



## **Epistaxis: New Tricks for an Old Dog**

Patients with “difficult-to-control” epistaxis can really challenge your clinical skills and composure. A practical approach to this chief complaint will outline the anatomy, the natural history, and every trick possible to make you the true expert in the emergency department evaluation and treatment of epistaxis.

- Differentiate between the presentations of anterior and posterior epistaxis.
- Discuss the approaches to nasal anesthesia and vasoconstriction.
- Explain the new cost-effective management strategies for patients with epistaxis.

TH-223  
Thursday, October 14, 1999  
11:00 AM - 11:55 AM  
Room # N247  
Las Vegas Convention Center


*\*Consultant - Helix Medical*  
*Consultant - Olympus America*

## **FACULTY**

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Notes



## Chest Pain Units

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1999 ACEP Scientific Assembly  
Las Vegas Convention Center  
Las Vegas, Nevada

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## CPU'S

### The Medicine Behind Chest Pain Units Wave of the Future or Passing Fad

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## CPU's: Why

- When faced with a patient with chest pain the EP asks four questions:
  - 1) Is the patient having an MI?
  - 2) Does this patient have angina/CAD?
  - 3) How can I answer these questions quickly?
  - 4) How can I avoid a call to 1-800-LAWYERS?

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Notes

### CPU's: Why

- The famous 5% of discharges
- The famous 20% of dollars
- The famous 80% of rule outs
  - all for 5% of ED patients
- CPU's grew out of the desire to get it right, to keep those who need to be kept and to send home those who can safely go home.

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### CPU's: The case for extended ED care

- Control
  - efficiency/cost
  - revenue
- Attractive to customers
  - patients
  - payers
- Already done all the work

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### CPU's: Elements and Context

- Elements
  - The Place
  - The Patient
  - The Process--ED care/extended care
- Context
  - Your ED/Your Practice

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Notes

### CPU's: Essentials and Accidentals

- The Process is an essential
- The Place is an accidental

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### CPU's: History

- Different times and different places  
yield different models
  - Netherlands 1960
  - Baltimore 1980
  - Cincinnati 1990

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### CPU's: The Future

- Integration into ED Observation Units

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### CPU's: The Place

- Luxury: Separate Chest Pain Unit
- Practical: Integrate into other extended ED care

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### CPU's: The Patient

- Patient selection:
  - All patients aged 30 and over with chest pain and older patients with other symptoms suggestive of ischemia
  - If under 30 a positive test is more likely to be a false positive than a true positive

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### CPU's: The Process

Aspirin For Everyone

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Notes

### CPU's: The Process

- Answering the questions : the tools
  - History
  - Physical
  - EKG
  - Chemical Testing
  - Nuclear Testing
  - Provocative Testing

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### CPU's: The Process

- History
  - when it is good it is very very good and when it is bad it is awful -- humbling in a word
  - role of risk factors
  - location of pain: chest, left shoulder, right shoulder, right ? R + L arm very specific

Panju, A. Is The Patient Having Myocardial Infarction JAMA Oct. 14, 1998

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### CPU's: The Process

- Physical exam
  - neither sensitive nor specific
  - useful to work through differential dx.
  - chest wall tenderness
    - 3% of patients admitted with MI have tenderness
    - most patients with tenderness do not have an MI

Panju, A. Is The Patient Having Myocardial Infarction JAMA Oct. 14, 1998

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### CPU's: The Process

- EKG
  - Extremely useful tool: Inexpensive, available, easy to perform
  - Can be very specific for MI but never very sensitive
    - ST elevation 0.5mV in two contiguous leads=81%MI
    - ST depression >0.5mV = 48%MI
    - ST elevation and depression = 89%MI

Esres, N. et., al- Predictive Value of EKG in ACS, JAMA Feb. 24, 1999

### CPU's: The Process

History + EKG = Goldman Scale

Goldman Scale NEJM 1982, vol. 307 p588

### CPU's: The Process

- EKG
  - ACI-TIPI (Acute Coronary Insufficiency-Time Independent Predictive Instrument)
  - Takes four elements of history (age, gender, chest pain as chief symptom, location of pain) and three EKG findings and integrates them to form probability statement.

Selker, H. An Evaluation of Technologies..... AEM Jan 1997

Notes

### CPU's: The Process

- EKG: ACI-TIPI
  - Highly, widely (community and teaching) and rigorously validated
  - FREE / Shareware
  - Prints out on EKG- see syllabus
  - Thrombolytic variant also available
  - Needs integration with other data-- rainy day

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### CPU's: The Process

- Chemical Testing
  - Which Enzyme and When?
    - Myoglobin: early, sensitive, not specific
    - CK MB: intermediate, specific, not sensitive
    - Troponin: intermediate/late, specific, sensitive
      - troponin I vs. troponin T

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### CPU's: The Process

- Chemical Testing: ED Performance  
The Hamm Study:
  - Hamm: two negative troponins, one at least six hours after onset of pain--very low event rate--ok to send home
  - (caveat)

Hamm C. et al Emergency Room Triage.....NEJM Dec 4, 1997

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### CPU's: The Process

- Chemical Testing: ED Performance
  - TnI performed better than TnT (caveat,caveat)
  - NOTE: There were CK MB ⊖ and Troponin ⊕

Hamm C. et. al. Emergency Room Triage.....NEJM Dec 4, 1997

### CPU's: The Process

- Chemical Testing: ED Performance
  - Sayre: TnT in 400 patients
    - testing at intervals over 24 hours
    - positive test predictive of event
    - 8% of torponin (+) were CKMB (-)
      - 20% of those had event

Sayre, M. Measurement of Cardiac Troponin AEM May 1998

### CPU's: The Process

- Chemical Testing: ED Performance
  - Hopkins Study:
    - 401 patients/TnI vs TNT/Adverse Event
    - CK MB more specific/troponin more sensitive
    - Sensitivity of single test: low

Green G, et al. Academic Emergency Medicine August 1998.

Notes

### CPU's: The Process

- Chemical Testing: ED Performance  
BWH Study:
  - 1303 patients/0.1 mg threshold/  
2 tests in 24 hours
  - 99% sensitive/89% specific for MI
  - 31% of troponin (+)/MI (-) group had  
major complications

Johnson P, et al. American Heart Journal June 1999.

### CPU's: The Process

- Chemical Testing
  - When should second test be  
done
    - x hours after onset
    - x hours after presentation?

Gibler, B. Understanding True Risk..... Am Heart Journal June 1999.

### CPU's: The Process

- OK, patient ruled out. (Question #1)  
What now?
- Does patientt have CAD? (Question #2)
- Is it safe to send patient home? (Question #4)

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### CPU's: The Process

- Provocative Testing
  - Which Test ?
  - When ?

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### CPU's: The Process

- Provocative Testing: Which Test
  - ETT
  - ECHO
  - Nuclear Medicine

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### CPU's: The Process

- Provocative Testing When:
  - After Two Troponins
  - Two Paths
    - ETT Home
    - Home ETT

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### CPU's: Putting it together

- Has anybody done this and looked at it closely?
  - Is it practical?
  - Is it cost saving?
  - Is it profitable?

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### CPU's: Putting it together

- Cook County ED: low risk patients
  - Goldman scale to determine low risk but added other exclusions :
    - no CAD
    - able to exercise

Roberts, R. et., al Cost of ED ADP VS Hospitalization for Chest Pain JAMA Nov. 1997

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### CPU'S: Putting it together

- Cook County: low risk ADP, randomized
  - cheaper (\$1528 vs \$2095)
  - quicker (11 hours less LOS)
  - admission rate 45.2% vs 100%

Roberts, R. et, al. Cost of ED ADP VS Hospitalization for Chest Pain JAMA Nov. 1997

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### CPU's: Putting it together

- LDS Study
  - 100 low risk patients randomized to ED care or usual care
  - ED care was enzymes (0,3,6,9) and ETT

Gomez, M. An ED Based Protocol for Rapid Rule Out (Romeo), JACC, 28 July 1996

### CPU's: Putting it together

- LDS Study
  - Reduced LOS (11.9 vs 22.8)
  - Lower charges (\$893 vs \$1359)
  - "No diagnosis was missed"

Gomez, M. An ED Based Protocol for Rapid Rule Out (Romeo), JACC, 28 July 1996

### CPU's: Putting it together

- Mayo Clinic: ED Observation for patients with unstable angina
  - patients with significant story who fit "intermediate risk" for short term event according to AHCPR guideline (caveats--as usual)

Farkouh, M. ED Obs for Unstable Angina. NEJM Dec 24, 1998

Notes

### CPU's: Putting it together

- Mayo Clinic Study:
  - unstable angina = rest; more than 20 minutes of pain; new- onset; increase in existing angina, post MI angina
  - randomized to ED OBS vs routine care upstairs

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### CPU's: Putting it together

- Mayo Clinic Study:
  - 2517 screened; 2012 excluded
  - 424 randomized
  - 212 to CPU
    - 60 admitted before ETT
    - 55 admitted after provocative test
    - 97 patients home from EDOBS

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### CPU's Putting it together

- Mayo Clinic Study:
  - "Treadmill and nuclear stress studies were routinely available between 7 a.m. and 10:30 p.m., on both weekdays and weekends."

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### CPU's: Putting it together

- Mayo Clinic study: Outcomes
  - Clinical outcomes no different than usual care
  - LOS 9.2 hours
  - Admissions reduced by 45% (97 of 212)
  - Resource use over 6 months less in CPU group

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### CPU's: The Answer

- There is high quality evidence to show that CPU's can manage both low and medium risk (for MI) patients quicker and cheaper than traditional care and do it safely and with a high level of patient satisfaction.

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### CPU's: The Answer

The Finances are Problematic

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Notes

### CPU's: The Future

- The Place: ED Obs
- The Patient: Will be older

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### CPU's: The Future

- New Markers
  - C-Reactive Protein
  - Malondialdehyde-Modified LDL

JAMA 1999; 281:1718-1721

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### CPU's: The Future

- The Process:
  - 60 minutes
    - History
    - Aspirin
    - Physical
    - EKG
    - Chemical Testing
    - Disposition

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