Poster Presentations—Theme 9: Miscellaneous

(139) Vehicular Traffic Volume Versus Road Traffic Accident on a Major Nigerian Highway: A Case Study with SAVAN

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Introduction: For a low motorized country (LMC), Nigeria has a record high number of road traffic accidents (RTAs) compared to other similar countries. Generating data on traffic volume is the focus of this research, since it is a first stage to planning and developing road safety and emergency medical services in Nigeria. Our field work revealed the daily variation in vehicular traffic volume. This study identifies peak periods of vehicular traffic with associated RTAs. The medical emergency response preparedness of the rural community also was evaluated.
Methods: A physical count of vehicular movement was recorded for 14 hours daily for 30 days by a Save Accident Victims Nigeria (SAVAN) volunteer. Police records of RTAs in 12 calendar months also were examined. Accident records of health facilities located along the highway also were examined.
Results: An average of 3,522 motor vehicles traveled eastwards daily, while 3,420 traveled westwards daily on the Benin-Asaba dual carriage way. Vehicular traffic movements in both directions were at their levels on Fridays. The number of RTAs peaked on Tuesdays, Wednesdays, and Fridays. The RTAs occurred during peak vehicular traffic movement on the Benin-Asaba dual carriage way.
Conclusions: There is a positive relationship between vehicular traffic volume and RTAs. Hospital records show high admission rates during peaks of RTAs. Most deaths from RTAs occur due to delay in rescue operations. Emergency medical services are absent even on very busy Nigerian highways.
Keywords: emergency medical services; low motorized country; Nigeria; road traffic accidents; vehicles
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(140) Pilot Study Describing Use of Ultrasound to Assess Acute Fracture Reduction for Future Application in the Austere Environment

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Introduction: Recent studies have addressed the ability of the use of ultrasound in the emergency department to diagnose fractures. The purpose of this pilot study is to assess the ability of the uuse of ltrasound to assess in "real-time", the success of fracture reduction, and to address the possibility of extending the use of ultrasound into austere, remote environments.
Methods: A convenience sample of five people with acute fractures (three radial, one phalanx, and one metacarpal) presenting to an emergency department was used. A Sonosite Titan was used to assess post-reduction angulation and alignment. Alignment was reconfirmed with the use of a C-arm and plain radiography.
Results: The use of ultrasound confirmed proper reduction and realignment in all five cases.
Conclusion: The use of ultrasound allowed for "real-time" visualization of fracture fragments and realignment. The application of ultrasound in fracture reduction could serve as a valuable tool for fracture reduction in both the emergency department and in austere prehospital locations lacking radiographic capabilities.
Keywords: convenience sample; emergency department; fracture; remote environments; ultrasound
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(141) Unusual Cause of Difficult Ventilation and Intubation

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A sharp foreign body lodged in the tracheobronchial region is a challenging job for anesthesiologists. Subglottic foreign bodies are common; a common difficulty encountered is a delay in diagnosis. Irregular foreign bodies may produce a partial obstruction, allowing for adequate air movement around the obstruction. The clinical features of a laryngeal foreign body may simulate those of an acute asthma attack in an adult. The differentiation is necessary in the initial stages, as the subglottic foreign body can lead to sudden death due to airway obstruction. Sudden onset of wheezing in a non-asthmatic patient should arouse suspicion.

In this case report, the patient described was transferred to the respiratory intensive care unit for respiratory distress with a diagnosis of asthma, and later, the cause of distress was found to a denture (single prosthetic tooth) in the larynx.
Keywords: difficulty breathing; foreign body; intubation; obstruction; ventilation
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(142) Hybrid Neural Network/Expert System Environment Using Fuzzy Cognitive Maps in Prehospital and Disaster Medicine

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Introduction: Objective, clinical, or logistic decision-making is paramount for optimal disaster and prehospital response. Critical decisions often are made within the "golden hour" of an incident based on cognitive bias and often incorrect interpretation of information.

The fuzzy cognitive map, a neural network approach to knowledge representation, has several characteristics that make it highly attractive for use in planning and control tasks. These characteristics include: (1) the ease of combining knowledge acquired from various sources; (2) a capacity for adaptive refinement through supervised and unsupervised learning; and (3) an ability to make very quick inferences in both routine and novel situations. The integration of both artificial neural networks (ANNs) and knowledge-