Letters to Editor

Operating table tipping: A reminder of electrical safety in the operating room

Sir,

The increase in number and complexity of electrical equipment used makes it necessary for the anesthesiologist to know about electrical safety in the operating room (OR).[1]

A 48-year-old male was posted for arthroscopic shoulder repair. General anaesthesia was induced after administering an interscalene block. The right dorsalis pedis artery was cannulated for invasive blood pressure monitoring. In the left lateral position, the right arm was abducted and 4 kg traction applied using a pulley attached to a drip stand at the end of the operating table. Around 10,000 ml of normal saline was used for joint distension and irrigation. A wet film of water remained on the floor despite continuous mopping and suctioning. After 2 h, the OR table started tipping to the head down position. One anesthesiologist supported the head, neck and the endotracheal tube while the surgeons quickly unfastened the traction. The remote and the manual switch stopped working simultaneously. The power to the table was turned off but it had tilted to a steep Trendelenberg position. The patient was swiftly shifted to a patient transport trolley [Figure 1]. The airway pressure increased from 13 cm H₂O to 27 cm H₂O, but returned to 14 cm H₂O on shifting to the trolley. The arterial line was dislodged, but a pressure dressing was applied. There was no change in heart rate,
SpO2, EtCO2 or blood pressure. The OR table was changed, and the surgery was completed. The shoulder movements recovered after 9 h with no neurological deficit after 24 h. The defective table was inspected by an engineer who found it in satisfactory working condition.

The main concerns were injury to the patient including brachial plexus injury, dislodgement of tubes and lines, and maintenance of sterility. This patient had no postoperative infection or nerve injury.

Wet procedure locations are those spaces that are subject to wet conditions while patients are present. Routine housekeeping procedures and incidental spillage of liquids do not define a wet location.[2]

The hazards of wet location are accidental trip, electrocution, electrical burns and fire. The spill may be blood, urine, vomitus, intravenous fluid, medicines, irrigation fluid or fluid from the surgical field.[3] Wet conditions prevail in arthroscopy OR, urology OR and labor rooms.

The OR table (SMART P2000 PLUS, Mediland Enterprise Co. Ltd., Taiwan) was under regular maintenance. A short circuit within its electric panel set off a bizarre mechanical event. The water had evaporated by the time the table was examined.

Short circuit may cause overheating, corrosion, sparking and even explosion. Wet fluid may form an electrical conduit between live electrical equipment and persons standing on the wet pool.[5] Objects like extension boards on the floor, frayed electric cords, exposed metal casing, damaged insulating covers can become live.

An electrical ground is any object that can instantaneously receive large amounts of electrical charge. Electric power supply is usually grounded but may be ungrounded in OR’s. If ungrounded, every electrical equipment must be grounded and have a 3-pronged plug. Such a system should also have a line isolation monitor to indicate current leak. Wet locations with grounded power should have provisions for power interruption (ground fault circuit interrupter).[6]

Operating rooms are considered dry areas in our hospital and the power is grounded. Each equipment was grounded and had a separate plug point. Each plug point was connected to a separate miniature circuit breaker designed to trip at 6 mA. The manual controls of the OR table were mounted in an enclosed panel at the lower end of the table, about 2 cm from the floor. Water had seeped through the edges and established an aberrant bridging contact initiating the automatic inclination of the table. This incident highlights a unique case of electrical snag in a wet OR.

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There are no conflicts of interest.

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