

A Framework for Teaching the Intracranial Pressure Measurement through an Experimental Model

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Abstract : This project presents a framework for teaching intracranial pressure monitoring (ICP) concepts using a low-cost experimental model in a neurointensive care education program. Data concerning ICP monitoring contribute to the patient's clinical assessment and may dictate the course of action of a health team (nursing, medical staff) and influence decisions to determine the appropriate intervention. This study aims to present a safe method for teaching ICP monitoring to medical students in a Simulation Center. **Methodology:** Medical school teachers, along with students from the 4th year, built an experimental model for teaching ICP measurement. The model consists of a mannequin's head with a plastic bag inside simulating the cerebral ventricle and an inserted ventricular catheter connected to the ICP monitoring system. The bag simulating the ventricle can also be changed for others containing bloody or infected simulated cerebrospinal fluid. On the mannequin's ear, there is a blue point indicating the right place to set the "zero point" for accurate pressure reading. The educational program includes four steps: 1st - Students receive a script on ICP measurement for reading before training; 2nd - Students watch a video about the subject created in the Simulation Center demonstrating each step of the ICP monitoring and the proper care, such as: correct positioning of the patient, anatomical structures to establish the zero point for ICP measurement and a secure range of ICP; 3rd - Students train the procedure in the model. Teachers help students during training; 4th - Student assessment based on a checklist form. Feedback and correction of wrong actions. **Results:** Students expressed interest in learning ICP monitoring. Tests concerning the hit rate are still being performed. ICP's final results and video will be shown at the event. **Conclusion:** The study of intracranial pressure measurement based on an experimental model consists of an effective and controlled method of learning and research, more appropriate for teaching neurointensive care practices. Assessment based on a checklist form helps teachers keep track of student learning progress. This project offers medical students a safe method to develop intensive neurological monitoring skills for clinical assessment of patients with neurological disorders.

Keywords : neurology, intracranial pressure, medical education, simulation

Conference Title : ICHSS 2020 : International Conference on Healthcare Simulation and Surgery

Conference Location : New York, United States

Conference Dates : January 30-31, 2020