Agitated Delirium

The New EMS Dilemma
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Objectives

At the completion of this CE module, the Paramedic will be able to:

• Describe agitated delirium and the pathophysiology that can lead to sudden death.
• List factors that should be taken into consideration when using physical restraint.
• Describe the management of the agitated delirium patient.
Case Presentation
Case Presentation

Skin: warm and dry
Pupils: midrange - reactive
No signs of trauma

En route:
• Less combative
• Decrease in LOC
Case Presentation

Upon arrival at the hospital, the patient has deteriorated into cardiopulmonary arrest.
Agitated Delirium

Statistically speaking...

- Summer months
- High heat / humidity
- High body mass index
- Stimulant use
Agitated Delirium

- Sudden bizarre behavior
- Hyperactivity
- Combativeness
- Super-human strength
- Paranoid delusions
- Shouting
- Hallucinations
- Hyperthermia
Signs of Agitated Delirium

- Inability to concentrate
- Extreme restlessness
- Inability to remain still
  - Flailing
  - Diaphoresis
- Flushed skin
- Tachycardia, sometimes extreme
One Case

A well kempt 20’s male presented to the ER wildly psychotic, flailing, diaphoretic, flushed, with a pulse of 170

30 mg IV Ativan later he began to be calmed
What Causes Sudden Death in Agitated Delirium?
Associated with all sudden death cases was struggle by the victim with forced restraint and cessation of struggling with labored or agonal breathing immediately before cardiopulmonary arrest.

Ventricular Tachycardia found in 1 of 13 patients who had experienced sudden death.

Ventricular fibrillation was found in none of the patients!
What Does This Mean?
PEA and Asystolic Arrests are often due to shock or hypoxia
This means that these people might have been saved.
Positional Asphyxia

Hobble position makes it difficult for the chest wall to expand and the diaphragm to contract during inhalation.
Positional Asphyxia

Restraint asphyxia...

- involves the “take-down” of a violent individual
- arms are held behind the back
- chest is frequently compressed
- patient lies or is transported in prone position
Force on the Chest Wall prevents Respiratory Excursion
Why does this happen?
Because these patients are JERKS!
The violence of their behavior can only be understood by seeing it happen.
What do we do?
Positional Asphyxia

LA County: 216-Hobble restraint
- majority found prone by EMS
- all struggled with police

10% had witnessed cardiac arrest
- all unanticipated
- all developed a labored breathing
- All underwent an aggressive resuscitation effort
- none survived
10% had witnessed arrests

- All unanticipated
- All with labored breathing
- All had aggressive resuscitation
- None survived
Positional Asphyxia
19 y/o Kid with a knife

-Kid already in police car
-Nice cop, heading out
-Kid in back, arms behind him
-Arms in cuffs
Positional Asphyxia

Hobble position as cause of death is controversial...

- Effects on the respiratory function of healthy volunteers is inconclusive
- Healthy volunteers had decreased pulmonary function values, but no hypoxia or hypercarbia
- Similar results were observed in patients sprayed with oleoresin capsicum spray
Positional Asphyxia

Hobble Restraint
The Problem is…

These patients can be SO VIOLENT
Metabolic Acidosis

Lactate
Rhabdomyolysis
Rhabdomyolysis

- Muscle cells disintegrate

- Release toxic components and electrolytes
  - These substances damage the kidneys
  - Contribute to dangerous electrolyte imbalances
  - Alter acid-base balance of the bloodstream

- Fluid accumulates in the damaged muscle
Hyperkalemia

- Released from the inside of muscle cells
- Can induce cardiac arrhythmias
- Must be treated if arrhythmias occur
Serum potassium levels

A. normal (3.5 - 5.0 mEq/L)
B. about 7.0 mEq/L
C. 8.0 - 9.0 mEq/L
D. >10.0 mEq/L

Changes in the ECG in lead II caused by hyperkalemia
Cardiovascular Stress

If oxygen levels are insufficient, anaerobic metabolism begins with its resultant increase in the production of lactic acid
Management of Agitated Delirium
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Appropriate restraint is critical... and difficult.
Management of Agitated Delirium
Physical restraint, however, can lead to sudden death in otherwise healthy patients, possibly as a result of positional asphyxia, severe acidosis, or a patient's excited delirium.
Keep in mind your patient may become hypoxic and arrest even if they are a jerk, dangerous, and crazy, you still have a patient to care for... and, a patient for which you’re liable...
Spit Net Hood - Spit Hood - SpitNet Hoods - Prisoner transport hood
The two most popular styles of spitnet Hoods, spit net hoods and Prisoner transport hoods.
www.securityandsafetysupply.com/department-supplies/transport-2.html - 39k -
Cached - Similar pages

Comade, Inc. Spithoods, Spit Net, Spit Hood, Spit Sock, Spithood ...
Spithoods are a compact, inexpensive device used to protect officers, hospital staff, and
firemen from infectious disease.
www.spithood.com/ - 12k - Cached - Similar pages

JS Online: Police admit errors in suffocation
Klobukowski should have known the device was not a spit hood, the letter says ... Sheridan
began spitting, and Klobukowski put the escape hood over his head ...
www.jsonline.com/news/ozwash/jan05/293208.asp - 52k - Cached - Similar pages

BadJocks.com Archives - Week of February 19, 2006
something called a "spit hood." Later Prochaska apologized to the officers and admitted ...
(Albuquerque Tribune) At right, a picture of a spit hood in use. ...
badjocks.com/archive/2006/fab1906.htm - 48k - Cached - Similar pages

 Sheridan report outlines MPD errors, fixes
The internal investigation found Klobukowski didn't maintain competency in the use of a spit
hood. And while he "did not willfully mistreat Matthew Sheridan ...
www.gmtoday.com/news/local_stories/2005/January_05/01172005_06.asp - 27k -
Cached - Similar pages

NIK TranZport Hood
Ideal for prisoner transport, the Spit Net protects against spitting and biting. Note: The
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www.red-diamond-unif.com/tranzport-hood.htm - 6k - Cached - Similar pages
TranZport 70

The TranZport is a patented, medical grade, head and neck restraint device that is designed for use by law enforcement officers as an alternative to handcuffs or restraints for transporting people. This device is designed to be used in cases where there is a potential for violent or elusive behavior.

The TranZport is made from durable and high-quality materials that are able to withstand the rigors of use in the field. It is also designed to be easy to use and can be quickly and easily applied in the field. The TranZport is a reusable device that can be used multiple times.

The TranZport is designed to be a comfortable and effective alternative to traditional restraints. It is designed to be easy to put on and take off, and it is comfortable to wear for extended periods of time.

The TranZport is a must-have for any police officer who is responsible for transporting people. It is a reliable and effective device that can be used to ensure the safety of officers and the public.

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The Spit Net 100 Units - 9200-100

The Spit Net affixes under the arms for additional security while transporting threatening subjects. Ideal for prisoner transport, the Spit Net protects against spitting and biting

100 Units

$670.00
On June 19, Klobukowski had been taking Sheridan to the Mequon police station after Sheridan was arrested for possession of drug paraphernalia during a traffic stop. On the way, police said, Sheridan began yelling and kicking the squad car doors. Klobukowski pulled off I-43 at Good Hope Road and called for help to better restrain Sheridan. Police officers from Bayside, Fox Point, and River Hills responded. Sheridan began spitting, and Klobukowski put the escape hood over his head.
Management of Agitated Delirium
Management of Agitated Delirium

Same sex EMS personnel should accompany restrained patients
Management of Agitated Delirium

Always assess for and rule out correctable causes of delirium, such as hypoglycemia or hypoxia.
Management of Agitated Delirium
Management of Agitated Delirium

Perform a blood glucose analysis using a glucometer and a small sample of capillary blood
Case: D-Stick to a Fire Extinguisher
Another Case

An agitated 40’s male was turned over to medics by cops Extremely paranoid Medics took him to back of rig where he finally laid on the stretcher with a pulse of 170

When they attempted a D-Stick, he became wild, ultimately setting off the fire extinguisher
Another Case

Everyone in the rig comes boiling out the back door, covered in the extinguisher dust, coughing and retching.

Cops say, “Are you going to call for a backup unit?”

Medic says, “HE’s GOOD TO GO!”

Cops transport the guy in their car. He dies enroute to the police station.
Management of Agitated Delirium

Fowler’s Law of Agitated Delirium:
“Give ‘em Benzo’s until they shut up”
How Much Sedation is Enough???

A BUNCH!!!
How to give Sedation?

I had recently heard about a big city protocol for I.M. Versed 5 – 10 mg lateral thigh.
How to give Sedation?

I said to myself, “I’ll have to give that a try sometime in the ER before I put it in the field”
How Much Sedation is Enough???

25 male on methamphetamine and in heroin withdrawal

Well, actually, he did yawn a couple of times between screaming
How Much Sedation is Enough???

Just ALWAYS be VERY CAREFUL with Sux with a patient who may be hyperkalemia...

...think non-depolarizing agent
These people can be VERY VERY VERY HOT!

>= 105 degrees!!!
Management of Agitated Delirium

Cooling them off is critical:
• IV fluids
• Limit their activity
• Ice packs in groin and axilla
Hypoglycemia must be watched for and treated to prevent arrhythmia or continued delirium.
Hyperkalemia is treated with IV fluids, calcium, bicarbonate, and dextrose (plus insulin if you have it).
Haloperidol and droperidol, the neuroleptics most frequently used for restraint, can cause serious side effects such as extrapyramidal symptoms or QTc (QT interval corrected for heart rate) prolongation.
How to give Sedation?

P.O. – Nope!
I.M. – Sure!
I.V. – Okay but dangerous
I.O. – Okay but dangerous
P.R. – Ughhhh....stinky
I.N. – ????????
The Moral Imperative

Holding a wild, psychotic, perhaps virus-laden, struggling patient down to start an I.V. is asking for trouble
The Moral Imperative

We must herein vow that we will NOT let any personnel suffer a needle stick
5 to 10 mg of Versed given intranasally may be sufficient to bring some A.D. patients under control... but it may take more...
Unfortunately, the evidence to guide pharmacologic management of acute agitation in the elderly is limited.
Summary

The Management of Agitated Delirium presents one of the biggest challenges that we face in the history of EMS, and it requires careful coordination and cooperation among all responding agencies.
Summary & Links

Biotel Protocols
Diazepam
Altered Level of Consciousness
Seizure
Stroke
Poisoned Patient & Overdose

www.biotel.ws
References

Questions or Comments?

www.rayfowler.com