

Two Cases of Retained Vaginal Packing: When Writing an Order is Not Enough

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Patrick Romano, MD, MPH, Debra Bakerjian, PhD, APRN, RN, Verna Gibbs, MD, Ulfat Shaikh, MD, Jacqueline Stocking, PhD, RN, for this Spotlight Case and Commentary have disclosed no relevant financial relationships with commercial interests related to this CME activity.

Learning Objectives

- Describe the difference between a cavity, an orifice, and a wound as a location where packing material may be retained.
- Explain why the vagina is a relatively common site for retained packing after obstetric and surgical procedures.
- Identify the characteristics of safer packing materials to use in an orifice.
- Design a set of “best practices” in the operating room and postoperative care units to minimize the risk of retained vaginal packing, including use of patient armbands, electronic or written tracking tools, timely handoffs by primary sources, repeated patient education, and avoidance of workarounds.

- Describe the importance of nurse-to-nurse collaboration and other educational and cultural activities to overcome a clinician's reluctance to perform a vaginal examination when such an examination is clinically indicated.

The Case

Case #1:

A patient underwent an open reconstructive urogynecologic procedure. A Foley catheter was placed to drain the bladder and lap pads were used during the operation. After completion of the procedure, the physician composed a dressing by cutting a vaginal packing sponge (which removed the radiopaque marker attached to the end of the sponge), coated it with estrogen cream and placed it in the vagina. Then 4x4 gauze dressings, a Kerlix™ fluff and a peri-pad were put on the perineum and secured with mesh pants. The nurse documented the surgical counts as correct and “vag pack with Premarin® cream by doctor, gauze 4x4's” was recorded as the dressing. The physician order was to remove the pack the next day when the Foley catheter was removed. The patient went to a medical floor postoperatively because no beds were available on the surgical ward. The next day, the ward nurse read the physician's order to remove the Foley and the packing. The nurse removed the Foley catheter and the 4x4's, the Kerlix™ fluff and the peri-pad, assuming this was the packing. Before discharge, the physician stopped by to see the patient, looked briefly at her perineum and did not see anything. The physician asked the patient if “everything” had been removed. The patient said “yes” and was discharged to be seen in the office for follow-up.

Ten days later the patient had a feeling of vaginal irritation and fullness and had burning with urination. When she was seen in the office, the physician told her she had a urinary tract infection and placed her on antibiotics. She developed a very malodorous vaginal discharge and would not go out of the house because she was so embarrassed by the persistent odor. Three weeks after the procedure, the patient went to the Emergency Department (ED) with a fever and pelvic fullness, feeling like something was “inside of her”, and pain when sitting. A computerized tomography (CT) scan showed an amorphous density high in the vagina without evidence of perforation or abscess. A gynecology consultation was obtained, whereupon the physician removed a rust-colored, fetid, retained vaginal pack. Risk management was notified, and a disclosure discussion was held with the patient.

Case #2:

A patient underwent an anterior/posterior urogynecologic procedure. A Foley catheter was placed to drain the bladder and surgical sponges were used during the operation. After the procedure, the physician placed radiopaque vaginal packing in the vagina and a dressing on the perineum. In the nursing intraoperative record, the operating room (OR) nurse documented the surgical counts as correct and documented that an x-ray detectable pack was in the vagina and a Kerlix™ dressing was on the skin. The OR nurse did not complete the Orifice Packing Communication Tool nor did she place the colored armband with the words “remove packing before discharge” on the patient, as specified in the Orifice Packing Policy.

The OR nurse could not find these materials, so she wrote “vaginal packing” on a slip of paper, which she put on the gurney mattress to which the patient was then transferred.

At the handoff to the post-anesthesia care unit (PACU) nurse, the OR nurse stated that there was packing in the vagina but did not ask for nor receive any repeat-back confirmation. The physician wrote an order to remove the vaginal packing when the Foley catheter was removed before discharge. Hours later in the PACU, a different nurse removed the Foley but did not see any vaginal packing and thus sought help from another nurse. The other nurse looked to see if the patient was wearing the colored armband and not seeing one, assumed there was no packing but did not actually examine the patient. The physician came by to see the patient just before discharge and asked the patient, using the patient’s daughter to translate, if the Foley and packing had been removed. The patient said that, yes, “it” had been, and she was then discharged.

Two days later, the patient called the hospital and spoke with a patient safety officer speaking her native language. The patient said that while she was sitting on the toilet, she felt fullness and burning “down there” and saw something dangling out from inside her. She painfully pulled out a 3-foot-long piece of cotton gauze with a blue line in it. She asked the patient safety officer if that was a Foley and wanted to know why it was inside her. The physician was notified, and a disclosure discussion was held with the patient.

The Commentary

By Verna Gibbs, MD

These two cases of retained vaginal packing occurred at two separate points along a continuum of experience for medical personnel who provide surgical and obstetric care. Vaginal packing is [commonly used](#) in obstetrics, usually in the management of hemorrhage, but is also a routine part of surgical wound management after urologic, gynecologic and vaginal reconstructive procedures. To understand what happened in these two cases, and how to prevent such errors in the future, we must start by defining terms.

Packing refers to any material (e.g., ribbon or rolled gauze, cotton wadding, lap pads, iodoform gauze) that is forcefully and tightly placed in a cavity, orifice, or wound, usually to control bleeding, aid healing of infection, or limit wound contamination. A cavity is a hollow, contained space with defined borders or margins, which is usually anatomically defined (e.g., the abdominal or thoracic cavity), but may also be pathologic (e.g., dental decay leading to an abscess cavity). An orifice is an opening to a space through which something can pass; the most often packed orifices are the vagina, mouth, nose, ear, and rectum. Finally, a wound or incision is an opening through the skin and subcutaneous tissues that creates a procedural, operative, or traumatic space. The word “packing” is used as both a noun and a verb, which contributes to confusion. As a noun, “packing” needs a modifier to understand its use and management; for example, “vaginal packing” or “nasal packing.”

Orifice Packing

Based on these definitions, post-procedural vaginal wound care often involves orifice packing. By convention, the material placed in an orifice is considered a dressing, not a surgical sponge, even though dressings are usually placed in wounds or over incisions. Removal usually occurs within 24-48 hours, before the patient is discharged from the hospital, but after the patient has left the operating room and the PACU. Dressings are not part of the intra-operative surgical count, so other strategies must be employed to ensure that material inserted into an orifice in the OR is removed at the right time, if it is not intended to remain in the patient. Vaginal packing is an intra-vaginal surgical item that cannot be seen, has no visible evidence of its existence (like a bandage or incision), but must be removed, often by someone other than the person who inserted it, at a remote site and at a distant time. All these circumstances may lead to serious consequences without strong communication strategies to ensure safe handoffs.

The materials available for packing are usually made of woven or gauze cotton. These materials include fluffy soft wide gauze, with or without a radiopaque marker running through it, wadding, and ribbon gauze that can be impregnated with chemicals (e.g., iodine) and woven with a radiopaque marker. Dressings come in a wide variety of widths and lengths so they can be cut and fashioned to fit the orifice or wound being packed. The choice of the kind of dressing to use is subject to physicians' judgment and preference, but for the vagina, the safest choice is to insert one continuous, appropriately-sized piece of cotton material with a radiopaque marker that runs throughout the gauze.¹ Having the radiopaque marker throughout the packing material facilitates x-ray identification, if the original dressing was cut and fashioned to fit the space. This straightforward recommendation is difficult to implement, because physicians use a variety of materials, many of which are not radiographically detectable. Once the physician has inserted the vaginal packing, they must write nursing orders for the time of removal or provide instruction for the packing to remain in place at discharge, with plans for removal as an outpatient.

Once packing material has been placed, usually by a physician, retention typically results from a concatenation of errors in practice and communication involving multiple care providers in multiple sites. It is a system problem; therefore, it requires system solutions, rather than sanctions or behavioral modifications directed at individuals. A rule could be made that only the physician who put in the vaginal pack can remove it, but then what would happen if that physician were unavailable when the time comes for pack removal? It is not a wise solution to be dependent on the action of only one person.

Approach to Improving Patient Safety

The design of system remedies to [prevent](#) retained vaginal packing can be informed by a sequential active agent perspective. This perspective involves defining safe practices and communication strategies for each agent (physicians, nurses, patient) at each site, at different points along the process from packing insertion to removal.² Then shared knowledge of the whole action plan is required rather than a siloed understanding of an individual actor's role. This view begins with the physician who inserts the packing

material into the vagina in the OR or procedural area, where the patient is likely sedated or under general anesthesia.

The next active agent is usually the OR (or procedure room) nurse circulator, who is present at the insertion of the packing and is responsible for documenting the event in the nursing intraoperative record. In addition, the nurse circulator has an easily recognizable vaginal packing communication tool that will work over handoffs and in different venues. A “best practice” process has been designed whereby the nurse circulator places a specifically designed armband on the patient in the OR, when the packing is inserted.³ A “packer tracker tool” (either paper or electronic) is started by the nurse circulator to outline the specifics of the type of packing and where it is placed. The essential components of the toolkit (i.e., the radiopaque packing material, the packing armband, and the tracking tool) should be bound together in one place in the OR so the nurse circulator does not have to run around to different places to find the toolkit components.⁴ The nurse circulator uses the armband to “show and tell” the next nurse at the next level of care that there is packing in the vagina. The receiving nurse then finds the tracker document or looks in the nursing intraoperative record to see what has been documented about the packing. They also look for an order from the physician for management direction. There is active read-back/repeat-back instruction between the nurse circulator and the receiving nurse to confirm the accurate transmission of information.

Patient care nurses are frequently asked to remove the packing (“pull the urinary catheter and the packing”), especially in obstetric and surgical inpatient wards and other outpatient care areas where the patient recovers before being discharged. Hospitals that are using the best processes ensure that appropriate policies are in place and have electronic menus or other tracking tools to document the presence of the vaginal pack at each handoff from the OR to the PACU to the ward, with patient education when the packing is finally removed.^{5,6} The armband is a reminder for the agent of action to remove the packing or ask why the patient has a colored armband that says, “packing in place”. When the packing is removed, it is checked to confirm that it matches exactly what was documented as having been inserted. If there is any discrepancy, a digital vaginal examination or an x-ray of the pelvis is obtained to verify removal. When the packing is removed, the armband is cut off. The use of the armband and the packer tracker (which is the documentation tool used at each shift and each handoff) moves the information about the packing up to the level of an action coincident with vital signs.

The next agent of action is the patient, who is told, once awake and recovered, that there is packing in her vagina and that the intent is to remove it before discharge, if applicable. As a strong communication strategy, this process involves transferring information from primary source providers to a secondary source. The radiopaque packing would be first documented by the nurse circulator in the operating room (primary source provider) who saw the physician insert the packing. That is why the nurse circulator puts the armband on the patient and documents on the “packer tracker” what they have done. This nurse (primary source provider) also does a handoff to the receiving nurse at the next level of care (secondary source provider). The receiving nurse now has two primary sources of information about the packing – information received from the nurse circulator and orders received from the physician.⁷ The patient is told by the receiving nurse, who had two primary source providers inform them of the presence of the packing. (The primary source providers usually go back to the OR to start the next case and may not be available

when the patient is awake.) This secondary source provider should inform the patient why she has an armband, that there is packing in her vagina, and what the management plan is for it. This is the first time that information is discussed with the patient - but not the only time - as it should be discussed at each handoff. If care providers wait to tell the patient until after the ward or unit nurse receives another [handoff](#), the risk of error rises.

Information flow is best when the information is conveyed from primary sources - those who actually know, saw, or acted. Thus, the receiving nurse should not delegate the responsibility to the ward or unit nurse (tertiary source providers) to inform the patient about the armband and the packing. At each handoff, the nurse tells the patient again. As care progresses, nurses can remind the patient why the armband is there and the plans for the packing. Patients may forget, may be under the influence of sedating medications, and may not understand the first time they are told something, so they should be told repeatedly until the packing is removed. This process of sharing information with the patient also keeps different nurses cognizant of the packing status. This is not an endless chain of events, as orifice packing for hemorrhage control rarely lasts longer than 24-48 hours. Telling the patient is also an important strategy to enlist the patient to help doctors and nurses get it right. For example, a well-informed patient may ask: "am I supposed to go home with this colored armband?" or "they told me that I was going to have the packing removed but I feel like there is something still inside me."

The second case illustrates the consequences of process failures when multiple errors occur, undesigned [workarounds](#) are used, education is not provided, language barriers persist, and assumptions are made. If there is evidence from a primary source provider that packing is in place, then the action agent has to answer the correct question – "is there packing in the patient's vagina?" - not "is there an armband on the patient" or "why isn't there an armband on the patient if there is packing in the vagina?" This task involves the use of critical thinking skills. The armband is a visible surrogate for the invisible packing, but other means must be used to determine if there is vaginal packing. While acknowledging the importance of system-oriented solutions, as fully described above, the health professionals involved in caring for these patients could have taken several specific steps that would have prevented patient harm:

- Called the physician to clarify the written order, explaining (in case #2) that the patient was not wearing an armband to indicate orifice packing.
- Reviewed the intraoperative nursing report to find what was written by the nurse circulator.
- Called or texted the nurse circulator to confirm the information documented in the medical record.
- Asked the patient (in her native language or through a qualified interpreter) if she felt like there was something in her vagina.
- Performed a digital vaginal examination before discharge or requested the physician to order an x-ray of the pelvis to resolve the issue.

Executing none of these options, while "working around" the system-oriented processes that hospital quality improvement professionals had previously implemented, led to an unfortunate outcome for the patient.

Cultural and Social Issues

There are two remaining issues that require ongoing cultural reform. One is the seeming reluctance of some clinicians to ask each other for help in an unknown situation. It is difficult to know what barriers interfere with this practice and there is little literature on the topic as it pertains to nurses. A study of adverse events and medication errors in two intensive care units found that nurses prevented 86% of medical errors before they occurred, suggesting that increasing collaboration among nurses may improve patient safety.⁸ However, nurse-to-nurse collaboration may be compromised by aggressive and abusive behavior,⁹⁻¹¹ leading one team to develop a set of five subscales to reliably measure nurse-to-nurse collaboration.¹² Additional research is needed to understand how to encourage safety-enhancing collaborative behaviors among nurses with different skill sets, and between nurses and physicians involved in postoperative and postpartum care.

The other puzzling cultural issue is the reluctance to perform a vaginal digital examination by all levels of medical personnel.¹³ Instead of performing a simple, painless, manual exploration to determine if a wad of packing material was in the vagina, health care providers in this Case relied on perfunctory perineal observation or expensive radiographic studies. Vaginal digital exams are not typically taught in schools of nursing; however, additional training is provided by hospitals for nurses working on labor and delivery and gynecology units.^{14,15} These specialty nurses should serve as resources for nurses on other units who are asked to care for postoperative gynecology patients. The hospital's culture should support nurses to raise scope of practice questions when they are asked to perform procedures (such as removing vaginal packing) for which they have not been trained. All EDs and all units housing postpartum and postoperative gynecologic patients should be equipped for pelvic examinations, so that clinicians do not rely on CT to evaluate patients presenting with vaginal discharge. The exact reasons for clinicians' reluctance to perform vaginal examinations are not well understood, but it is a disservice to female patients and may contribute to missed diagnoses and unnecessary care.¹⁶

Take-Home Points

- Packing refers to any material that is forcefully and tightly placed in a cavity, orifice, or wound, usually to control bleeding, aid healing of infection, or limit wound contamination.
- Orifice packing is considered a dressing, so it is not a counted item in the operating room and it is usually intended for removal within 24-48 hours after surgery (by a nurse acting under the order of a physician).
- Hospitals must develop systems to prevent retained packing in orifices, especially the vagina.
- Such systems usually include (1) use of packing materials with radiopaque markers, which must not be cut off; (2) required use of one continuous piece of packing; (3) required use of an "orifice packing handoff tool" or Packer Tracker to facilitate safe handoff across shifts and units; (4) placement in the operating room of a "packing armband," which is cut off only after the packing is removed; (5) clear documentation in the medical record that packing has been inserted or removed; and (6) engagement and education of the patient to understand the purpose of packing and the plan for removal.

- Handoff information should include specific details about the nature and amount of the vaginal packing, when and where it was inserted, and when and where it should be removed.
- Information flow is best when the information is conveyed from primary sources - those who actually know, saw, or acted in the case – rather than secondary sources.
- Nurses may need additional training to perform digital vaginal exams, particularly if they are on a unit that does not normally care for postpartum or postoperative gynecology patients. Organizational culture should encourage health care providers to communicate and collaborate with each other to optimize patient safety.

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