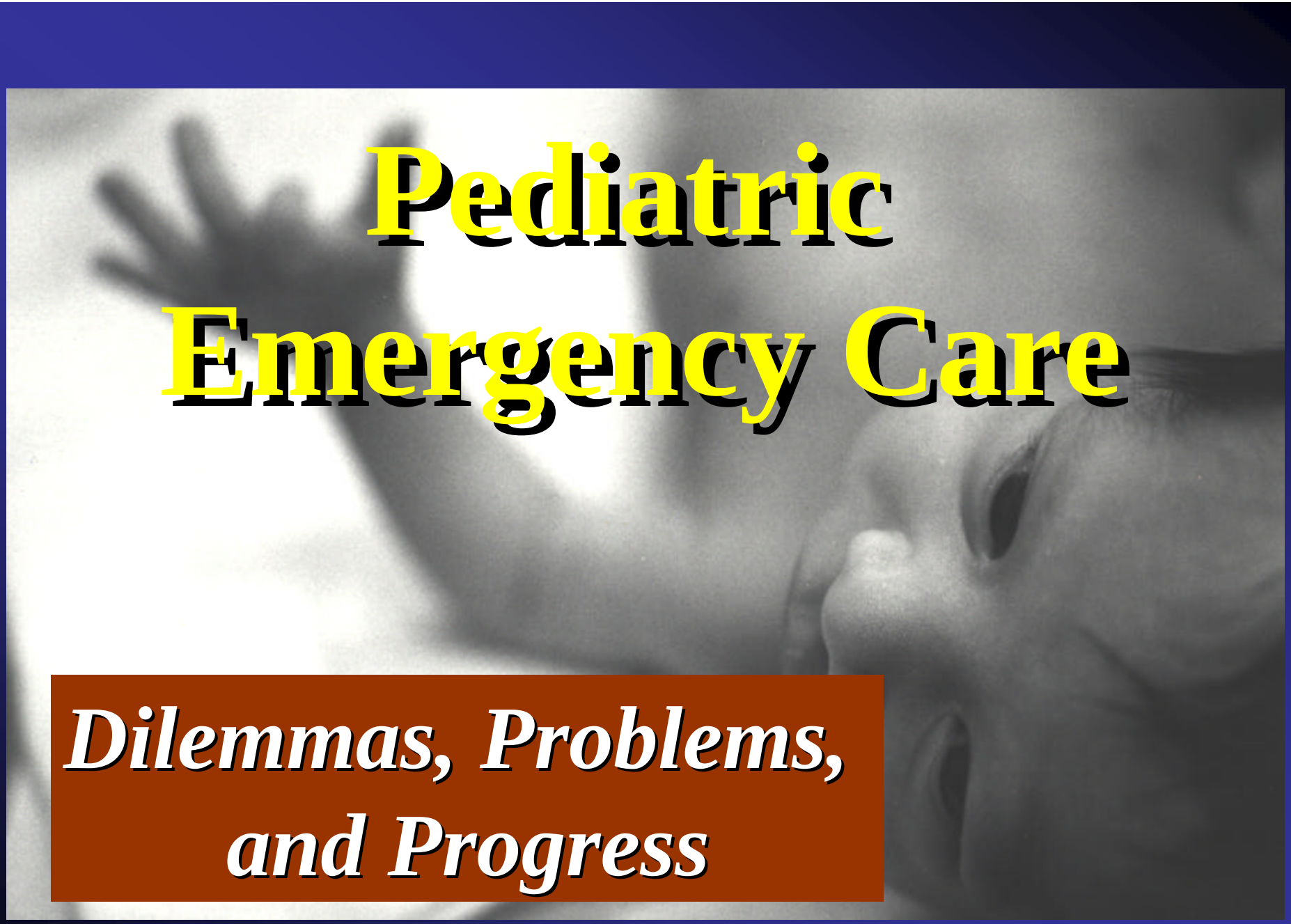
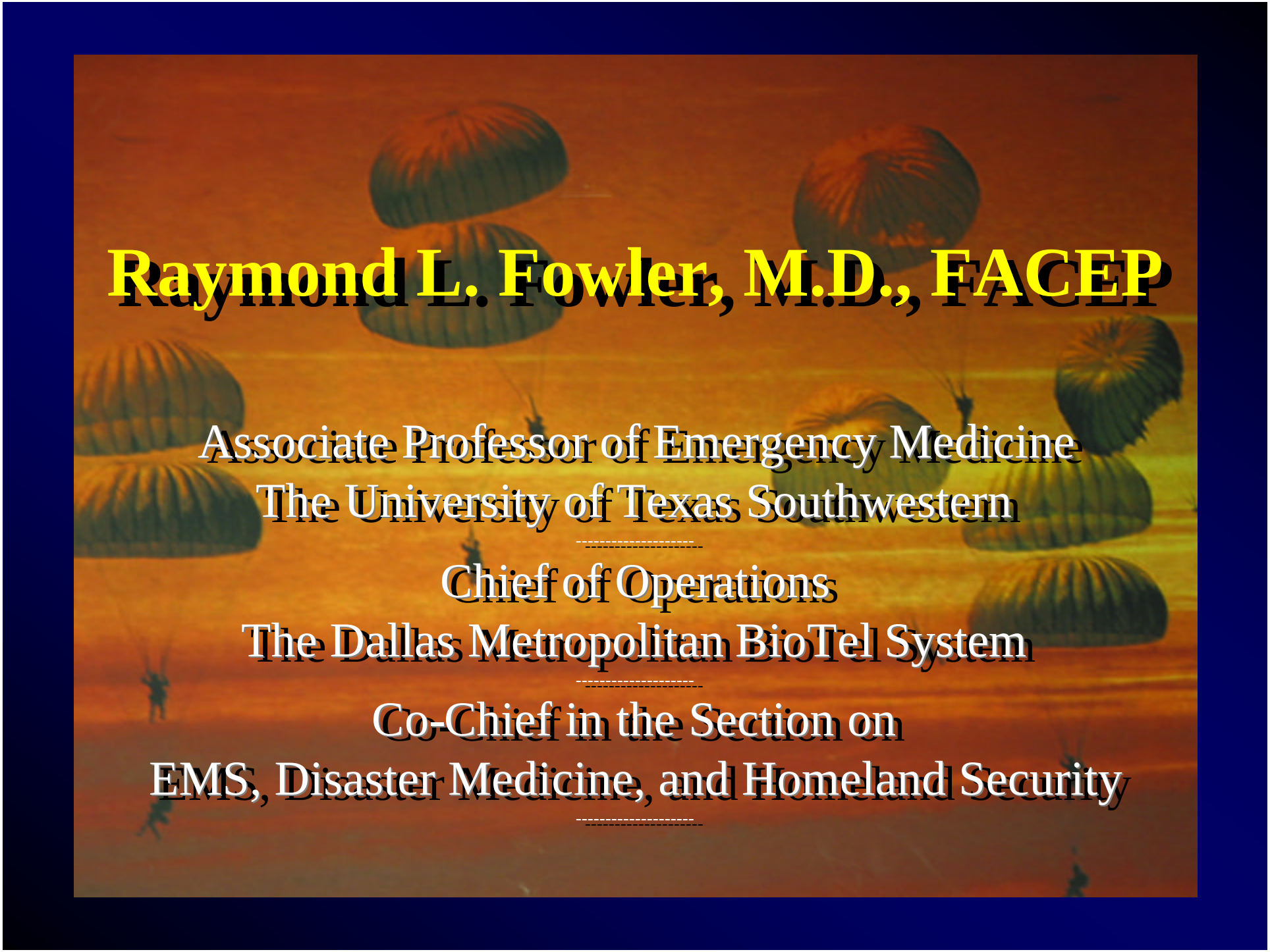
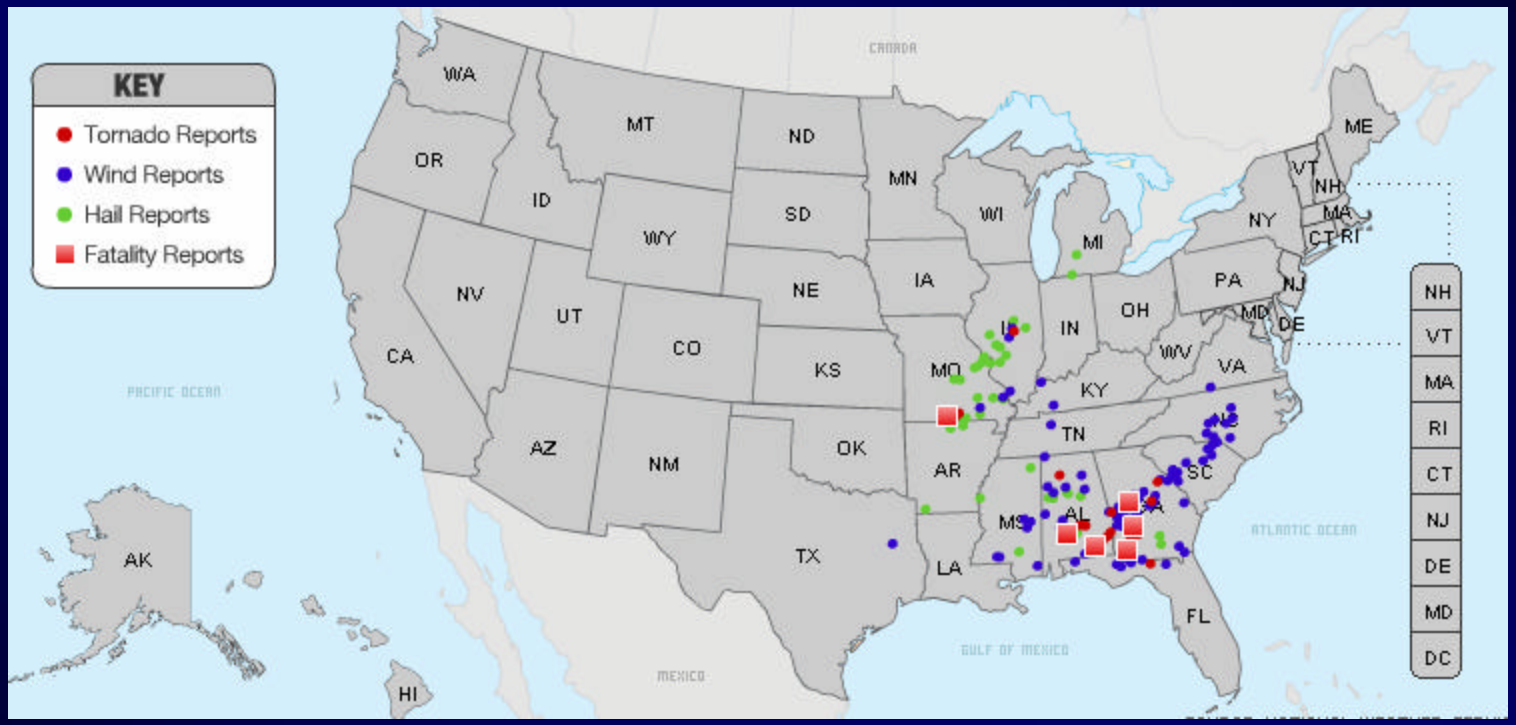


Pediatric Emergency Care

Dilemmas, Problems, and Progress


Raymond L. Fowler, M.D., FACEP
Associate Professor of Emergency Medicine
The University of Texas Southwestern
Chief of Operations
The Dallas Metropolitan BioTel System
Co-Chief in the Section on
EMS, Disaster Medicine, and Homeland Security


www.utsw.ws


KEY
Tornado Reports
Wind Reports
Hail Reports
Fatality Reports
CANADA
PACIFIC OCEAN
ATLANTIC OCEAN
GULF OF MEXICO
MEXICO
WA
OR
CA
ID
NV
MT
WY
UT
AZ
CO
NM
ND
SD
NE
KS
OK
TX
MN
IA
MO
AR
LA
WI
IL
MS
MI
IN
KY
TN
AL
OH
WV
GA
FL
SC
VA
PA
NY
MD
DE
NJ
CT
RI
MA
VT
NH
ME
AK
HI
NH
VT
MA
RI
CT
NJ
DE
MD
DC

3/3/2007

Critical Issues in Pediatric Emergencies

- *Small Size*
- *Confusing Clinical Picture*
- *Infrequent Procedures*
- *Lack of practice and skill*
- *Intimidation*
- *Avoiding overventilation*

What's different about kiddies?

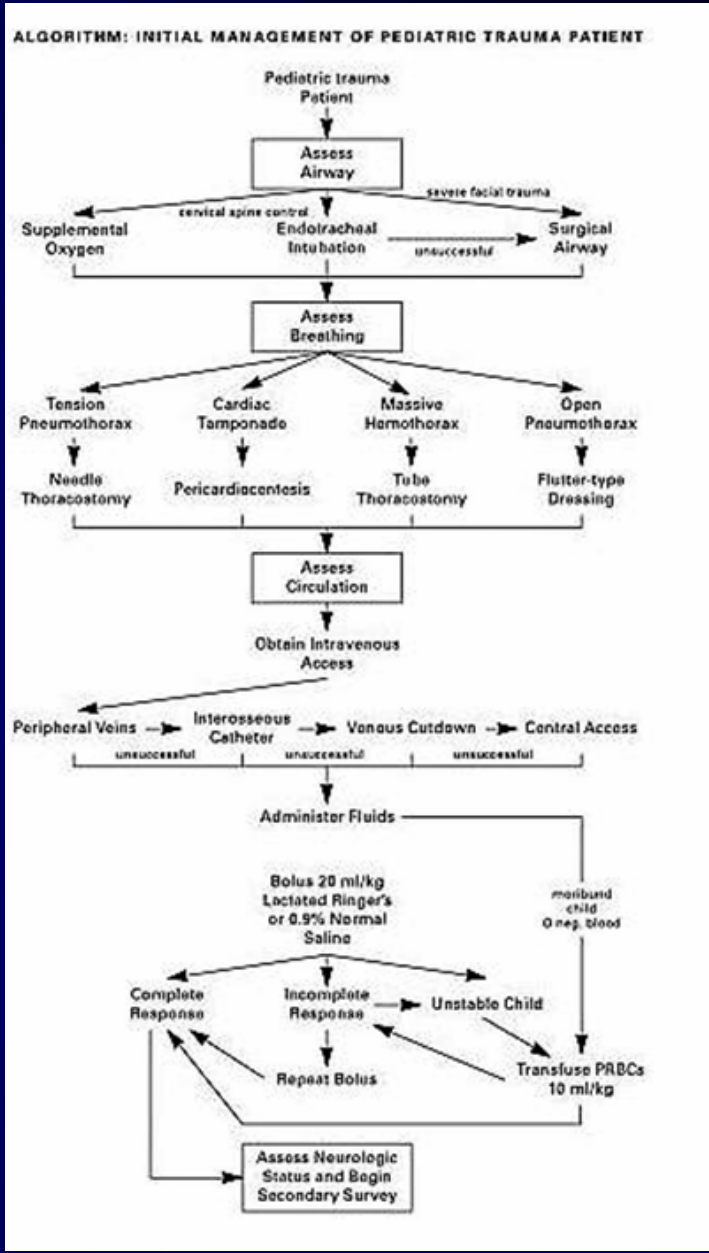
- *Small Size: They cool off quickly!*
- *Assessing vital signs*
- *Difficult IV status*
- *Tough intubation*
- *Crying, fear, struggling*
- *Dealing with families*

Airway

Breathing

Circulation

Neurological



3/3/2007

Scene Survey/Mechanism/# pts.

LOC/Airway/Cspine

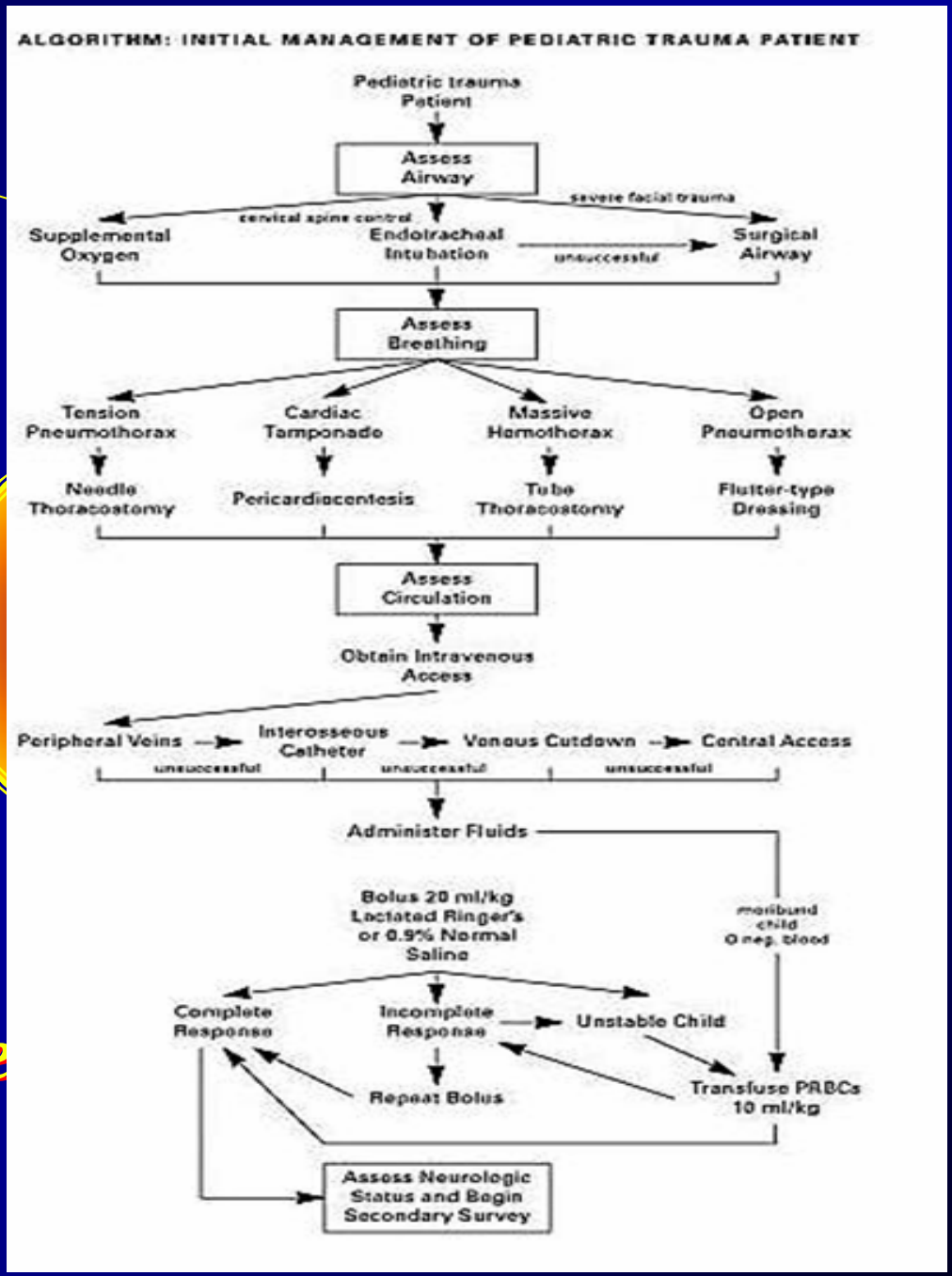
Respiratory Rate and Labor

Pulses R & Q, N & W
Skin CMT/CRT/External Bleeding

Neck appearance, JVD, Trachea

Chest appearance, BS, HT

Quick survey of abdomen, pelvis, and extremities



. . .the vital eleme

Scene Survey/Mechanism/# pts.

LOC/Airway/Cspine

Vintage BTLS 1984

Chest appearance, BS, HT

Quick survey of abdomen, pelvis, extremities, and back

The Ventilation of the Critically Ill Child

3/3/2007

In short,
we overventilate people

Organs are UNIQUELY SENSITIVE to overventilation during shock

3/3/2007

Everybody who has looked at this has found that medical providers cannot control the rate of ventilation

1: Crit Care Med. 2004 Sep;32(9 Suppl):S345-51.

Death by hyperventilation: a common and life-threatening problem during cardiopulmonary resuscitation.

Aufderheide TP, **Lurie KG**.

Department of Emergency Medicine, Medical College of Wisconsin, Milwaukee, Wisconsin, USA.

CONTEXT: This translational research initiative focused on the physiology of cardiopulmonary resuscitation (CPR) initiated by clinical observation of consistent hyperventilation by professional rescuers in out-of-hospital cardiac arrest. This observation generated scientific hypotheses that could only ethically be tested in the animal laboratory. OBJECTIVE: To examine the hypothesis that excessive ventilation rates during performance of CPR by overzealous but well-trained rescue personnel causes a significant decrease in coronary perfusion pressure and an increased likelihood of death. DESIGN AND SETTING: In

DEATH BY HYPERVENTILATION!!

3/3/2007

1: Crit Care Med. 2004 Sep;32(9 Suppl):S345-51.

Death by hyperventilation: a common and life-threatening problem during cardiopulmonary resuscitation.

Aufderheide TP, Lurie KG.

Department of Emergency Medicine, Medical College of Wisconsin, Milwaukee, Wisconsin, USA.

CONTEXT: This translational research initiative focused on the physiology of cardiopulmonary resuscitation (CPR) initiated by clinical observation of consistent hyperventilation by professional rescuers in out-of-hospital cardiac arrest. This observation generated scientific hypotheses that could only ethically be tested in the animal laboratory. OBJECTIVE: To examine the hypothesis that excessive ventilation rates during performance of CPR by overzealous but well-trained rescue personnel causes a significant decrease in coronary perfusion pressure and an increased likelihood of death. DESIGN AND SETTING: In

CONCLUSIONS:

Despite seemingly adequate training, professional rescuers consistently hyperventilated patients during out-of-hospital CPR.

3/3/2007

What happens with hyperventilation?

- Decreased brain blood flow
- Altered mental status
- Decreased blood to the heart muscle
- Reduced cardiac output
- Increased size of brain trauma

Hyperventilation effects on the traumatized brain

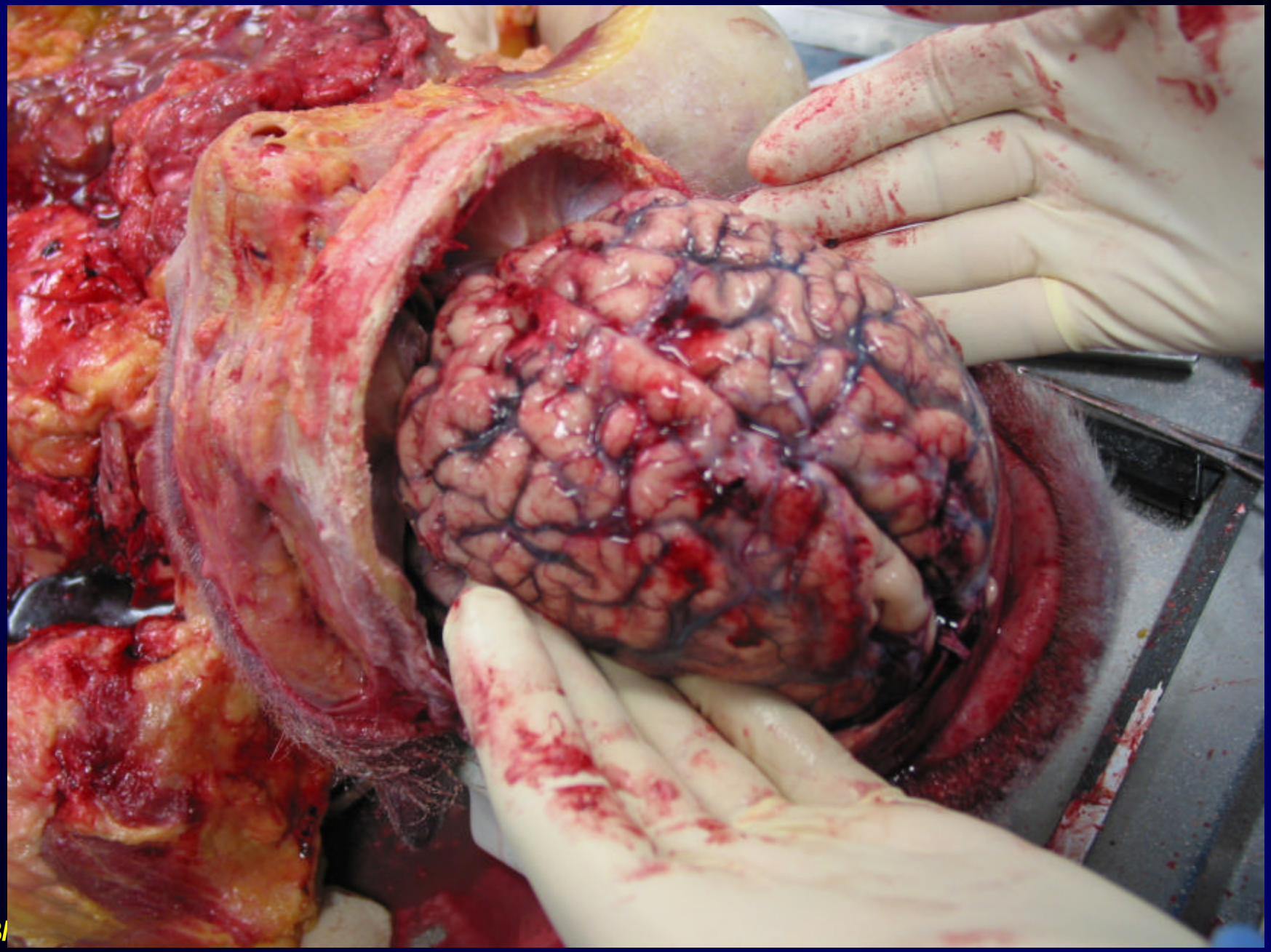
- Areas of injury increase in size
- Brain blood flow is reduced
- Survival is decreased

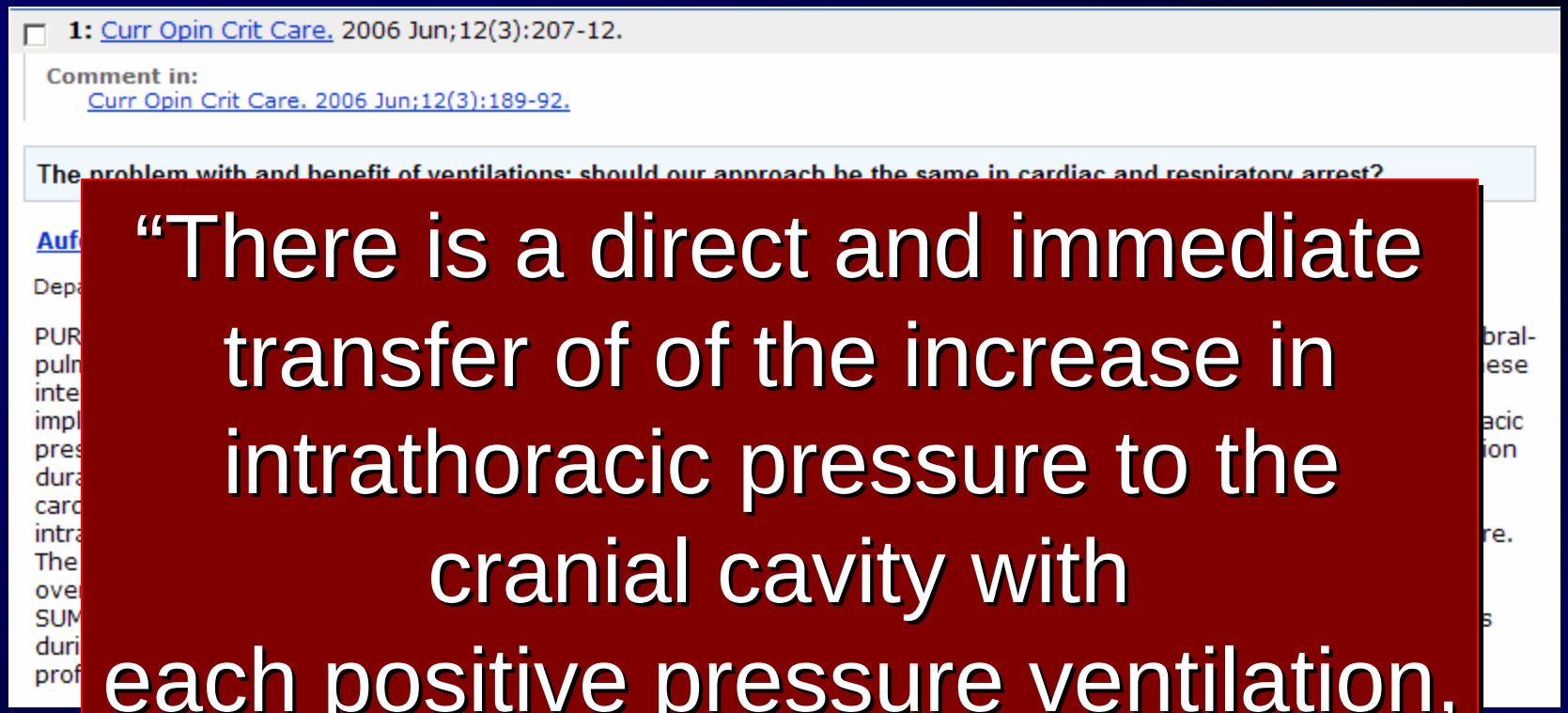
Why did we ever start hyperventilation to begin with???

We thought that in acute brain injury, intracranial pressure was increasing, so we had to make more room by decreasing the size of the brain

We didn’t know that we were making things worse

Hyperventilation, after all, reduces blood flow to the brain

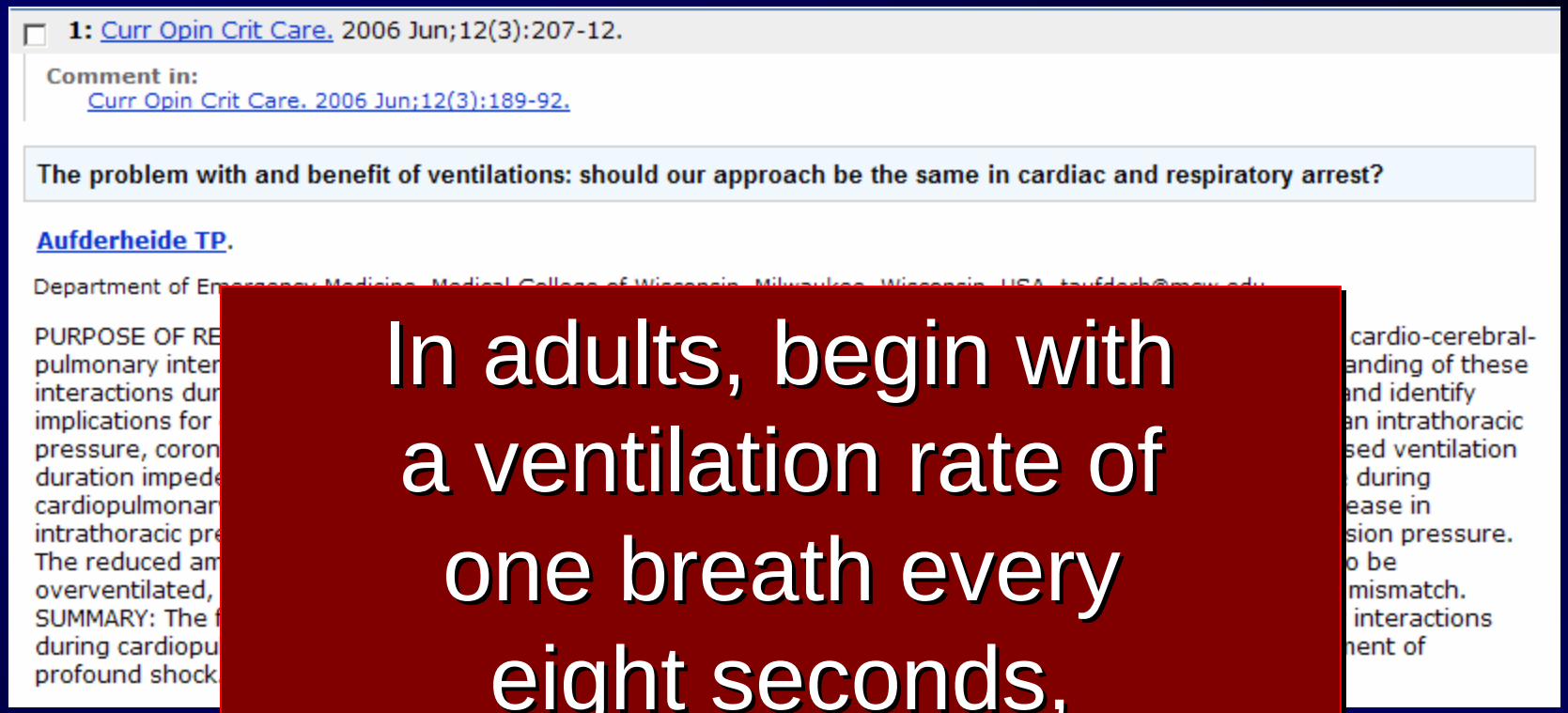




"There is a direct and immediate transfer of of the increase in intrathoracic pressure to the cranial cavity with each positive pressure ventilation, reducing cerebral perfusion… compromising hemodynamics to the heart and brain."

Ventilate ONLY sufficient to maintain a capnography level of 35 to 40, perhaps slightly higher

Some evidence exists that we might even want to go for a slightly higher capnography level to improve brain blood flow


1: Curr Opin Crit Care. 2006 Jun;12(3):207-12.

Comment in:
Curr Opin Crit Care. 2006 Jun;12(3):189-92.

The problem with and benefit of ventilations: should our approach be the same in cardiac and respiratory arrest?

Aufderheide TP.

Department of Emergency Medicine, Medical College of Wisconsin, Milwaukee, Wisconsin, USA. taufderh@mcw.edu

PURPOSE OF RE
pulmonary inter
interactions dur
implications for
pressure, coron
duration impede
cardiopulmonar
intrathoracic pr
The reduced am
overventilated,
SUMMARY: The f
during cardiopu
profound shock.
cardio-cerebral-
anding of these
and identify
an intrathoracic
sed ventilation
during
ease in
sion pressure.
o be
mismatch.
interactions
ment of

In adults, begin with a ventilation rate of one breath every eight seconds, using a ONE HANDED SQUEEZE!

1: Curr Opin Crit Care. 2006 Jun;12(3):207-12.

Comment in:
Curr Opin Crit Care. 2006 Jun;12(3):189-92.

The problem with and benefit of ventilations: should our approach be the same in cardiac and respiratory arrest?

Aufderheide TP.

Department of Emerg

PURPOSE OF REVIE
pulmonary interacti
interactions during
implications for clini
pressure, coronary
duration impede ve
cardiopulmonary re
intrathoracic pressu
The reduced amoun
overventilated, com
SUMMARY: The fund
during cardiopulmo
profound shock.

g of cardio-cerebral-
erstanding of these
on, and identify
mean intrathoracic
creased ventilation
sure during
increase in
erfusion pressure.
ds to be
sion mismatch.
nary interactions
eatment of

In children,
reduce the tidal
volume accordingly
(the size of the squeeze)
and increase the rate
to maintain a
capnography level
of 35 to 40

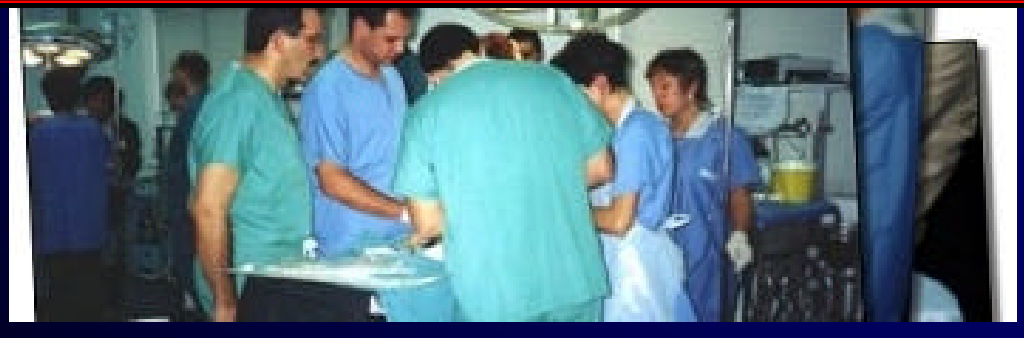
Brain tissue oxygen monitoring in pediatric patients with severe traumatic brain injury.

Stiefel MF, Udoetuk JD, Storm PB, Sutton LN, Kim H, Dominquez TE, Helfaer MA, Huh JW.

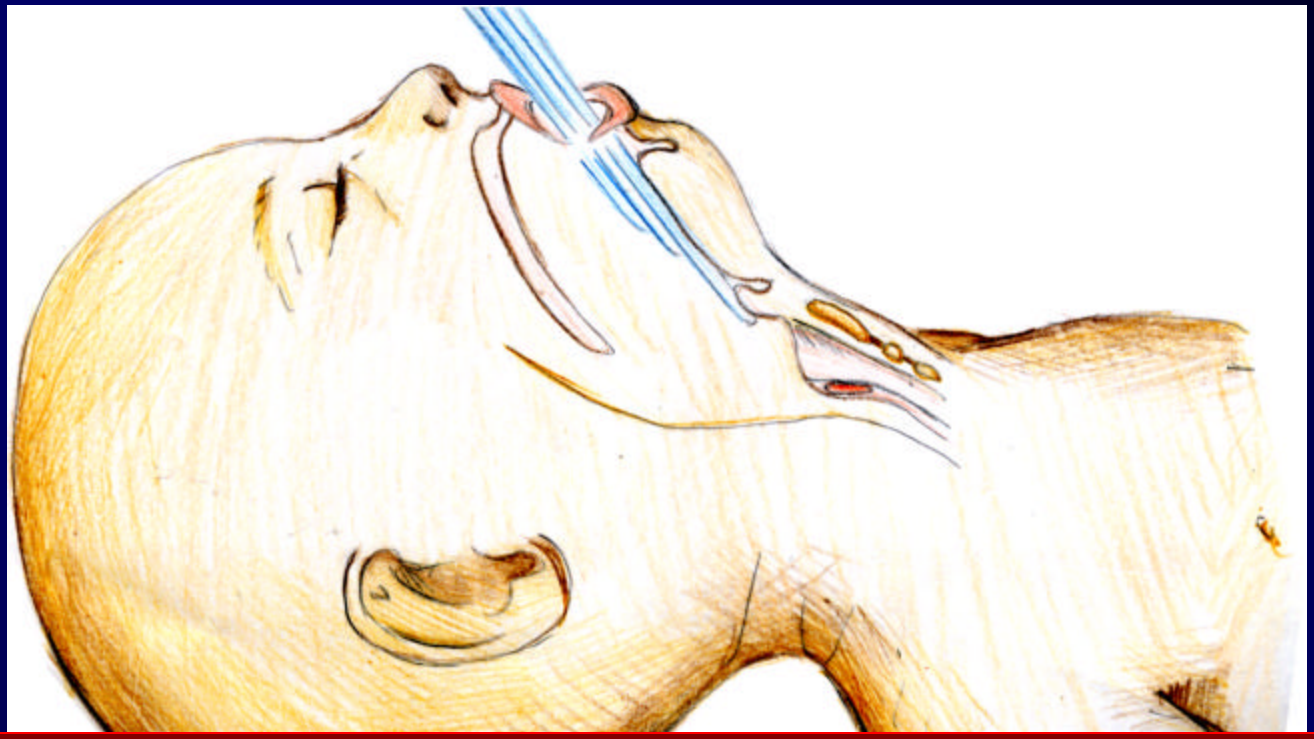
Department of Neurosurgery, University of Pennsylvania School of Medicine, 19104, USA. stiefelm@uphs.upenn.edu

OBJECT: Intracranial pressure (ICP) and cerebral perfusion pressure (CPP) monitoring are fundamental to the management of severe traumatic brain injury (TBI). In adults, brain tissue oxygen monitoring (specifically PO2) and treatment have been shown to be safe additions to conventional neurocritical care and are associated with improved outcome. Brain tissue oxygen monitoring, however, has not been described in pediatric patients with TBI. In this report, the authors present preliminary experience with the use of ICP and PO2 monitoring in this population. METHODS: Pediatric patients (age <18 years) with severe TBI (Glasgow Coma Scale score <8) admitted to a Level 1 trauma center who underwent ICP and PO2 monitoring were evaluated. Therapy was directed at maintaining ICP below 20 mm Hg and age-appropriate CPP (> or =40 mm Hg). Data obtained in six patients (two girls and four boys ranging in age from 6-16 years) were analyzed. Brain tissue oxygen levels were significantly higher ($p < 0.01$) at an ICP of less than 20 mm Hg (PO2 29.29 +/- 7.17 mm Hg) than at an ICP of greater tha
was
CO
pe

Conclusions: Brain tissue oxygen monitoring may be a safe and useful addition to ICP monitoring in the treatment of pediatric patients with severe TBI



3/3/2007



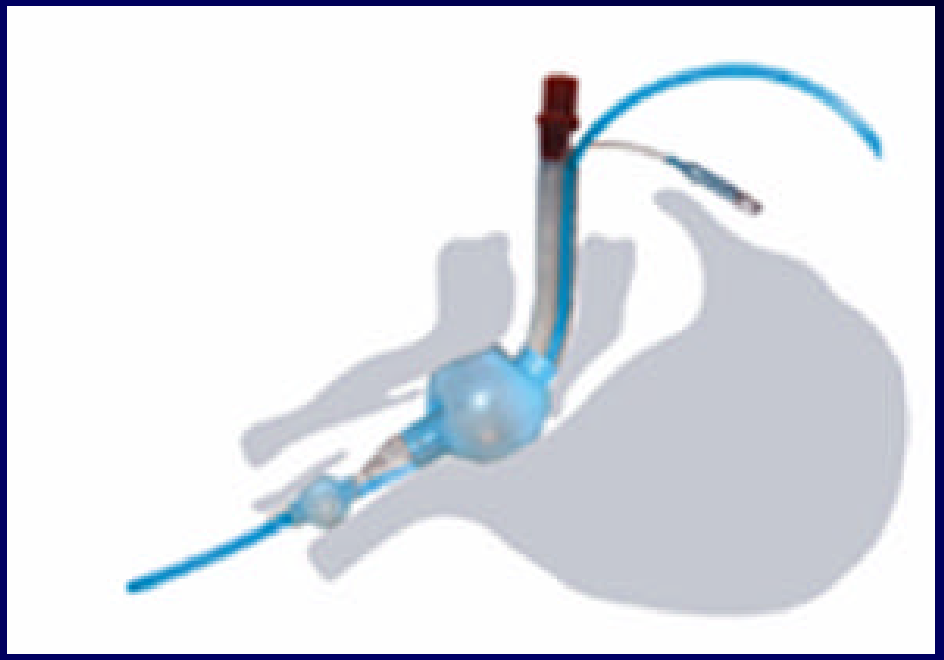
Pediatric intubation may be the hardest skill to learn…
…and the hardest to maintain…

3/3/2007

It may not be done for years.

It may have been done ONCE in training, if at all

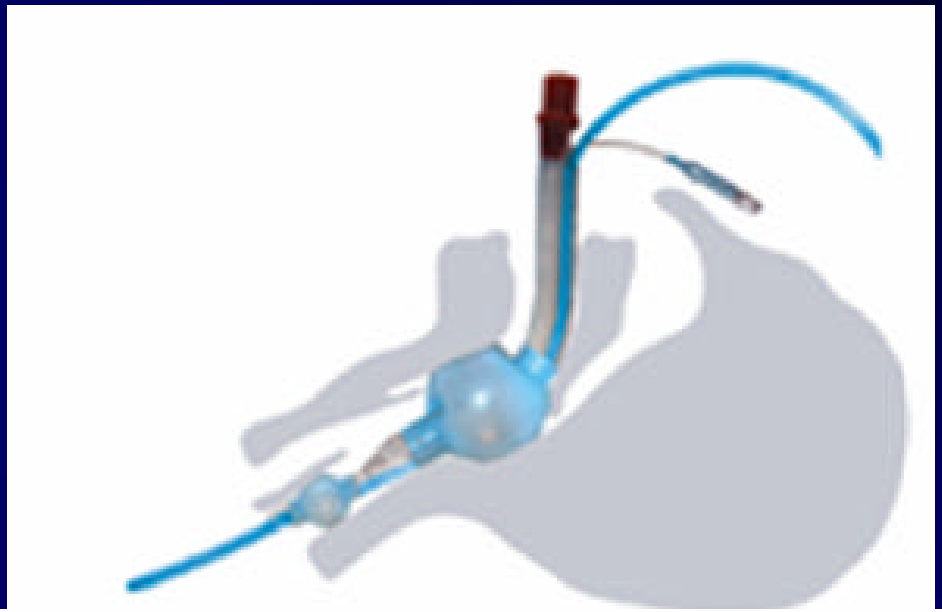
All of the complicating issues



The King LTS-D

May be an airway revolution
Comes in multiple sizes
Coming soon for small kiddies

3/3/2007



The second lumen of the KING LTS-D, which is open at the distal tip of the tube, provides three key additional benefits:

- Passage of gastric tube up to 18 French
- Channel for regurgitation, which significantly reduces potential for regurgitation to get past the cuff and therefore aids in reducing the chance for aspiration.
- Provides "vent" for gastric pressure and stomach decompression.

Some additional design features unique to the KING LTS-D are:

- Smaller, softer tip. This aids in easier placement.
- New tapered ramp design provides additional ventilation outlets.
- Ramp for passage of tube exchanger or fiberoptics located at the proximal eye. This reduces the need to withdraw the tube when using a tube exchanger or fiberoptics.

1: Ann Emerg Med. 2004 Aug;44(2):181-2; author reply 182-3.

Comment on:
Ann Emerg Med. 2003 Aug;42(2):206-15.

Out-of-hospital pediatric airway management.

Eckstein M.

PMID: 15278993 [PubMed - indexed for MEDLINE]

Mortality went up substantially in traumatized children who were intubated in the field

1: Ann Emerg Med. 2004 Aug;44(2):181-2; author reply 182-3.

Comment on:
Ann Emerg Med. 2003 Aug;42(2):206-15.

Out-of-hospital pediatric airway management.

Eckstein M.

PMID: 15278993 [PubMed - indexed for MEDLINE]

Los Angeles has removed endotracheal intubation for children as a paramedic skill

1: Ann Emerg Med. 2004 Aug;44(2):181-2; author reply 182-3.

Comment on:
Ann Emerg Med. 2003 Aug;42(2):206-15.

Out-of-hospital pediatric airway management.

Per Dr. Eckstein:

Based upon their airway study,
no benefit in any category,
trended in worse in certain categories

Before waveform capnography;
short, urban transport times.

No plans for mini-King LTS-D or similar

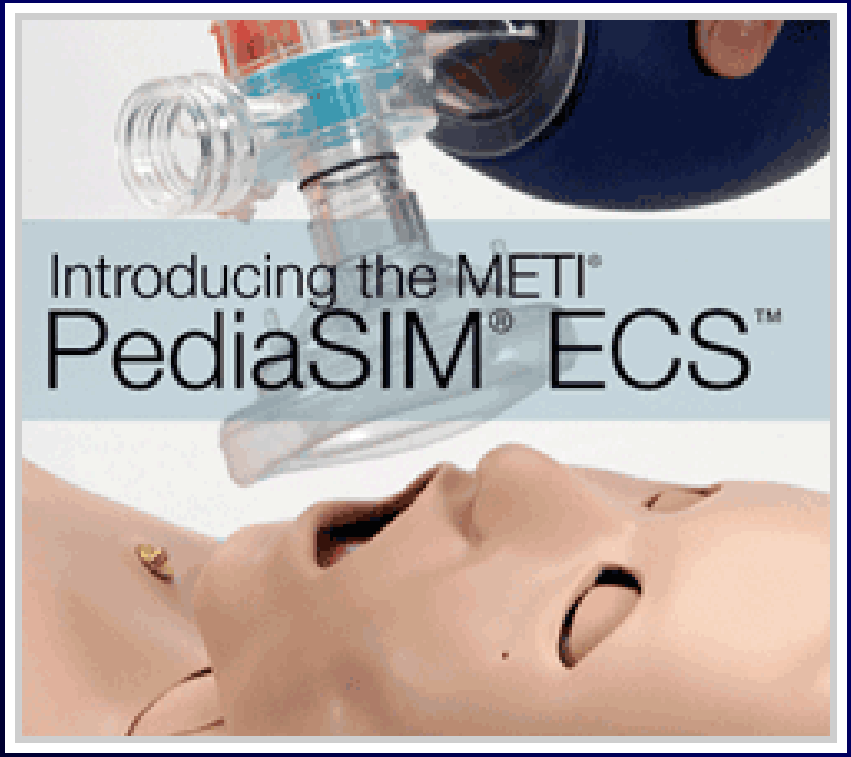
Currently: BVM and transport

High-Fidelity Medical Simulation as an Assessment Tool for Pediatric Residents' Airway Management Skills.

Original Articles

Pediatric Emergency Care. 23(1):11-15, January 2007.
*Overly, Frank L. MD *+++; Sudikoff, Stephanie N. MD +++; Shapiro, Marc J. MD *++*

Abstract:
Objectives: To evaluate high-fidelity medical simulation as an assessment tool for pediatric residents' ability to manage an acute airway.



3/3/2007

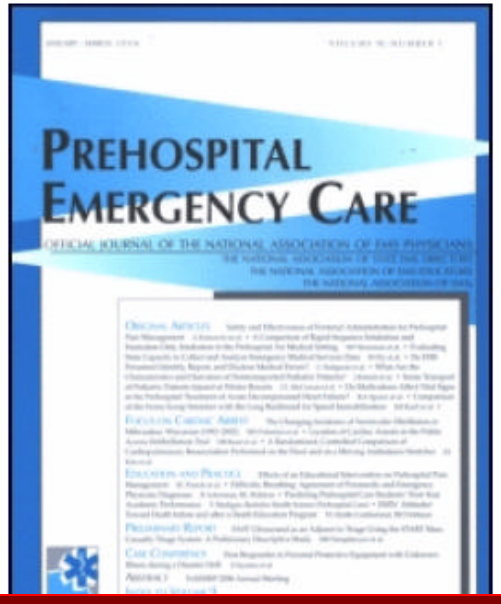
3/3/2007

Position Paper

Intraosseous Vascular Access in the Out-of-Hospital Setting
Position Statement of the National Association of EMS Physicians

- EMS agencies that provide advanced level care should provide at least one method of IO access for pediatric patients, and each agency should also consider providing at least one method of IO access for adult patients.

3/3/2007



Prehospital Emergency Care
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713698281

The Role of Intraosseous Vascular Access in the Out-of-Hospital Environment (Resource Document to NAEMSP Position Statement)

Raymond Fowler [a]; John V. Gallagher [b]; S. Marshal Isaacs [c]; Eric Ossman [d]; Paul Pepe [e]; Marvin Wayne [f]
[a] Section on EMS, Disaster Medicine, and Homeland Security, Southwestern Medical Center. Dallas, Texas
[b] Phoenix Fire Department EMS and Base Hospital, St. Luke's Medical Center. Phoenix, Arizona

…the intraosseous route should be the first alternative to difficult or delayed intravenous access. With these considerations, the role of intraosseous vascular access in the out-of-hospital environment should be reemphasized.

National Registry of Emergency Medical Technicians
Advanced Level Practical Examination

PEDIATRIC INTRAOSSEOUS INFUSION

Candidate: _____ Examiner: _____

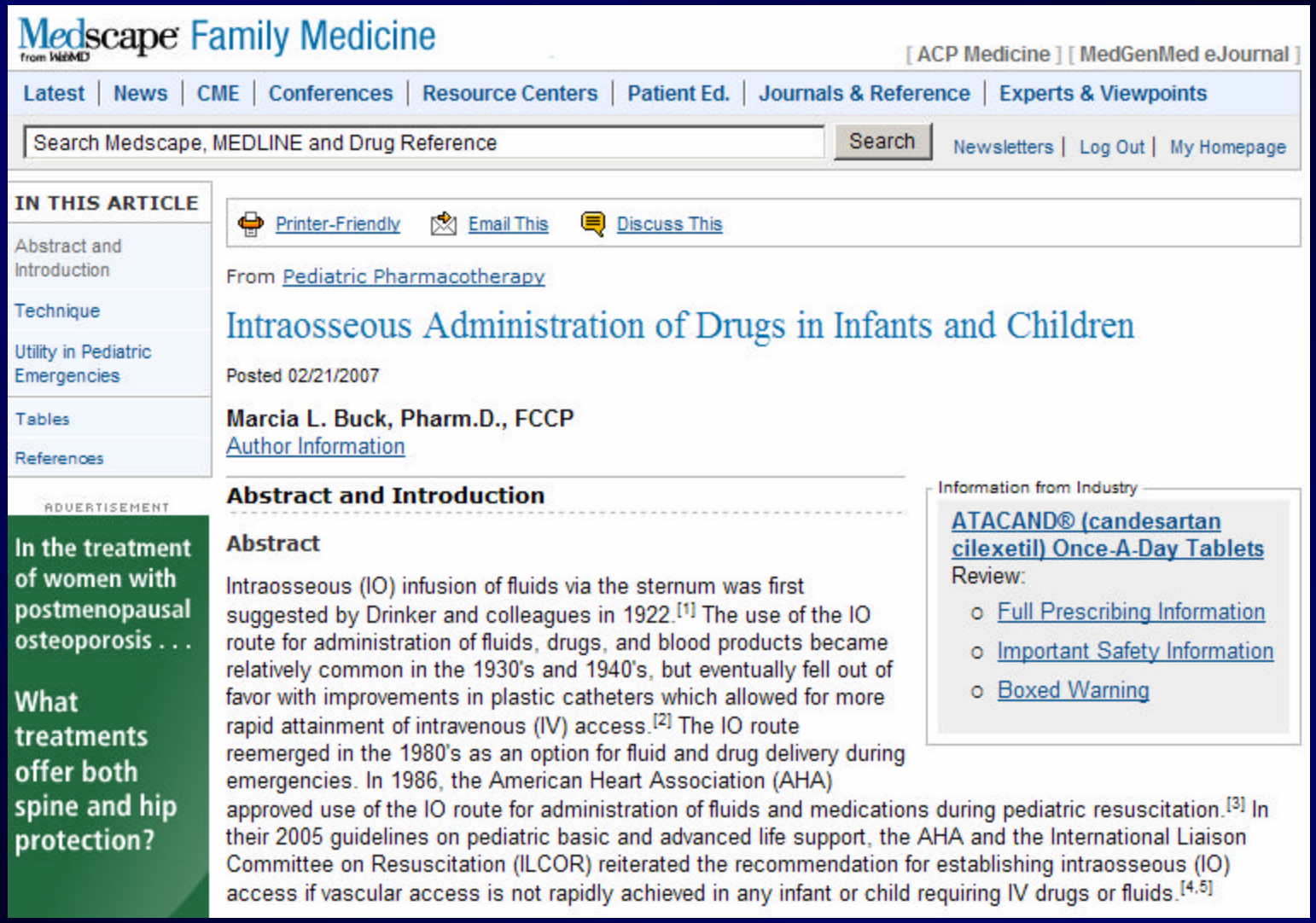
Date: _____ Signature: _____

Time Start:_____

	Possible Points	Points Awarded
Checks selected IV fluid for: -Proper fluid (1 point) -Clarity (1 point)	2	
Selects appropriate equipment to include: -IO needle (1 point) -Syringe (1 point) -Saline (1 point) -Extension set (1 point)	4	
Selects proper administration set	1	
Connects administration set to bag	1	
Prepares administration set [fills drip chamber and flushes tubing]	1	
Prepares syringe and extension tubing	1	
Cuts or tears tape [at any time before IO puncture]	1	
Takes or verbalizes body substance isolation precautions [prior to IO puncture]	1	
Identifies proper anatomical site for IO puncture	1	
Cleanses site appropriately	1	
Performs IO puncture: -Stabilizes tibia (1 point) -Inserts needle at proper angle (1 point) -Advances needle with twisting motion until "pop" is felt (1 point) -Unscrews cap and removes stylette from needle (1 point)	4	
Disposes of needle in proper container	1	
Attaches administration set to IO needle (with or without 3-way)	1	
Slowly injects saline to assure proper placement of needle	1	
Adjusts flow rate as appropriate	1	
Secures needle with tape and supports with bulky dressing	1	
TOTAL	23	

Time End: _____

3/3/2007



Medscape Family Medicine
from WebMD

[ACP Medicine] [MedGenMed eJournal]

Latest | News | CME | Conferences | Resource Centers | Patient Ed. | Journals & Reference | Experts & Viewpoints

Search Medscape, MEDLINE and Drug Reference

Search

Newsletters | Log Out | My Homepage

IN THIS ARTICLE

Abstract and Introduction

Technique

Utility in Pediatric Emergencies

Tables

References

ADVERTISEMENT

In the treatment of women with postmenopausal osteoporosis . . .

What treatments offer both spine and hip protection?

Printer-Friendly Email This Discuss This

From Pediatric Pharmacotherapy

Intraosseous Administration of Drugs in Infants and Children

Posted 02/21/2007

Marcia L. Buck, Pharm.D., FCCP
Author Information

Abstract and Introduction

Abstract

Intraosseous (IO) infusion of fluids via the sternum was first suggested by Drinker and colleagues in 1922.[1] The use of the IO route for administration of fluids, drugs, and blood products became relatively common in the 1930's and 1940's, but eventually fell out of favor with improvements in plastic catheters which allowed for more rapid attainment of intravenous (IV) access.[2] The IO route reemerged in the 1980's as an option for fluid and drug delivery during emergencies. In 1986, the American Heart Association (AHA) approved use of the IO route for administration of fluids and medications during pediatric resuscitation.[3] In their 2005 guidelines on pediatric basic and advanced life support, the AHA and the International Liaison Committee on Resuscitation (ILCOR) reiterated the recommendation for establishing intraosseous (IO) access if vascular access is not rapidly achieved in any infant or child requiring IV drugs or fluids.[4,5]

Information from Industry

ATACAND® (candesartan cilexetil) Once-A-Day Tablets
Review:

- Full Prescribing Information
- Important Safety Information
- Boxed Warning

3/3/2007

Pediatric Intraosseous Access (DVD-Format Video)

70-2346 | **$45.00**

Ships Same Day

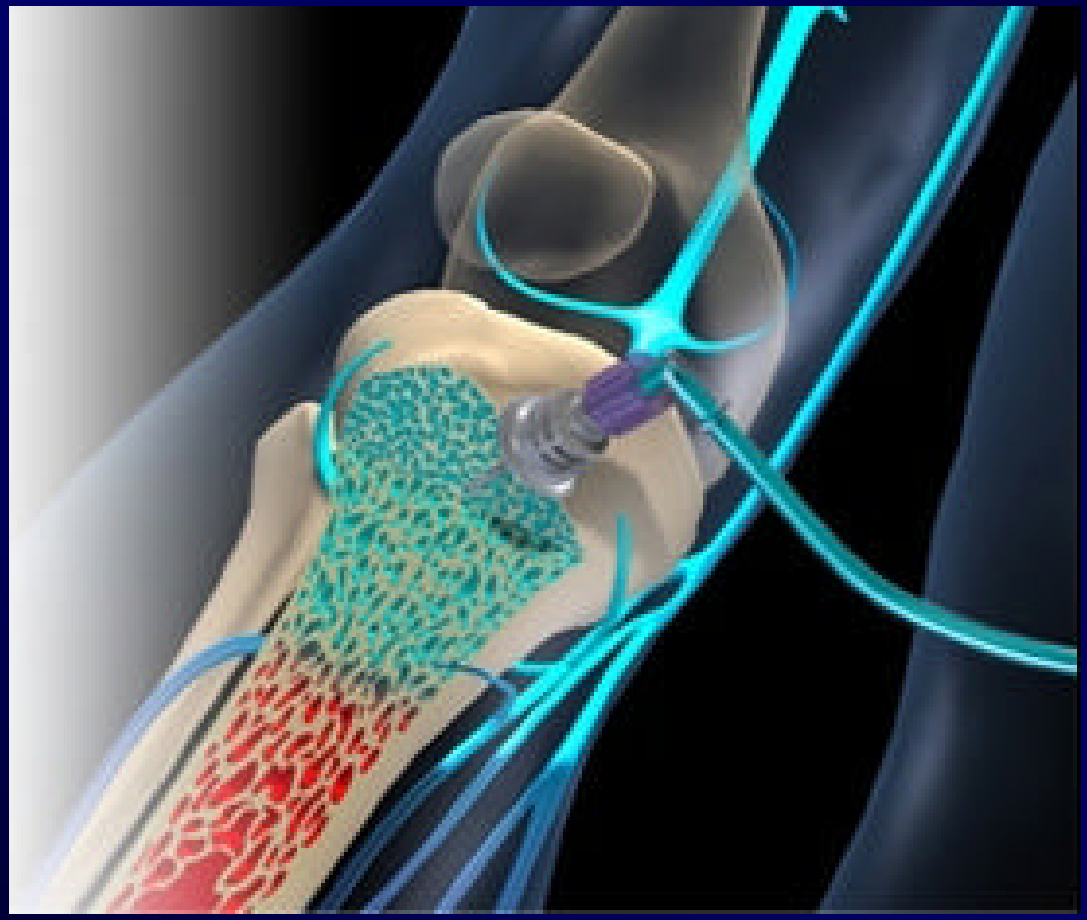
Designed for use in the vascular access skills practice station of the PALS course, this video demonstrates how to establish intraosseous (IO) access in critically ill or injured children.

The detailed video presentation covers:

- sites for IO infusion
- indications for IO access
- proper technique for placing an IO needle
- appropriate immobilization
- complications associated with IO access, and
- removal of the device.

In VHS or DVD format; 10 mins.

3/3/2007



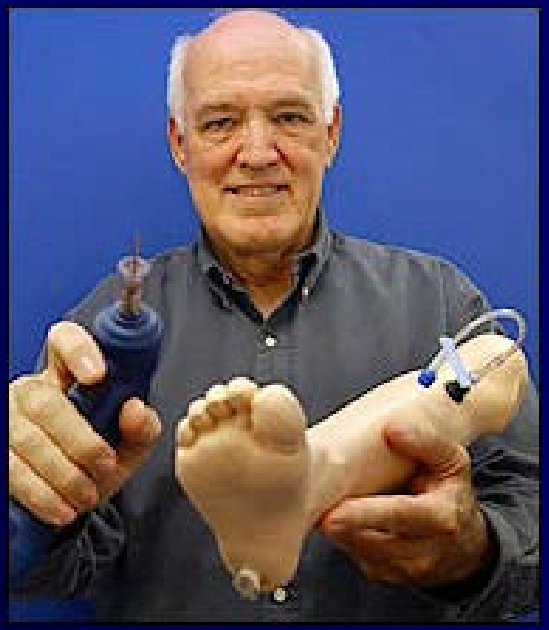
3/3/2007

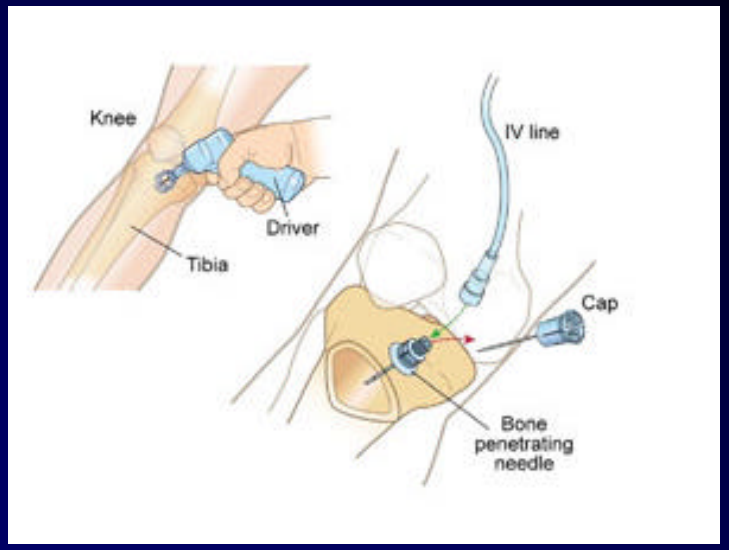
EZ-IO® by vidacare®

EZ-IO® Product System

For patients of all ages and weights

3/3/2007





3/3/2007

Central Line Alternative

Currently, when IV insertion is challenging in the emergency room or hospital setting, a physician's first instinct is to place a central line. However, new American Heart Association ACLS guidelines as well as numerous studies suggest that adult IO infusion provides venous access similar to that achieved by central lines faster, with less expense and lower complication rates. Additionally, throughout the ACLS protocols and algorithms, IO is paired with IV access and is recommended over central lines and ET tube drug administration for cases of cardiac arrest.

3/3/2007


BioTel
The Hidden Heart of EMS
BioTel EMS System supplies pre-hospital emergency medical services for over two hundred thousand people every year in the Dallas metro area.
(Click here for more info)
2007 Biotel Treatment Guidelines
Guidelines A - C
Guidelines D - R
Guidelines S - V
EMS research information
Resuscitation Outcomes Consortium (R.O.C.) Information
Links
BioTel E-Mail Links
D/FW FD's
D/FW Hospitals
Search & Site Map
Today is 3/3/2007
The time in Dallas is 8:00:00 AM
You Are Visitor Number
00019718
Site last modified 3 March 2007 Questions? Comments? Suggestions? E-mail BioTel here
©UTSW2007. All rights reserved. Website built and maintained by Rick LaChance, UT Southwestern Medical Center Dallas

3/3/2007

UTSW / BIOTEL EMS SYSTEM: APPENDIX M
PEDIATRIC INTRAOSSEOUS INFUSION PROCEDURE

INDICATIONS:

- Children < 8 yrs - in shock, cardiac arrest, unconscious or unresponsive to verbal stimuli AND: Unconscious or seriously ill with immediate need for venous access to administer fluids or drugs, when 1 or 2 attempts at peripheral venipuncture have been unsuccessful within 90 seconds.
- Proceed immediately to an IO if peripheral veins are NOT readily obtainable in the unconscious, seriously ill or injured pediatric patient.

MATERIALS:

1. Alcohol and Iodine Preps.
2. IV Infusion Set, with regular (macro) size tubing: this must be flushed and ready to go.
   a. If not, the needle may clot in the marrow cavity, making infusion impossible.
   b. This is even more critical than it is when starting a peripheral IV.
3. Intraosseous needle, assembled, with stylet in place.
4. Two 10 cc. syringes for aspirating bone marrow and flushing needle after insertion.
   a. One EMPTY syringe
   b. One filled with Normal Saline
5. Glucometer, Gauze rolls, tape.

CONTRAINDICATIONS:

Fracture of that extremity, Osteomyelitis, Bony lesion at site.

Potential access sites:

Proximal tibia
Humeral head
Distal tibia

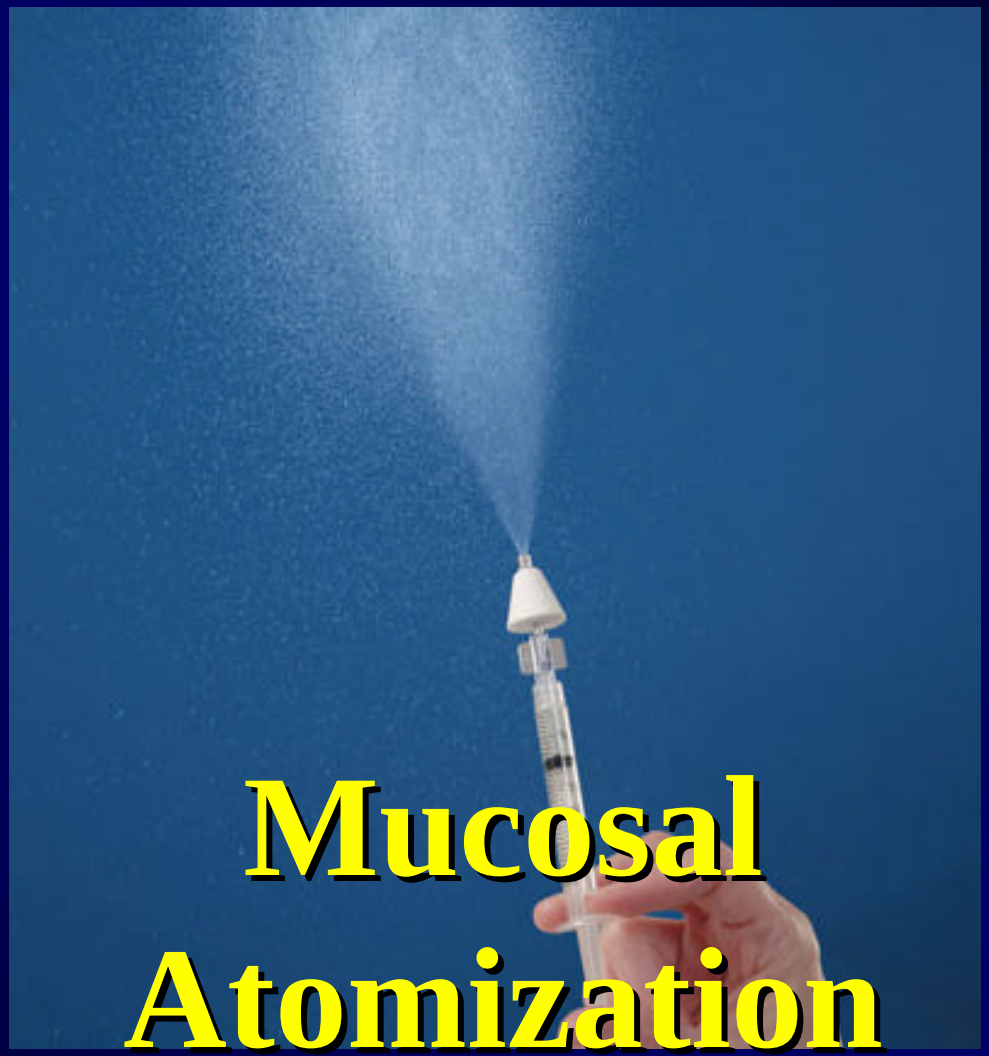
EZ-IO® by vidacare®

Media contact:
Tanya Orth
Townsend Inc. for Vidacare Corporation
torth@townsendinc.com
1.858.457.4888

Vidacare's EZ-IO® Product System Receives FDA Clearance for Distal Tibia Access

Body Site Access to Help EMS Personnel Treat Morbidly Obese Patients

3/3/2007



Mucosal Atomization Device

3/3/2007

For seizures (versed) and overdose (narcan)

3/3/2007

STANDING ORDER #122
Persistent Seizure Activity

This Standing Order is for the treatment of **Persistent seizure activity**. The Medic should perform a thorough primary survey, obtain a detailed history if possible, and **contact Medical Control as soon as possible** while carrying out these orders.

Assess ABC's- Airway, Breathing, and Circulation

For a pulseless patient, proceed to ACLS guidelines

Apply 100% oxygen via NRB (non-re-breather) mask to the seizing patient

Suction airway if necessary

Perform a glucose check if the patient has a history suggestive of Diabetes.
If the blood sugar is less than 60 (and no stroke suspected) follow Diabetic standing order

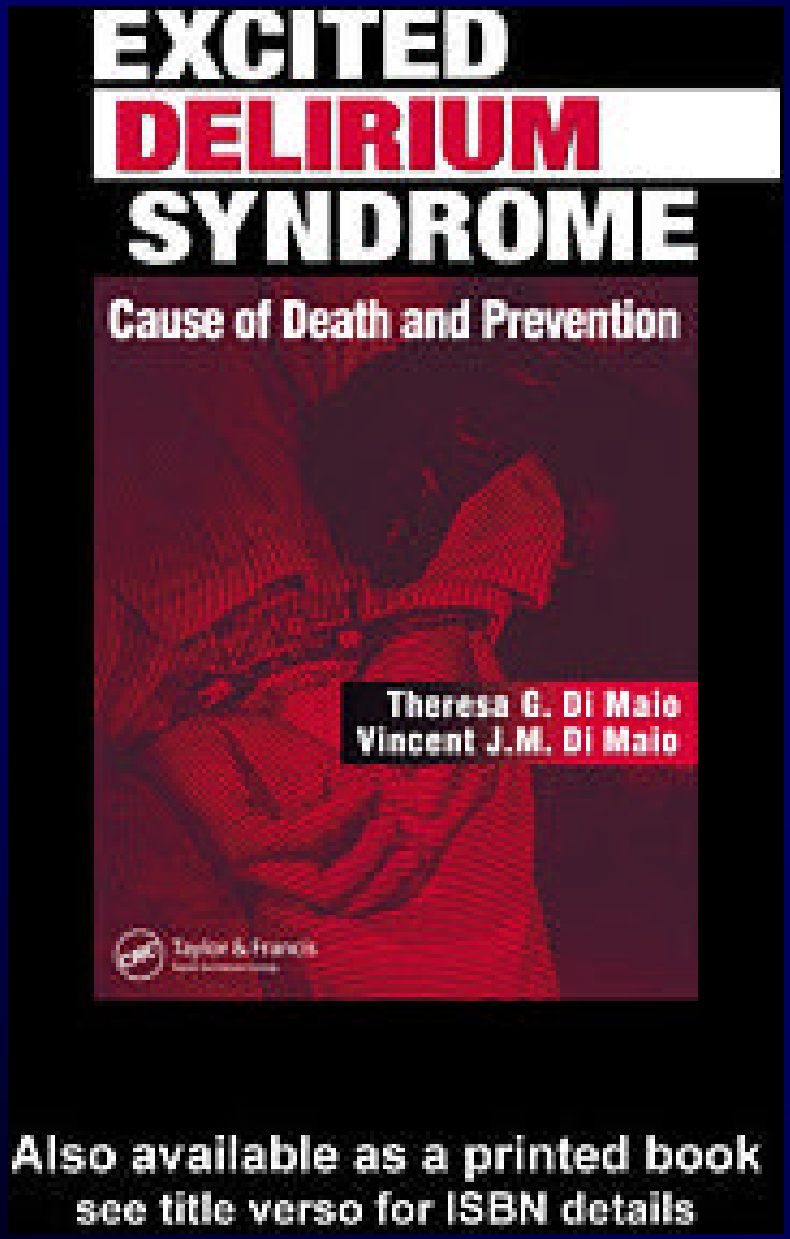
Use age based table to determine proper volume of Midazolam (Versed) for atomization

Patient age (yr)	Weight (kg)	IN Midazolam volume in ml* 5mg/ml concentration Midazolam volume	dose (mg)
Neonate	3	0.3 ml	0.6 mg
<1	6	0.4 ml	1.2 mg
1	10	0.5 ml	2.0 mg
2	14	0.7 ml	2.8 mg
3	16	0.8 ml	3.2 mg
4	18	0.9 ml	3.6 mg
5	20	1.0 ml	4.0 mg
6	22	1.0 ml	4.4 mg
7	24	1.1 ml	4.8 mg
8	26	1.2 ml	5.2 mg
9	28	1.3 ml	5.6 mg
10	30	1.4 ml	6.0 mg
11	32	1.4 ml	6.4 mg
12	34	1.5 ml	6.8 mg
Small teenager	40	1.8 ml	8.0 mg
Adult or full grown teenager	50 or more	2.0 ml	10.0 mg

* This volume is based on the calculated dose PLUS 0.12 ml dead space and rounded off to the next highest 0.1 ml. Slightly higher doses may be appropriate at the lower range of volume due to measurement difficulties and possible under dosing which may not stop the seizure.

3/3/2007

I take a position that we must not allow needlesticks to happen to our employees


EXCITED
DELIRIUM
SYNDROME
Cause of Death and Prevention
Theresa G. Di Maio
Vincent J.M. Di Maio
Taylor & Francis
Also available as a printed book
see title verso for ISBN details

3/3/2007

HEP C or HIV can ruin a life… …or many lives

The “Networking” of Hospitals”

3/3/2007

Trauma
Stroke
Chest Pain

3/3/2007

Pediatric Emergency Receiving Facilities

Will there be demonstrated a benefit from bypassing ALL local hospitals during pediatric emergencies??

3/3/2007

Pediatric Emergency Receiving Facilities

We don't know yet…

…but it will fall to EMS to carry it out…

Pediatric Emergency Receiving Facilities

This may be the hardest yet for us to prepare for…

3/3/2007

Pediatric Emergency Receiving Facilities

Airway

Ventilation

Vascular Access

Monitoring

3/3/2007

Is it possible for ALL emergency receiving facilities to maintain skills in pediatric resuscitation?

Reasons:

- *It happens rarely*
- *Vascular access*
- *Airway problems*
- *Dosages*

3/3/2007

Case #1

3/3/2007

You are called out for an 18 months old child who was having difficulty in breathing

On arrival the child is bright-eyed, alert, playful, respirations 44, chest "congested"; he had been coughing heavily just before Mom called…

Diagnosis? Treatment?

3/3/2007

Case #2

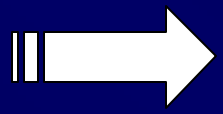
3/3/2007

You respond to the scene of an MVC
car vs. 4 y/o girl

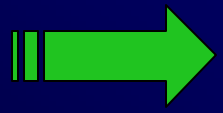
You find the child with altered mental status, rapid respirations, a weak, rapid radial pulse, and tenderness to the anterior chest and abdomen

Diagnosis? Treatment?

Signs of Shock

Early 

Weak, thirsty, lightheaded
Pale, then sweaty
Tachycardia
Tachypnea
Diminished urinary output

Late 

Hypotension
Altered LOC
Cardiac arrest
Death

Blood pressure =

(Cardiac output) x
(Volume) x
(Peripheral resistance)

Shock

Cardiogenic

- Rapid pulse
- Distended neck veins
- Cyanosis

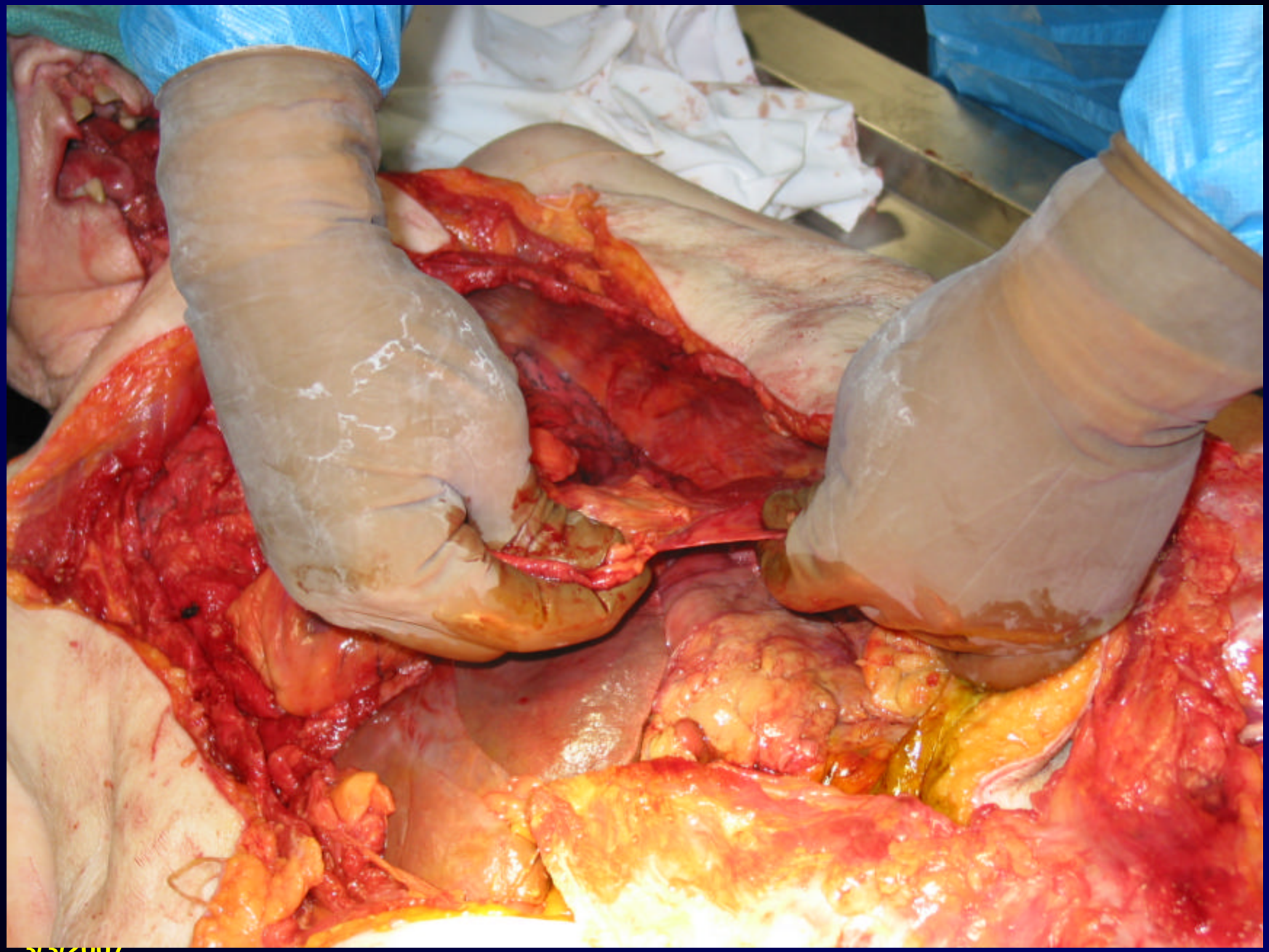
Volume Loss

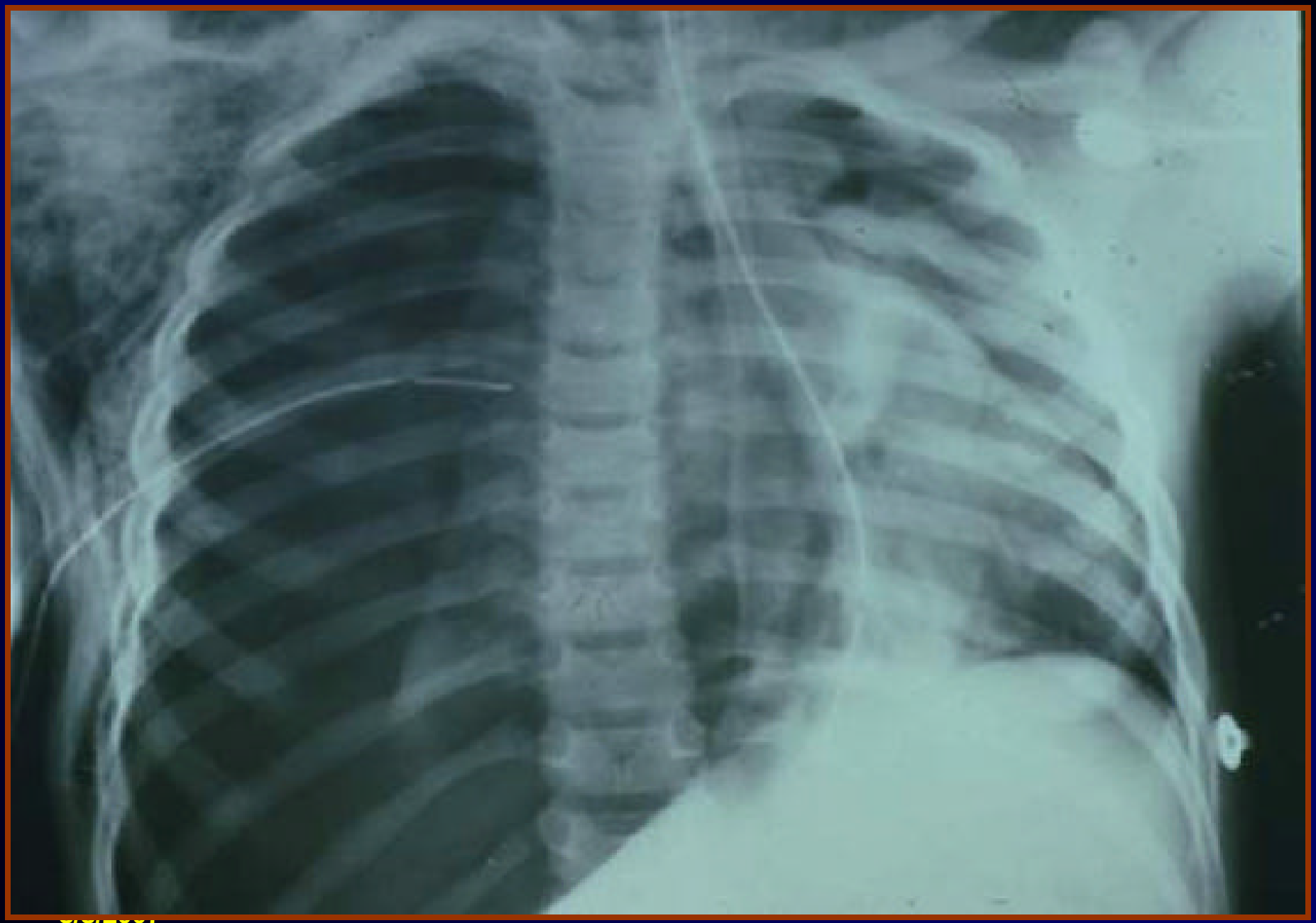
- Rapid pulse
- Flat neck veins
- Pale

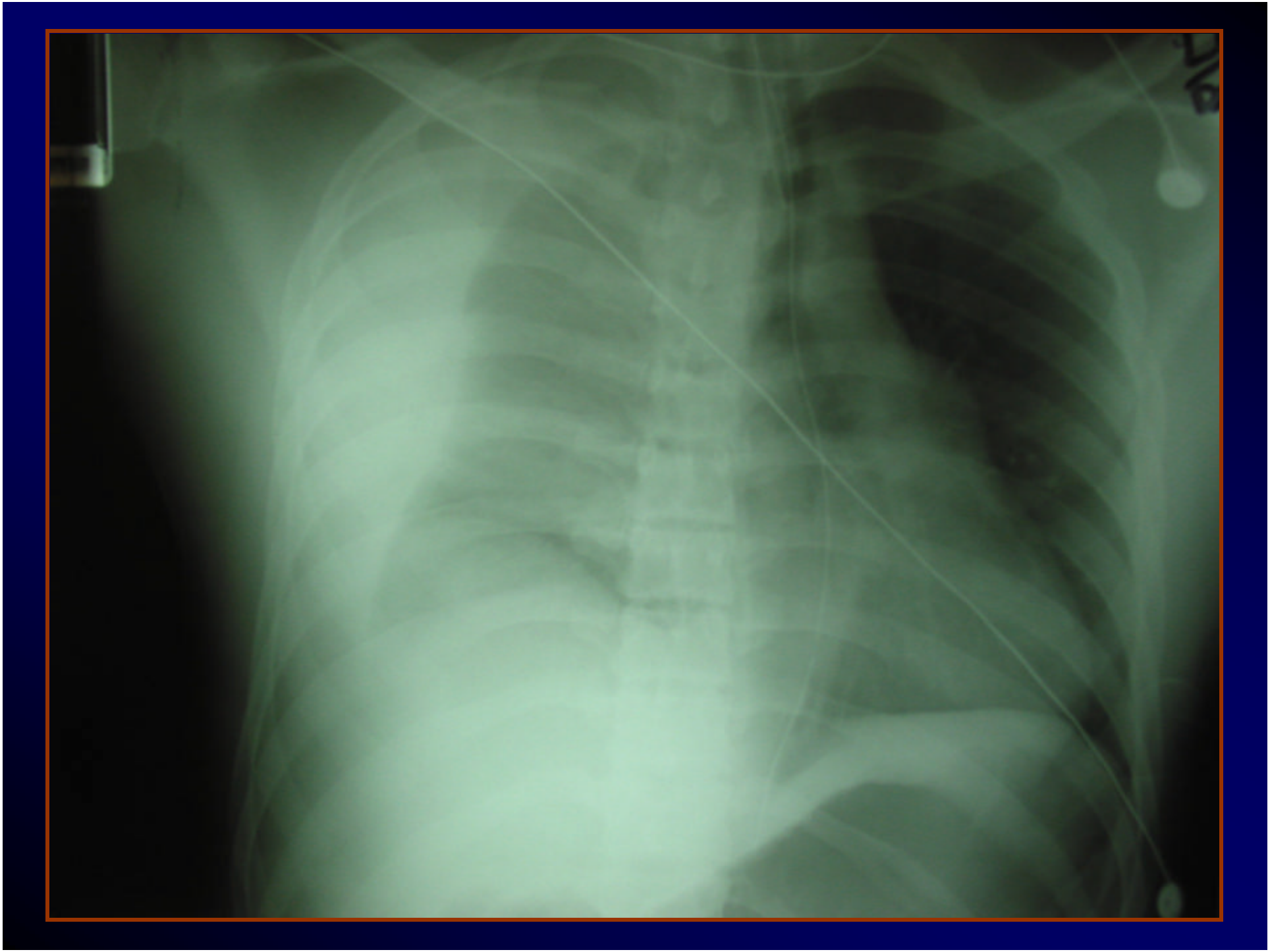
Vasodilatory

- Variable pulse
- Flat neck veins
- Pale or pink

3/3/2007


3/3/2007





3/3/2007

Looking further, you find the following clinical findings

Flat neck veins
Midline trachea
Diminished breath sounds on the right side with dullness to percussion

3/3/2007

Hemorrhagic Shock associated with Bradycardia

1: J Trauma. 1998 Sep;45(3):534-9. Related Articles, Links

LWWonline Lippincott Williams & Wilkins

Relative bradycardia in patients with traumatic hypotension.

Demetriades D, Chan LS, Bhasin P, Berne TV, Ramicone E, Huicochea F, Velmahos G, Cornwell EE, Belzberg H, Murray J, Asensio JA.

Department of Surgery, University of Southern California, Los Angeles 90033, USA.
demetria@hsc.usc.edu

CONCLUSION:

Relative bradycardia in hypotensive trauma patients is a common hemodynamic finding.

Mortality among tachycardic patients was more predictable than among bradycardic patients…

The presence of relative bradycardia in some subgroups of patients with severe injuries seems to be associated with better prognosis than the presence of tachycardia.

On the Cutting Edge…

3/3/2007

1: Crit Care Med. 2007 Feb 15; [Epub ahead of print]

Beneficial effects of terlipressin in prolonged pediatric cardiopulmonary resuscitation: A case series.

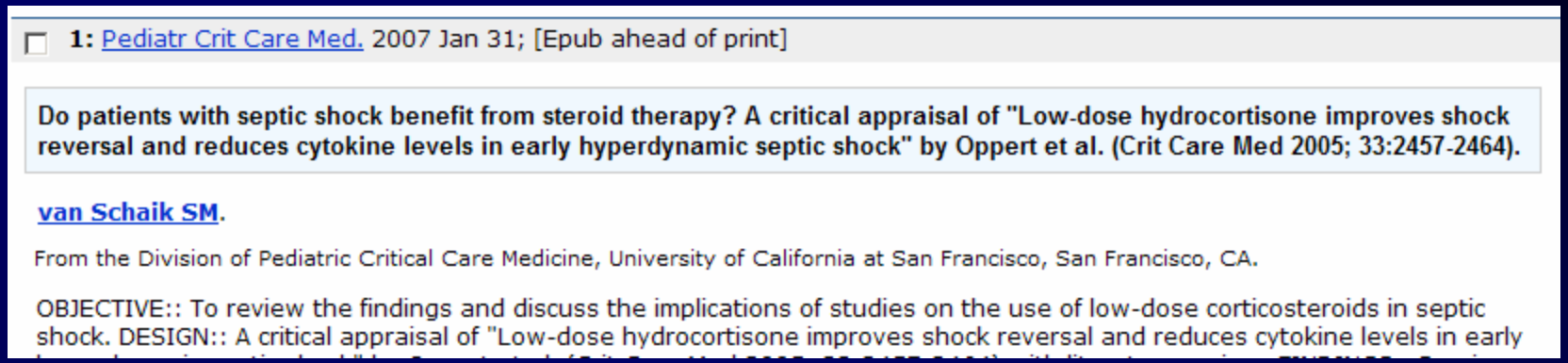
Matok I, Vardi A, Augarten A, Efrati O, Leibovitch L, Rubinshtein M, Paret G.

From the Department of Pediatric Critical Care Medicine, Safra Children's Hospital, Sheba Medical Center, Tel Hashomer, Israel (IM, AV, AA, OE, LL, MR, GP); Epidemiology and Health Services Evaluation Department, Faculty of Health Sciences, Ben Gurion University of the Negev, Beer-Sheva, Israel (IM); and Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel (AV, AA, OE, GP).

OBJECTIVE:: Arginine vasopressin was found in experimental and clinical studies to have a beneficial effect in cardiopulmonary resuscitation. The American Heart Association 2000 guidelines recommended its use for adult ventricular fibrillation arrest, and the American Heart Association 2005 guidelines noted that it may replace the first or second epinephrine dose. There is little

The combination of terlipressin to epinephrine during cardiopulmonary resuscitation may have a beneficial effect in children with cardiac arrest.

3/3/2007



1: Pediatr Crit Care Med. 2007 Jan 31; [Epub ahead of print]

Do patients with septic shock benefit from steroid therapy? A critical appraisal of "Low-dose hydrocortisone improves shock reversal and reduces cytokine levels in early hyperdynamic septic shock" by Oppert et al. (Crit Care Med 2005; 33:2457-2464).

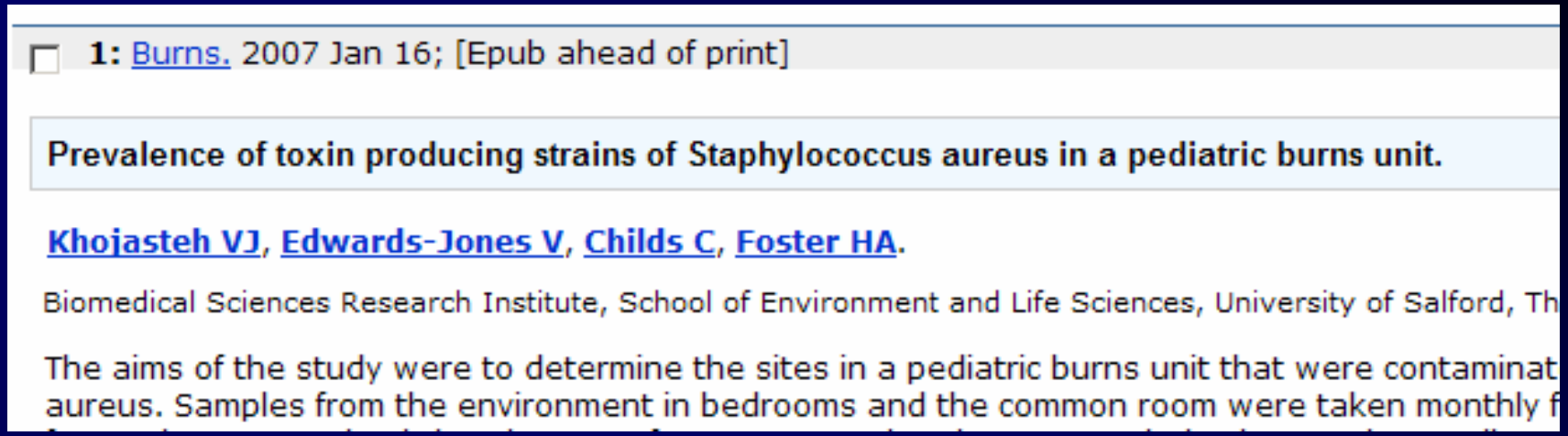
van Schaik SM.

From the Division of Pediatric Critical Care Medicine, University of California at San Francisco, San Francisco, CA.

OBJECTIVE:: To review the findings and discuss the implications of studies on the use of low-dose corticosteroids in septic shock. DESIGN:: A critical appraisal of "Low-dose hydrocortisone improves shock reversal and reduces cytokine levels in early

Pediatric patients in septic shock may benefit from steroid therapy

3/3/2007



1: Burns. 2007 Jan 16; [Epub ahead of print]

Prevalence of toxin producing strains of Staphylococcus aureus in a pediatric burns unit.

Khojasteh VJ, Edwards-Jones V, Childs C, Foster HA.

Biomedical Sciences Research Institute, School of Environment and Life Sciences, University of Salford, Th

The aims of the study were to determine the sites in a pediatric burns unit that were contaminat
aureus. Samples from the environment in bedrooms and the common room were taken monthly f

The results show that airborne transmission may be a route for infection by S. aureus and is responsible for contaminating the environment.

3/3/2007

1: Turk J Pediatr. 2006 Oct-Dec;48(4):313-22.

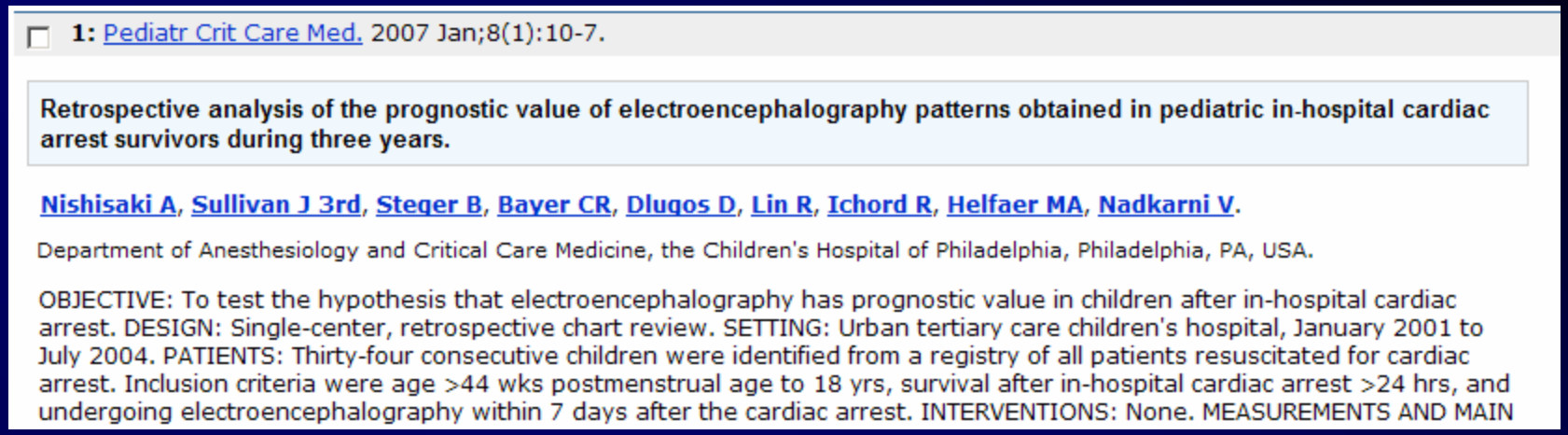
Factors influencing outcome of inpatient pediatric resuscitation.

Akcay A, Baysal SU, Yavuz T.

Department of Pediatrics, Pamukkale University Faculty of Medicine, Denizli, Turkey.

The aims of this study were: 1) To define the rate of long-term survivors (LTS) after ca
children; 2) To identify the predictors of survival in pediatric resuscitation; and 3) To as

Less than 5 minutes' duration of CPR and reactive pupils at the onset of cardiopulmonary arrest (CPA) were the most important factors that predicted long term survival.



1: Pediatr Crit Care Med. 2007 Jan;8(1):10-7.

Retrospective analysis of the prognostic value of electroencephalography patterns obtained in pediatric in-hospital cardiac arrest survivors during three years.

Nishisaki A, Sullivan J 3rd, Steger B, Bayer CR, Dlugos D, Lin R, Ichord R, Helfaer MA, Nadkarni V.

Department of Anesthesiology and Critical Care Medicine, the Children's Hospital of Philadelphia, Philadelphia, PA, USA.

OBJECTIVE: To test the hypothesis that electroencephalography has prognostic value in children after in-hospital cardiac arrest. DESIGN: Single-center, retrospective chart review. SETTING: Urban tertiary care children's hospital, January 2001 to July 2004. PATIENTS: Thirty-four consecutive children were identified from a registry of all patients resuscitated for cardiac arrest. Inclusion criteria were age >44 wks postmenstrual age to 18 yrs, survival after in-hospital cardiac arrest >24 hrs, and undergoing electroencephalography within 7 days after the cardiac arrest. INTERVENTIONS: None. MEASUREMENTS AND MAIN

Electroencephalography patterns during the initial 7 days after in-hospital cardiac arrest were associated with neurologic outcome in children.

3/3/2007

1: J Forensic Sci. 2007 Jan;52(1):183-8.

Infant death due to air embolism from peripheral venous infusion.

Sowell MW, **Lovelady CL**, **Brogdon BG**, **Wecht CH**.

Department of Radiology, University of South Alabama Medical Center, Mobile, AL, USA.

Air collections were found in both venous and arterial circulations, including the splenoportal system.

3/3/2007

Summary Thoughts

3/3/2007

The emerging of a profession:

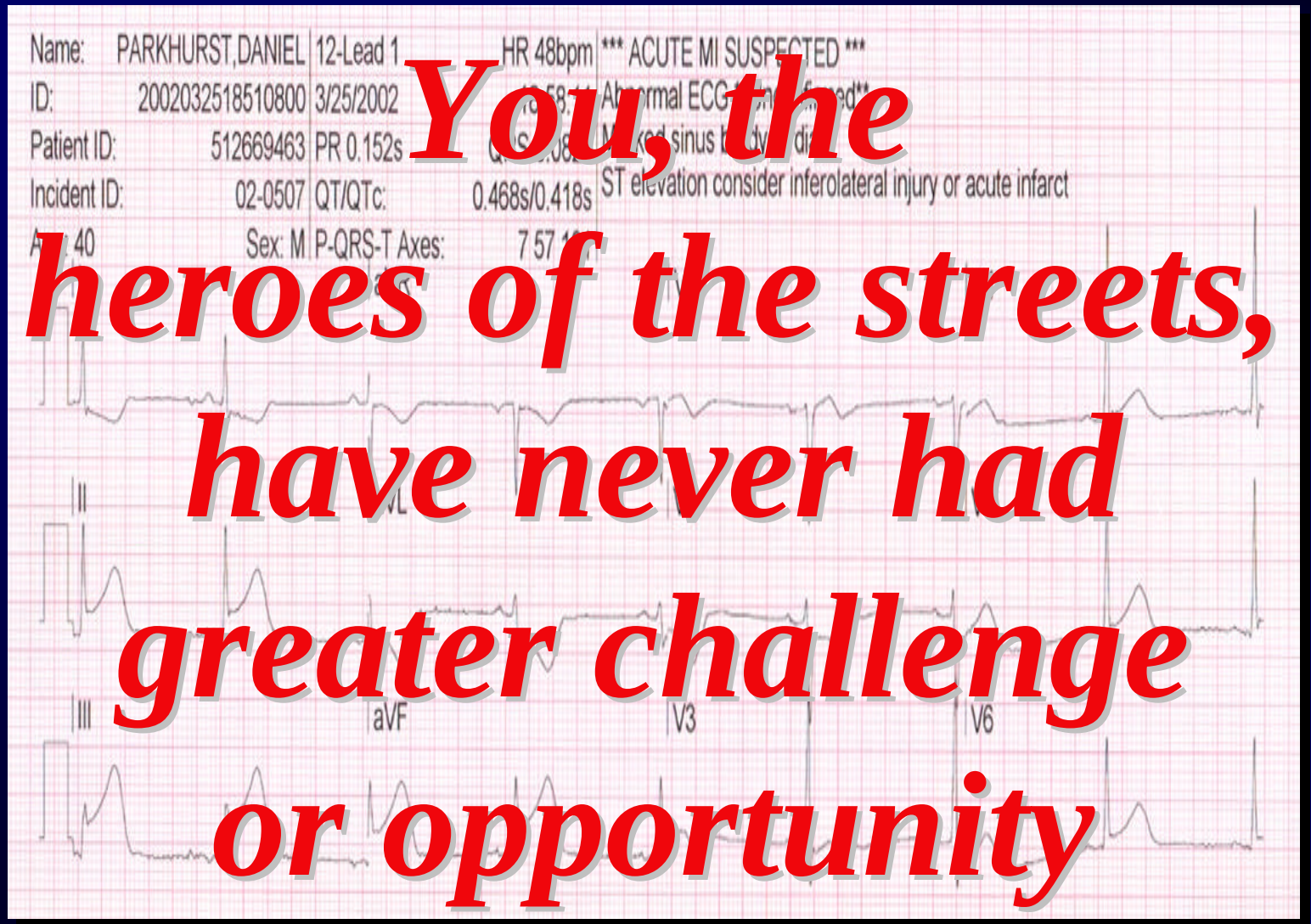
3/3/2007

The End of the Beginning

3/3/2007

The End of the Beginning

- Innocence is over
- You are COMPLETELY accountable for what you do
- Becoming a professional requires you to always be able to explain your actions
- EMS is ONLY and ALWAYS about patient care



You, the heroes of the streets, have never had greater challenge or opportunity

3/3/2007

Thank you for your kind attention!

3/3/2007

drray@doctorfowler.com

www.emergencymedicine.ws

"the emergency medicine website"

3/3/2007

3/3/2007