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Nursing Tip: Pain Control for Gynecological Brachytherapy: Key Considerations

Regional Anesthesia

1. **Local Anesthesia:** Consider use of local anesthetics (such as bupivacaine or lidocaine) to target specific areas of pain. These anesthetics are injected directly into the targeted area, providing quick and focused pain relief [1,2].
    - Examples of beneficial local anesthesia teams can consider
        - pudendal block
        - Paracervical block

    Benefits:
    - **Targeted Pain Relief:** Numbs only the specific area, allowing the patient to stay comfortable during treatment.
    - **Quick and Effective:** Lidocaine acts quickly but wears off faster, while bupivacaine lasts longer for extended relief.
    - **Improved Recovery:** Helps minimize reliance on oral pain medications, reducing side effects.

2. **Spinal block:** Regional anesthesia technique where a local anesthetic is injected into the lumbar spine to numb nerves exiting the spinal cord. This is achieved by placing a needle between the lumbar vertebrae and through the dura to inject the medication[1] to provide pain relief to the lower extremities and pelvis. Spinal blocks are ideal for procedures involving the lower abdomen and pelvis. Medication is administered as a single injection and will gradually wear off after administration [3].

    Benefits:
    - **Significantly lower body numbness**, ideal for temporary pain control (under 4-6 hours).
    - **Rapid onset**, providing quick pain relief.
    - **Lower dose requirement** of systemic anesthetics when used as part of multimodal pain control, lowering incidence of associated side effects
    - **Reduced risk of systemic side effects**, since the medication is localized.
    - **Long-lasting effects**, often lasting several hours.

3. **Continuous Epidural Infusion via Epidural Pump:** An effective pain management option for patients needing longer-term relief when compared to spinals (e.g., 6-8+ hours). Epidural catheters are placed in the epidural space, delivering a steady, controlled flow of medication to the area around the spine. For GYN HDR Brachytherapy procedures, the placement is usually in the lumbar spine [3,4].

Benefits:

- **Consistent pain relief** for extended periods with the option for continuous infusion
- **May decrease need for oral & intravenous medications post-operatively**, reducing the risk of side effects like nausea and drowsiness.
- **Adjustable doses** enable healthcare providers to adjust pain management according to the patient's specific needs.
- **Fewer systemic side effects** since the medication acts locally, reducing risks like constipation or sedation.

Additional Multimodal Pain Control Options

4. **Oral (PO) and Intravenous (IV) Medications**

- **Acetaminophen/paracetamol**: A first-line, non-opioid pain reliever, acetaminophen is effective for mild pain and is available in both oral and IV forms. It is well-tolerated and often used before more potent medications[6].
- **Oral benzodiazepine**: While not an analgesic, benzodiazepines are useful for managing anxiety, muscle tension, or discomfort during procedures like pelvic brachytherapy, helping patients relax and stay still. They also can play a role in nausea control in some patients.
    - Teams and physicians should use caution when using these medications in combination with narcotics/opioids to avoid oversedation and respiratory depression. Always ensure proper administration protocols are being followed to avoid oversedation.
- **Oral narcotics/opioids**: For moderate to severe pain, oral narcotics/opioids may be prescribed. However, they should be used cautiously due to potential side effects like sedation, constipation, and nausea. Patient monitoring is important to avoid dependency or overdose. Patients should also be educated on proper bowel regimen to minimize chance of constipation.
    - These medications should be selected based on the patient's pain level, with a focus on minimizing opioid use and side effects.
- **IV narcotics/opioids**: provide effective relief for moderate to severe pain but can cause sedation, nausea, and constipation. Close monitoring is required due to their potency and risk of respiratory depression. Nurses and physicians must take into consideration which narcotic medications will be the most useful depending on time of onset and half-life, to achieve effective pain control for the situation[7].
    - Examples:
        - **Fentanyl** is effective for post-surgical pain because it acts quickly, providing fast relief for moderate to severe pain. Its high potency allows for effective pain control at lower doses, reducing side effects. Additionally, it has a short duration of action, offering flexibility in dosing and minimizing prolonged sedation[8].

    - **Hydromorphone** is effective for post-surgical pain due to its potency, quick action (though slightly slower than that of fentanyl), and longer duration of relief. It provides strong pain control at lower doses, reducing the risk of side effects and helping with sustained pain management [8].
- **Ketorolac or other NSAIDS** are helpful for moderate to severe pain, commonly used in gynecologic (GYN) patients, particularly those experiencing abdominal cramping and generalized discomfort. It should also be avoided in patients at risk for bleeding, as it may increase bleeding complications. Brachytherapy teams and physicians can determine if this medication can be helpful as part of multimodal pain management on a case-by-case basis. Use cautiously in patients with impaired renal function [9].

5. Nonpharmacologic Methods

- **Emotional support:** Nursing emotional support involves providing empathy, active listening, reassurance, and a calming presence to help patients feel safe, understood, and emotionally cared for during their care.
- **Music therapy**: Providing calming music can help reduce anxiety and discomfort during procedures by promoting relaxation and distraction, improving the overall patient experience.
- **Entertainment**: Access to video streaming (via tablet or laptop) offers distraction and alleviates boredom or stress, especially during long procedures, making the experience more comfortable.
- **Pillows and repositioning as allowed by physician**: Using pillows for body support enhances comfort and prevents pressure on sensitive areas, such as the perineum. Since patients must remain flat, placing a pillow under the knee helps reduce discomfort and supports proper positioning during treatment.

6. Management of Low Back Pain in Pelvic Brachytherapy

- **Warm Packs**: Apply warm packs to the lower back intermittently to relieve tension, ease pain, and promote muscle relaxation. * Avoid use in patients who have received spinal or epidural anesthesia, as they may not be able to feel heat and this could lead to injury.
- **Lateral Positioning with Pillow Support**: If approved by physician, position patients laterally with knees **bent** and **pillows** under their knees to align hips and support the back. Always confirm with the physician before adjusting positioning. Practice will vary by physician preference and orders.
- **Minimize Lithotomy Time**: Limit the time spent in the lithotomy position to reduce back strain and discomfort during procedures.
- **Pillow Under Sacrum**: Place a small pillow under the sacrum during and after the procedure to relieve pressure on the lower back, ensuring the implant isn't pressing against it.

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