Contingency

Key components of preoperative rehearsal may include:

Team Briefing: The surgical team gathers to discuss the details of the upcoming surgery. This includes reviewing the patient's medical history, discussing the specific procedure, and assigning roles and responsibilities to each team member.

Surgical Simulation: In some cases, virtual or physical surgical simulations may be used for rehearsal. Virtual reality tools, computer-based simulations, or even physical models can provide a realistic environment for practicing the neurosurgical procedure.

Reviewing Imaging and Data: The team reviews any relevant medical imaging, such as CT scans or MRIs, to understand the patient's neuroanatomy thoroughly. This helps in anticipating challenges and planning the approach to the surgery.

Communication Practice: Clear communication among team members is crucial during neurosurgery. Rehearsingcommunication protocols and ensuring that everyone understands their role and responsibilities can help prevent errors and improve overall coordination.

Risk Assessment: The team may discuss potential complications or unexpected scenarios that could arise during the surgery. This helps them develop contingency plans and be better prepared for any challenges.

Preoperative rehearsal is part of a broader effort to improve patient safety and outcomes. By thoroughly preparing for a neurosurgical procedure, the surgical team aims to minimize the risk of errors, enhance communication, and provide the best possible care for the patient. It is an essential component of the overall quality improvement initiatives in healthcare.

Traditionally, surgeons relied on two-dimensional (2D) imaging for complex neuroanatomy analyses, requiring significant mental visualization. Fortunately, nowadays advanced technology enables the creation of detailed 3D models from patient scans, utilizing different software. Afterward, these models can be experienced through virtual reality (VR) systems, offering comprehensive preoperative rehearsal opportunities. Additionally, 3D models can be 3D printed for hands-on training, therefore enhancing surgical preparedness. This technological integration transforms the paradigm of neurosurgical planning, ensuring safer procedures [1].

1)
González-López P, Kuptsov A, Gómez-Revuelta C, Fernández-Villa J, Abarca-Olivas J, Daniel RT, Meling TR, Nieto-Navarro J. The Integration of 3D Virtual Reality]] and 3D Printing Technology as Innovative Approaches to Preoperative Planning in Neuro-Oncology. J Pers Med. 2024 Feb 7;14(2):187. doi: 10.3390/jpm14020187. PMID: 38392620.