Myth:
Sterile gloves are needed when suturing all lacerations

Truth:
Clean gloves work just as well as sterile gloves when suturing low-risk lacerations

Myth:
Epinephrine should never be used when performing a digital block
Epinephrine in Digital Blocks: Refuting Dogma

**Denkler K. Plast Reconstr Surg 2001**
- Literature review 1880 - 2000
- 48 cases digital necrosis, 21 with epinephrine
- 17 cases concentration unknown
- Manual dilutions
- Most with cocaine or procaine
- No cases after 1948

Do Not Use Epinephrine in Digital Blocks: Myth or Truth? A Review of 1111 Cases

**Chowdry S, et al. Plast Reconstr Surg 2010**
- 7 year review, one hand surgeon
- 1,111 digital and hand surgery cases
- 611 patients 1% lido + epi 1:100,000
- Average 4.3cc (range 0.5 - 10cc)
- No gangrene, nerve injury, or delayed wound healing

Myth:
Kernig’s and Brudzinski’s signs are helpful in the diagnosis of meningitis

Multicenter Prospective Study of 3,110 Consecutive Cases of Elective Epinephrine Use in the Fingers and Hand

- 9 hand surgeons in 6 cities, 2002-2004
- 1,340 fingers and 1,770 hands
- Average age 53 yrs (range 1 day - 93 yrs)
- Epi concentration ≤ 1:100,000
- No cases of infarction or skin necrosis
- No cases required phentolamine
- “Occasionally bluish” -- good flow in 2-3°

Truth:
Epinephrine from local anesthetics is extremely unlikely to lead to important digital ischemia

Diagnostic Accuracy of Kernig’s Sign, Brudzinski’s Sign, and Nuchal Rigidity in Adults with Suspected Meningitis

- Prospective Yale ED study
- 297 adults, LP for suspected meningitis
- Meningitis if >5 WBC/hpf

<table>
<thead>
<tr>
<th></th>
<th>Sensitivity</th>
<th>Specificity</th>
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<tbody>
<tr>
<td>Kernig’s</td>
<td>5%</td>
<td>95%</td>
</tr>
<tr>
<td>Brudzinski’s</td>
<td>5%</td>
<td>95%</td>
</tr>
<tr>
<td>Nuchal rigidity</td>
<td>30%</td>
<td>68%</td>
</tr>
</tbody>
</table>
Diagnostic Accuracy of Kernig’s Sign, Brudzinski’s Sign, and Nuchal Rigidity in Adults with Suspected Meningitis

**Moderate inflammation (>100 WBC/hpf)**
- 29 patients
- Sensitivity 9% K, 9% B, 50% NR

**Severe inflammation (>1000 WBC/hpf)**
- 4 patients
- Sensitivity 0% K, 25% B, 100% NR

Truth:
Kernig’s and Brudzinski’s signs are very insensitive tests

Myth:
Atropine must always be given when using ketamine for procedural sedation in children

Adjunctive Atropine is Unnecessary During Ketamine Sedation in Children

- Prospective observational study
- 1090 sedations, 947 (87%) no atropine
- 100 mm visual analog scale for salivation
- 92% had no salivation (rating of 0 mm)
- 1.3% (12) had rating > 50 mm
- Intervention in 4.2% (usually suctioning)
- 1 patient (0.11%) brief desaturation from hypersalivation (95% CI 0.003% - 0.6%)

Truth:
Hypersalivation with ketamine is infrequent and can be managed with suctioning or atropine

Myth:
Mist therapy is a useful, first-line treatment for children with croup in the ED

Atropine is not routinely required when using ketamine for sedation in children
A RCT of Mist in the Acute Treatment of Moderate Croup


- RCT, 71 kids, 3 mos - 6 y/o
- Moderate croup (croup score 2-7)
- Mist stick (humidified O₂) vs none
- All given dexamethasone
- Racemic epi or budesonide per MD
- Croup score, O₂ sats, HR, RR
- No Δ in any outcome over 2 hours

Controlled Delivery of High vs Low Humidity vs Mist Therapy for Croup in EDs: a RCT


- RCT, single blind, 140 kids, 3 mos - 10 y/o
- Moderate to severe croup (croup score ≥ 2)
- Treatment for 30 minutes:
  - Blow-by mist (standard)
  - Controlled delivery 40% humidity
  - 100% humidity with 6.2 micron particles
- No Δ in any outcome at 30 or 60 minutes
- Scores, O₂ sats, HR, RR, steroids, epi, admit

Truth:
Mist does not improve outcomes in children seen in the ED with moderate to severe croup

Myth:
Commonly-used antibiotics will decrease the effectiveness of oral contraceptives

Oral Contraceptive Efficacy and Antibiotic Interaction: A Myth Debunked


- Literature review 1966-2004
- Ethinyl estradiol and progestin
- High variability in absorption and metabolism
- 1970s - liver enzyme induction with rifampin
- Reports of pregnancies in OCP + rifampin
- Pharmacokinetic studies of common abx do not support OCP interaction

Oral Contraceptive Efficacy and Antibiotic Interaction: A Myth Debunked


- No significant decrease in plasma levels:
  - Ampicillin
  - Ciprofloxacin
  - Tetracycline
  - Doxycycline
  - Clarithromycin
  - Ofloxacin
  - Metronidazole
  - Roxithromycin
- Case reports of pregnancy after abx
- Compliance
  - Vomiting/Diarrhea
- Recall bias
  - No denominator
- No control group
  - Coincidence
- OCP failure - 36% no predisposing factors
Truth:
Except for TB medications, commonly used antibiotics probably do not decrease the effectiveness of oral contraceptives

Myth:
Lubricants interfere with Pap and STD testing, so they should not be used for speculum exams

Using Lubricant for Speculum Insertion
- Commentary regarding speculum exam
- 2007 ACOG manual for women’s care advises to use water only for lubrication
- Multiple large RCTs -- no Δ in Pap interpretation or unsatisfactory rates
- Unsatisfactory rate increased if 1-1.5 cm gel ribbon placed directly on cervical os

Using Lubricant for Speculum Insertion
- RCT of > 5,500 patients
- No Δ Chlamydia trachomatis detection
- In vitro studies:
  - No Δ cytologic diagnosis of BV or yeast
  - No Δ Chlamydia assay or GC culture
- After bimanual exam with 3g lubricant = 89% with Chlamydia still tested positive

The Role of Gel Application in Pain During Speculum Exam and Effect on Pap Smear
- RCT of 1,580 patients
- Water-based gel vs. dry speculum
- Used pain scale and blinded cytopathologists
- Significantly less pain with gel
- No Δ in unsatisfactory Pap (1.1% v. 1.4%)

Truth:
Lubrication of the external surface of the speculum does not impair Pap and STD testing
Myth:
Pelvic ultrasounds will be inadequate unless the patient has a full bladder

Filling of the Bladder for Pelvic Sonograms: An Ancient Form of Torture
Benacerraf B, J Ultrasound Med, March 2003

- Editor-in-Chief commentary
- Transvaginal high-frequency U/S
- Filling bladder no longer necessary
- TV detects 84%, empty bladder detects 15%
- Only 1.5% full-bladder helpful
- Overfilling can give false pos and neg
- More uncomfortable

Myth:
Response to GI cocktail and nitroglycerin can help with the diagnosis of ACS

Antacids and Diagnosis in Patients with Atypical Chest Pain
- British "Best evidence topic reports"
- Differentiate cardiac vs. GI etiology?
- Two of 374 papers directly relevant
- 1984 Study:
  - 46 patients with documented AMI
  - 45% pain w/ indigestion
  - 29% antacids relieved pain

Changes in Numeric Pain Scale After NTG Do Not Predict Cardiac Etiology of Chest Pain
- Prospective study, 664 ED pts with CP
- Numeric pain scale before / after SL NTG
- 18% cardiac etiology

<table>
<thead>
<tr>
<th>Pain Reduction</th>
<th>Cardiac</th>
<th>Non-cardiac</th>
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<tbody>
<tr>
<td>Significant/Complete</td>
<td>31%</td>
<td>27%</td>
</tr>
<tr>
<td>Moderate</td>
<td>20%</td>
<td>22%</td>
</tr>
<tr>
<td>Minimal</td>
<td>29%</td>
<td>32%</td>
</tr>
<tr>
<td>No change</td>
<td>20%</td>
<td>19%</td>
</tr>
</tbody>
</table>
Truth:
Response to antacids and NTG does not predict ischemic CP
These medications are treatments, not diagnostic tools

Myth:
You can’t use the ECG to diagnose acute MI in patients with bundle branch block

ECG Diagnosis of Evolving AMI in the Presence of LBBB
- 131 GUSTO-I ECGs vs. controls LBBB
- Derivation and validation groups
- Diagnostic of AMI:
  - ST elevation ≥ 1mm, concordant with QRS
  - ST depression ≥ 1mm lead V1, V2, or V3
- Suggestive of AMI
  - ST elevation ≥ 5mm, discordant with QRS
- Sensitivity 36%, Specificity 96%

ECG Criteria for Detecting AMI in Patients With LBBB: A Meta-Analysis
- Meta-analysis, 11 studies, Sgarbossa algorithm
  - ECG Finding
    - ST-segment elevation ≥ 1mm in lead with concordant QRS complex: 5 Points
    - ST-segment depression ≥ 1mm in leads V1, V2, or V3: 3 Points
    - ST-segment elevation ≥ 5mm in lead with discordant QRS complex: 2 Points
- If score ≥ 3
  - Sensitivity 20%, Specificity 98%
  - Positive LR = 7.9, Negative LR = 0.81
- If score ≥ 2, highly variable performance
- Can use score ≥ 3 to rule-in, but not to exclude AMI

Interobserver Agreement in the ECG Diagnosis of AMI in Patients with LBBB
- 224 EKG with LBBB, 100 MI
- 4 cardiologists, 4 emergency physicians
- Sgarbossa criteria applied
- Excellent agreement for AMI within and between groups (K = 0.81-0.84)
Interobserver Agreement in the ECG Diagnosis of AMI in Patients with LBBB

**Median Sensitivity**
- Cardiologists: 73% Range 61-85%
- EPs: 68% Range 58-77%

**Median Specificity**
- Cardiologists: 98% Range 96-100%
- EPs: 99% Range 98-100%

P = 0.25

**Truth:**
Certain ECG criteria allow you to rule in AMI in patients with LBBB

**Myth:**
ED personnel must be “all clear” before delivering a shock during resuscitation

Hands-On Defibrillation: Analysis of Electrical Current Flow Through Rescuers...


- Patients undergoing elective cardioversion (a-fib/flutter) or likely would need it (EPS)
- Simulated CPR (with gloves)
- Biphasic defibrillator (via adhesive pads)
- Conductive wire from patient to rescuer
- Measured leakage voltage and current
Do Exam Gloves Provide Adequate Electrical Insulation for Safe Hands-On Defibrillation?

- Gloves from hospital cardiac arrest teams
- Compared 40 new gloves, 28 used non-CPR gloves, and 128 used CPR gloves
- Applied DC voltage across gloves to measure resistance
- Minimum resistance less in used gloves (60kΩ v. 120kΩ)
- “Inadequate protection” and degrades

Truth:
There may be no need to interrupt chest compressions during defibrillation…..but not yet certain