Cardiac catheterization techniques under anaesthesia.

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Abstract

The role of anesthesiologists in cardiac catheterization lab diagnostic and interventional procedures has changed significantly over the past 20 years. The anesthesiologist faces a number of difficulties in the catheterization laboratory setting, including an unknown isolated location, radiation exposure, a lack of worker assistance and interaction with cardiologists. Anesthesiologists employed in catheterization labs are expected to possess the necessary understanding of the process, the setting, the people involved, the fluoroscope, the echocardiography and the type of radio contrast dye. Any person who is exposed to a radiation environment is required to take precautions against the exposure and wear a dosimeter for tracking cumulative exposure.

Keywords: Cardiac catheterization, Anesthesiologists, Radiologic technologists.

Introduction

Fluoroscopy is typically used to guide and position the catheters during a cardiac catheterization operation, which is carried out in a cardiac catheterization laboratory. For the surgery to be completed safely, the operator needs the assistance of registered nurses and radiologic technologists. The majority of treatments can be carried out under light to moderate sedation with the aid of a local anaesthetic; however, for some procedures, anaesthesia services will be needed to provide deep sedation or general anaesthesia. Right heart catheterization and temporary pacer wire placement are two of these procedures that can be done at the patient's bedside in a coronary care unit [1].

There is no perfect anaesthetic approach, thus attending anesthesiologists must decide whether to use sedation, general anaesthesia or regional anaesthetic during the treatment after consulting with cardiologists. Always strive to reduce the impact of anaesthetic on the cardiovascular system, say anesthesiologists. Additionally, oxygenation and ventilatory care must be carried out in accordance with the diagnostic method because these factors, particularly in paediatric procedures, can affect the diagnosis. Since cardiac catheterization laboratories are performing more complicated procedures, it is the anaesthesia department's obligation to prepare and assign dedicated anesthesiologists for these new tasks [2].

For anesthesiologists who are more at ease working in the pleasant setting of the operating room, the catheterization laboratory setting is cramped. It is crucial for anesthesiologists to interact with cardiologists about patient management and become comfortable with the cath lab setting. While operating in a remote setting like the cath lab, anesthesiologists encounter a number of difficulties. These difficulties include unfamiliarity with the environment, a lack of assistance from workers, a lack of medication, radiation exposure and inadequate equipment [3].

A surgery room and a somewhat smaller control station make up CCL. The process room is equipped with a procedure table, a fluoroscope, anaesthetic equipment, a dye injector, and several catheters and other tools required for the procedure. The control station has a glass pane that serves as a radiation shield through which a technician can observe the entire procedure and converse with the cardiologist and other team members *via* a microphone and speaker. In order to record the results of the procedure, there is also a computer workstation [4].

One must make sure that the cath lab technician pulls the fluoroscope away from the patient's head during induction and intubation so that the airway can be established. For isolated locations, there are also typical tiny anaesthetic devices accessible. A technician in anaesthesia must always be on hand to assist. A Foley catheter should be implanted in extended situations. Additionally, drugs like flumazenil and naloxone should be accessible to counteract the effects of benzodiazepines and opioids [5].

Conclusion

It is obvious that both the volume and complexity of procedures have grown in the cardiac catheterization lab. Furthermore, it is possible that the number of interventional operations carried out on seriously ill patients may rise. In light of the environment change, the job of an anesthesiologist has grown more difficult. The allocation of qualified personnel and the creation of policies according to the process and kind of anaesthesia are two strategies that anaesthesia departments should consider in order to manage this rising population. Additionally, coordination and preparation with the cardiology division can help with patient care in this far-off location.

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While sedation in the catheterization lab may occasionally be administered by a cardiologist or a member of the nursing staff, policies for sedation should be established and closely followed by both departments.

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