

Triple cases of acute stroke, acute coronary syndrome & gunshot injury in an emergency

Dr. Devendra Richhariya, Associate Director, Emergency & Trauma care, Medanta-The Medicity, Gurgaon, India

Dr. Rajesh Verma, Associate professor, Forensic Medicine, SMS Medical College, Jaipur, India

Dr. Vivekanshu Verma, Associate consultant, Emergency & Trauma care, Medanta-The Medicity, Gurgaon, India

Dr. Jidhin Janardhan, Emergency Resident, Emergency & Trauma care, Medanta-The Medicity, Gurgaon, India

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Corresponding author

Dr. Vivekanshu Verma

Associate consultant, Emergency & Trauma care,
Medanta-The Medicity, Gurgaon, India

Phone: +919810497871

Email: vivekanshu@yahoo.co.in

Abstract

Acute stroke is one of the most dreaded neurological emergencies, similarly, acute coronary syndrome is one of the most dreaded cardiac emergencies and last but not the least, Gunshot is one of the most dreaded traumatic emergencies in healthcare setup all over the world (1).

Keywords: acute stroke; acute coronary syndrome; gunshot injury.

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Introduction

Heart, Lung & Brain: They are the 3 vital organs, necessary for sustaining life every second.

- Mode of Dying in every medical emergency is Cardio-Pulmonary arrest (1).
- Mode of saving is Cardio Pulmonary Resuscitation (2).

So it creates a huge challenge for doctors when a patient land up in emergency compromising all 3 vital organs- Heart, Lung & Brain; at the same time.

Case History

A 76 years old educated male villager, Diabetic, Hypertensive, chronic Hooka smoker since last 30yrs, C/o Chest pain of sudden onset over the retrosternal region since midnight at home. Patient was admitted to Small Hospital, Uttar Pradesh in midnight & underwent ECG -? NSTEMI (Non-ST Elevation MI) Cardiac enzymes- Positive for Trop T. Patient received first aid as per prescription -Aspirin, Atorvastatin, Anti-anginal & Analgesics. The patient was referred to further management at our cardiology Centre. On examination of patient - Conscious Co-operative

Elderly Male with Ongoing chest pain in the Breathless state on Oxygen support.

Prioritizing in Managing Case of Injuries & illnesses in ER

- **Primary survey- ABCDE (3)**
- A- Airway & C spine - able to talk with slurred voice – patent,
- B- Respiratory Distress, Air entry nil in Right side- dull on percussion, Tachypnea, RR= 34/min; SPO2=90% on Oxygen by face Mask;
- C- Circulation & Hemorrhage control – Hypertension, BP=160/90mmHg, HR= 60/min, Heart sounds- S1, S2 audible, ECG= Sinus rhythm.
- D- Disability- GCS-15/15, Hemiplegia & slurring speech
- E-Exposure -Blood stain on bed-sheet over trunk region while Shifting on the bed from the trolley. Log roll was required.

- **Bedside-** USG chest, Echo, ABG, Card Test, PT/INR, Chest X-ray, & CT Head.
- The patient denied any history of fall/ trauma/ loss of consciousness.

D/D of chest pain, SOB & left Hemiplegia- Triple Case – affecting Tripod of Life- Heart, Lung & Brain

- **Acute Coronary Syndrome** - chest pain & card test- When a bullet causes myocardial infarction (4).
- **Acute Brain Stroke-** Thromboembolic stroke due to injury (5).
- **Lung Trauma- Pulmonary thromboembolism-** chest pain, Shortness of breath (6).
- Right-sided Hemothorax- causing hemorrhagic shock (3).
- Gunshot -?spine injury causing hemiplegia (7).

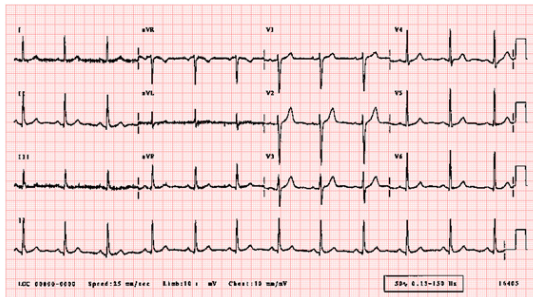


Fig 1. 12 Lead ECG of patient



Fig 2. CT Scan of the patient

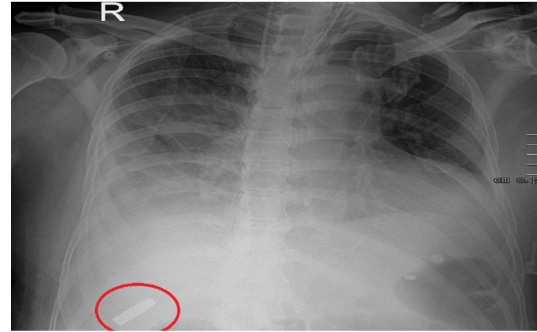


Fig 3. Chest X-ray of patient



Fig 4. Log roll to examine back and spine

Managing Triple Case of Injuries & illnesses in ER as per ATLS (Advance Trauma Life support) (3) & ACLS (Advance Cardiac Life support) (2) & AHA-Stroke guidelines 2015 (8):-

- ER Intervention - Chest tube insertion & draining Hemothorax, sealing bullet entry wound with a sterile dressing, Urgent Blood transfusion.
- Secondary Survey- Head to Toe Exam (3),
- -AMPLE History- DM, Hypertension, smoker;
- -CECT chest & Abdomen ruled out any bony injury, no spinal injury.
- Hemostasis by administering Tranexamic acid (Hemostatic agent).
- Admitted to ICU - Neurologist, Cardiologist, Spine Surgeon, Thoracic Surgeon, GI Surgeon.
- Heparin infusion & Antiplatelets started after hemostasis of track of gunshot wound by surgeons.
- MLC intimation to police in spite of denial by patient's son & attendants- for Gunshot injury.

Discussion

The patient first got injured from a gunshot in the back of the chest, traumatic injury near

vessels of the heart, thus causing thromboembolic showers of clotted blood to heart & brain, leading to symptoms of acute stroke & ACS. But thrombolysis of stroke is contraindicated in patients with bleeding wound, and since patient reached Hospital after window period of stroke thrombolysis, so the patient was managed conservatively & discharged on request on antibiotics. The patient had Medclaim insurance for critical illness.



Fig 5. Dilemma: Who will pay the Hospital Bills?

- Medclaim- Stroke & CAD (9)
- Accident claim- Trauma
- Accused- pay compensation for damages to victim (1)
- Victim patient's family
- The hospital provides free of cost care to acute trauma as per the Recent Law amendment for good Samaritans in acute trauma cases (1).
- (CSR)Corporate Social Responsibility- since the patient was admitted to a corporate Hospital (1).

Results

Patient was denied insurance cover by Medclaim company for acute stroke, as it is not an involuntary risk but as a result of an act of voluntary harm to victim patient by shooting a gun by the accused (9). So patient's family paid the Hospital bills & applied in criminal court for claims from accused, who shot firearm on the patient. Since the patient had received first aid in another hospital, so no role of Corporate Social Responsibility in advanced care, until the patient is BPL (Below Poverty Line) card holder, which he was unfortunately not.

Conclusion

Acute ischemic stroke with underlying cerebral thrombosis, is reversible by thrombolytic drugs if administered within the window period of 3-4.5 hours of onset of symptoms (8). Similarly, acute coronary syndrome with underlying coronary thrombosis is reversible by thrombolytic if administered within the window period of 12 hours (2). But if the patient suffers the thromboembolic phenomenon due to traumatic injury like gunshot, fractures or major polytrauma, then quick & thorough investigations with timely specialist's consultation can save the life of patient & maintain his quality of life in complicated cases (3).

Conflict of Interest: Nil.

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