxaparin, 40 mg, Subcutaneous, Daily
pravastatin, 10 mg, Oral, Daily
vancomycin, 1,000 mg, IV Infusion, Q12H
ibuprofen (CALDOLOR) 800 mg in sodium chloride 0.9 % 250 mL IVPB

Physical Exam:
Gen: A&Ox3, no apparent distress, appears comfortable in bed
Neuro: Normal gait without ataxia
CVS: Normal S1/S2, RRR
Lungs: Chest expansion symmetrical, CTA B/L.

UE: Right arm with circumferential redness and swelling beginning ~4cm above the ACF and expanding distally to wrist. It is more distal to the line demarcated with a skin marker yesterday.
LE: Soft calves with SCDs on. No tenderness or swelling.

Assessment:
71YOF with h/o recurrent RUE extremity cellulitis s/p R radical mastectomy admitted with right arm cellulitis. No new complaints at this time.

Plan:
Continue Unasyn and Vanco IV
Compression and elevation of RUE
Continue Lovenox and SCDs, encourage OOB to chair/early ambulation for DVT ppx

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SOAP#3
Identifying Data:
Full name: Ms. SI
Address: Queens Village, NY
MRN#: [redacted]
Date & Time: 1/19/24 at 2pm
Location: QHC Surgery Subspecialty Clinic
Religion: Unspecified
Source of Information: Self
Reliability: Reliable

S:
63YOF w/ PMH chronic b/l leg swelling with edema and LLE ulcer x3 months presents to clinic today for unna boot change. Patient states she is keeping the unna boot clean, ambulating often, and elevating the leg at least once daily. Reports mild pain surrounding the ulcer, but less than last week. Denies new ulcers or skin changes.

O:
Vitals:
BP: 143/68
HR: 84bpm
RR: 16
Temp: 98.1F
SpO2: 96% RA
BMI: 28.48kg

Home Medications:
Vitamin D2 50000units PO
Ferrous Sulfate 325mg PO

PE:
Gen: A&Ox3, no apparent distress, appears comfortable sitting upright in chair
Neuro: Following commands appropriately
CVS: Normal S1 and S2, RRR
Lungs: Chest expansion symmetrical, CTA B/L
LE:

Left: 2.5cmx2cm superficial LEFT leg ulcer with pink tissue noted on anterior aspect of shin. Circumferential purple discoloration, swelling, thickened skin, edema noted beginning ~6cm below the knee. No bleeding or discharge, no calf tenderness.
Right: Circumferential purple discoloration, swelling, thickened skin, edema noted beginning ~10cm below the knee. No bleeding or discharge, no calf tenderness.

A:
63YOF with LLE ulcer secondary to chronic venous insufficiency, unna boot applied. No new complaints at this time.

P:
Keep unna boot dry and clean
Continue to ambulate and elevate the lower extremity daily
Return to clinic in 1 week for unna boot change

SOAP#4
Identifying data:
Full name: Mr. SM
Address: Hollis, NY
MRN#: [redacted]
Date & Time: 1/19/24 at 9am
Location: QHC Surgery Subspecialty Clinic
Religion: Unspecified
Source of Information: Self
Reliability: Reliable

S:

21YOM presents today to general surgery clinic for routine f/u POD15 lap chole (1/3/2024) complicated by emesis, abdominal pain and increasing LFTs that required ERCP (1/12/2024) to remove one stone in the CBD. Patient states he is tolerating unrestricted diet, voiding freely, and passing gas/BM. He denies fever, abdominal pain or distension, N/V.

O:

Vitals:

BP: 130/79
HR: 55bpm
RR: 18bpm
SpO2: 99%RA
Temp: 97.9F
SpO2: 99 RA
BMI: 27.2

Medications:

Denies

PE:

Gen: A&Ox3, no apparent distress, appears comfortable sitting upright in chair
Neuro: Following commands appropriately, normal gait without ataxia
CVS: Normal S1/S2, RRR
Lungs: Chest expansion symmetrical, CTA B/L.
Abdomen: Non-tender, non distended, soft abdomen without guarding or rebound. Three surgical incisions closed with dermabond without erythema, discharge, or hypertrophic scarring appreciated.

A:

21YOM s/p lap chole 1/3/2024, ERCP 1/12/2024, with no complaints at this time.

P:

Shower daily and keep incision sites clean and dry
No lifting of weight greater than 10lbs
RTC in 3 weeks

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1. Ibuprofen IV (Caldolor)
    - Drug Class
        a. Nonopioid Analgesic, NSAID

- Mechanism of Action
    a. Reversibly inhibits COX-1 and 2 enzymes, which results in decreased formation of prostaglandin precursors; has antipyretic, analgesic, and anti-inflammatory properties
- Indications
    a. Management of mild to moderate pain and management of moderate to severe pain as an adjunct to opioid analgesics in adults and pediatric patients ≥3 months of age; reduction of fever in adults and pediatric patients ≥3 months of age.
- Contraindications
    a. Hypersensitivity to ibuprofen (eg, anaphylactic reactions, serious skin reactions), aspirin, or any component of the formulation
    b. Use in the setting of coronary artery bypass graft (CABG) surgery
- Adverse Reactions
    a. CV: acute MI, cerebrovascular accident, CV death. New-onset hypertension or exacerbation of hypertension. New-onset or exacerbation of heart failure.
    b. GI: inflammation, hemorrhage, ulcer, perforation, mild transaminase elevations
    c. Heme: prolonged bleeding time, increased risk for hemorrhage, drug-induced hemolytic anemia, agranulocytosis, aplastic anemia, neutropenia, thrombocytopenia,
    d. Immune: Hypersensitivity rxns, DRESS, Stevens-Johnson syndrome (SJS)
    e. Renal: Hemodynamically-mediated AKI, interstitial nephritis, renal papillary necrosis
- Starting and Maximal Doses
    a. Pain → 200 to 400 mg every 4 to 6 hours as needed or 600 to 800 mg every 6 to 8 hours as needed
    b. Acutely, maximum dose: 3.2 g/day. For long-term use, maximum dose: 2.4 g/day

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2. Piperacillin/Tazobactam (Zosyn)

- Drug Class
    - Penicillin beta-lactamase inhibitor
- Mechanism of Action
    - Inhibits bacterial cell wall synthesis by binding penicillin binding proteins, which inhibits the final transpeptidation step of peptidoglycan synthesis in the bacterial cell wall, resulting in lysis

- Indications
    - Pseudomonas infections
    - Mild to severe bacterial infections
    - Bite wound infection, blood stream infection, diabetic foot infection, intra-abdominal infection, malignant external otitis, neutropenic fever, PNA, sepsis/shock, skin and soft tissue infection, complicated UTI
- Contraindications
    - Hypersensitivity to penicillins, cephalosporins, or beta-lactamase inhibitors
- Adverse Reactions
    - Nervous system: delirium, encephalopathy, intracranial hemorrhage
    - Renal: AKI, interstitial nephritis, nephrotoxicity
    - Respiratory: eosinophilic pneumonitis
    - Misc: drug fever
- Monitoring
    - BUN/creatinine, serum and hematologic parameters w/ prolonged use
    - Electrolytes, LFTs, urinalysis
    - Signs of bleeding
    - Anaphylaxis during first dose
    - If skin rash appears, monitor closely for CNS effects
- Starting and Maximal Dose
    - Mild to moderate infection: 3.375g q6 hours
    - Severe infection: 4.5 g q6-8 hours
    - Pseudomonas infection: 4.5 g q6 hours
    - Max dose: 18g/day

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3. Vancomycin

- Drug Class
    - Glycopeptide antibiotic
- Mechanism of Action
    - Inhibits bacterial wall synthesis by blocking glycopeptide polymerization through binding tightly to D-alanyl-D-alanine portion of cell wall precursor
- Indications
    - C. difficile infection (PO)
    - Endocarditis
    - Enterocolitis by staph aureus including MRSA (PO)
    - Staphylococcal infections: blood stream, bone, lower respiratory, skin and skin structure infections
    - Empiric therapy of infections when MRSA is suspected

- Contraindications
    - Hypersensitivity to vancomycin
- Adverse Reactions
    - Non-immune mediated anaphylactoid infusion related reaction (Red Man Syndrome)
    - Anaphylaxis
- Monitoring
    - Therapeutic monitoring via trough monitoring or area under the curve (AUC) guided dosing (target trough 15-20 mg/L)
- Starting and Maximal Dose
    - PO: 125-500 mg 4x/day
    - IV: 15-20 mg/kg/dose every 8-12 hours
    - Loading dose of 20-35 mg/kg for seriously ill patients with documented or suspected MRSA
    - Max dose dictated by trough levels: 15-25 mg/L

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4. Enoxaparin (Lovenox)

- Drug Class
    - Anticoagulant
- Mechanism of Action
    - Binds to antithrombin, forming a complex which irreversibly inactivates clotting factors Xa and IIa, to a lesser extent than heparin
- Indications
    - Venous thromboembolism prophylaxis and treatment
    - Superficial vein thrombosis, acutely symptomatic
    - Mechanical heart valve
    - Ischemic heart disease
    - Hemodialysis
    - Frostbite
- Contraindications
    - Known hypersensitivity to enoxaparin, heparin, pork products
    - History of immune mediated heparin induced thrombocytopenia (in the past 100 days or in the presence of circulating antibodies)
    - Active major bleeding
- Adverse Reactions
    - Spinal or epidural hematomas
    - Hyperkalemia (via suppression of aldosterone production)
    - Heme: Major bleeding, Thrombocytopenia, Anemia

    - Injection site reaction
- Monitoring
    - Clinical monitoring for signs/symptoms of bleeding, neurological impairment
    - Anti-factor Xa level monitoring (PTT)
- Starting and Maximal Dose
    - 1 mg/kg every 12 hours or 1.5 mg/kg once every 24 hours

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5. Morphine

- Drug Class
    - Analgesic opioid agonist
- MOA
    - Binds to opioid receptors in the CNS, which causes inhibition of ascending pain pathways and produces generalized CNS depression
- Indications
    - Acute coronary syndrome/ischemic chest pain
    - Acute pain in opioid naive patients
    - Acute pain in patients on chronic opioid therapy for pain
    - Acute postoperative pain
    - Acute vaso-occlusive pain in sickle cell disease
    - Chronic cancer pain
    - Dyspnea in palliative care patients
    - Neuraxial analgesia
- Contraindications
    - Hypersensitivity to morphine or any component of the formulation; significant respiratory depression
    - Acute or severe bronchial asthma in an unmonitored setting or in the absence of resuscitative equipment
    - Concurrent use of monoamine oxidase inhibitors (MAOIs) or use of MAOIs within the last 14 days
    - GI obstruction, including paralytic ileus (known or suspected).
    - Significant drug interactions exist, consult drug interactions database for more information
- Adverse Rxns
    - CNS depression
    - Hypotension
    - Life-threatening respiratory depression
    - Addiction, abuse, misuse
- Monitoring

    - Pain control
    - Respiratory and mental status
    - Blood pressure
    - Signs of misuse/abuse/addiction
    - Hypogonadism or hypoadrenalism
- Starting dose/Max dose
    - Initial pain control IV: 1-3 mg as frequently as 5 minutes
    - Ongoing pain control IV: 1-4 mg every 1-4 hours as needed, may give up to 10 gm every 2-4 hours as needed (PCA)
