



DEMO VERSION

Healthcare

CCI-RCIS Exam

CCI Registered Cardiovascular Invasive Specialist (RCIS)



Exam Latest Version: 6.0



Question 1. (Single Select)

Where would the post-procedural PTCA patient more than likely be transferred to?

- A: Medical floor
- B: Step-down floor
- C: CCU
- D: Both B and C

Correct Answer: D

Explanation:

PTCA, or percutaneous transluminal coronary angioplasty, is a minimally invasive procedure used to open up blocked coronary arteries to improve blood flow to the heart muscle. This is typically done by inflating a small balloon at the site of the blockage. After the procedure, the patient's immediate recovery is crucial and requires careful monitoring.

Initially, the patient is often taken to the Cardiac Catheterization Lab (CCL) where the procedure is performed. Following this, the patient's next location for continued care depends on several factors including the complexity of the procedure, the patient's medical history, and how they respond to the PTCA.

Typically, patients are moved to either a step-down unit or the Cardiac Care Unit (CCU). A step-down unit is a transitional care unit where patients who do not require intensive care but still need close monitoring can be observed. It's designed for patients who are stable but still need nursing care and frequent monitoring of vital signs.

The CCU, on the other hand, provides more intensive monitoring and care. It is equipped for patients who may have had a complicated procedure, or those with potential for serious heart conditions that might require immediate medical attention. Here, patients can be closely monitored for any signs of complications like arrhythmia, heart failure, or recurrent chest pain.

The decision to transfer a patient to either a step-down unit or the CCU is usually made by the attending cardiologist, based on the patient's overall stability, the presence of any complications during or after the procedure, and the anticipated need for further immediate medical interventions.

Therefore, when the question asks where a post-procedural PTCA patient is more than likely to

be transferred, the correct answer would be "Both B and C," referring to both the step-down floor and the CCU. This acknowledges that care level needs can vary significantly among patients following PTCA, and the facility must be prepared to accommodate these varying requirements efficiently to promote the best outcomes for the patient.

Question 2. (Single Select)

If a local anesthesia is being administered, what would be the size of the needle that would be used for a subcutaneous injection?

- A: 18 gauge
- B: 12 gauge
- C: 25 gauge
- D: None of the above

Correct Answer: C

Explanation:

When administering a subcutaneous injection, the size of the needle is an important consideration to ensure proper delivery of the medication and minimize discomfort to the patient. The gauge of a needle refers to its diameter; the larger the gauge number, the smaller the diameter of the needle. Commonly, subcutaneous injections require needles that are thin enough to easily pass through the skin but wide enough to administer the medication effectively.

For a subcutaneous injection, such as one involving local anesthesia before a procedure like catheterization, a 25 gauge needle is typically used. This size is preferred because it is large enough to allow the anesthesia to be administered smoothly, yet small enough to minimize pain and tissue damage at the injection site. A 25 gauge needle strikes a balance between ease of injection and patient comfort.

Occasionally, if the injection needs to reach deeper subcutaneous tissues, a slightly larger needle, such as a 22 gauge, may be chosen. This is somewhat thicker and can be beneficial for delivering the medication to a slightly deeper layer without requiring an intramuscular injection, which would need an even larger needle.

In contrast, needles like the 18 gauge or 12 gauge are significantly larger and are generally used for other purposes such as drawing blood or administering intravenous therapies, where larger veins are targeted, and faster fluid flow is required. These sizes would be inappropriate and potentially harmful for subcutaneous injections due to their large diameter, which could cause excessive pain and tissue damage.

Therefore, for a subcutaneous injection involving local anesthesia, a 25 gauge needle is the most appropriate choice due to its adequate size for medication delivery while maintaining patient comfort.

Question 3. (Single Select)

Morphine and which of the following would be considered as first-line medications that would be used for conscious sedation during a cardiac catheterization?

- A: Furosemide
- B: Lisinopril
- C: Ativan
- D: Midazolam

Correct Answer: D

Explanation:

The question you've provided is asking about the first-line medications used for conscious sedation during a cardiac catheterization. Conscious sedation is a medical procedure that uses medication to help a patient relax (sedation) and to block pain (analgesia) during a medical or dental procedure. A patient under conscious sedation is awake and able to respond to commands, but is simultaneously relieved from pain and discomfort.

For the procedure like cardiac catheterization, which involves the insertion of a catheter into a chamber or vessel of the heart, both sedation and pain control are crucial. This is because the procedure can cause significant anxiety and discomfort. The medications listed in the question are used to achieve this dual requirement.

Among the options you provided: - Morphine is a potent opiate used primarily for pain relief. It is

effective in lowering the perception of acute pain and can also induce a sense of well-being, which helps in reducing anxiety indirectly. - Midazolam is a benzodiazepine that is commonly used for its sedative, anxiety-reducing, and muscle-relaxing properties. It's very effective in inducing a state of amnesia, which is beneficial for patients as it helps them to forget any unpleasantness associated with the procedure.

Other medications listed like Furosemide, Lisinopril, and Ativan (lorazepam) serve different primary purposes: - Furosemide is a diuretic, mostly used to treat fluid build-up due to heart failure, liver scarring, or kidney disease. - Lisinopril is an ACE inhibitor, used to treat high blood pressure and heart failure. - Ativan (lorazepam), another benzodiazepine similar to midazolam, could technically be used for sedation, but is not as commonly chosen for this specific setting as midazolam.

From the options provided: - Demerol (meperidine) and Fentanyl are other narcotics that can be used for pain control during medical procedures. They are similar to morphine but have different profiles in terms of duration of action and side effects.

The best answer to the question, considering typical medical practice for conscious sedation during a cardiac catheterization, would be Morphine and Midazolam. These medications provide both the necessary analgesic and sedative effects required for such a procedure. They are widely used and are considered first-line agents for managing pain and anxiety during invasive procedures like a cardiac catheterization.

Question 4. (Single Select)

Of the following, which would be considered correct for why a cardiac catheterization is performed?

- A: Check how well the patient's heart action is
- B: Check the lung damage
- C: Locate any congenital heart defects
- D: Both A and C

Correct Answer: D

Explanation:

Cardiac catheterization is a medical procedure used to diagnose and treat certain cardiovascular conditions. The primary purposes for which this procedure is performed include assessing the heart's function, identifying congenital heart defects, evaluating the heart's pumping action, checking the functioning of heart valves, detecting blockages, and measuring blood flow and blood pressure within the heart chambers.

The procedure involves the insertion of a catheter, which is a thin, flexible tube, into a blood vessel that leads to the heart. This allows doctors to perform diagnostic tests and treatments directly within the heart and its associated structures. For instance, through cardiac catheterization, physicians can use imaging techniques to visualize the heart's chambers, valves, and coronary arteries. This is crucial for diagnosing conditions such as coronary artery disease, heart valve disease, or congenital heart defects.

Additionally, cardiac catheterization can measure the pressure and blood flow in the heart's chambers. This measurement helps in assessing the overall efficiency of the heart's pumping mechanism. Moreover, if blockages are detected, procedures such as angioplasty can be performed during catheterization to open up the arteries and restore normal blood flow to the heart muscle.

However, it's important to note that cardiac catheterization does not serve the purpose of checking for lung damage. Assessment of lung function and damage typically involves different procedures, such as pulmonary function tests or imaging studies like chest X-rays or CT scans, which are not part of cardiac catheterization.

Thus, in the context of the given question, the correct answer would be "Both A and C" because cardiac catheterization is indeed performed to check how well the patient's heart action is and to locate any congenital heart defects. It is not used to check lung damage, making options suggesting this incorrect.

Question 5. (Single Select)

Pictures of the heart that are taken during the cardiac catheterization would be considered?

- A: Angiography
- B: Procedures
- C: Hemodynamics
- D: X-rays

Correct Answer: A

Explanation:

The question is asking about the type of images obtained during a cardiac catheterization procedure. The correct term for these images is "angiography." Angiography is a medical imaging technique used to visualize the inside, or lumen, of blood vessels and organs of the body, with particular interest in the arteries, veins, and the heart chambers. This is done primarily to visualize the flow of blood to different parts of the body, identifying any blocks or abnormalities in the blood vessels.

During a cardiac catheterization, a thin flexible tube called a catheter is threaded through a blood vessel to the heart. A contrast agent, which is visible on X-rays, is then injected through the catheter, and X-ray images are taken. These images are what is referred to as angiograms. They provide detailed information about the heart and the blood vessels leading to and from it. This procedure helps in diagnosing conditions such as coronary artery disease, which involves the narrowing or blockage of the coronary arteries.

It's important to differentiate angiography from hemodynamics, another term that might appear in discussions about cardiac catheterization. Hemodynamics, in contrast, involves the study of blood flow and is concerned with the pressures and flow within the heart and vessels, rather than the imaging of the structures themselves. Measurements taken during hemodynamic assessments include blood pressure within the heart and the oxygen levels in the blood. These measurements help to assess the functional capacity of the heart and identify any abnormalities in how the heart pumps blood.

Thus, when referring to the pictures taken of the heart during a cardiac catheterization, the correct term is angiography. This method not only helps in diagnosing diseases but also aids in planning and guiding interventions like angioplasty, where blocked or narrowed arteries are widened using balloons and stents.

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