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Pet Scans: Better Choice for Small Tumors

Sarah McLain RN, CLNC

Positron emission tomography (PET) scans detect vaginal cancer more often than CT scans, says a study by researchers at Washington University School of Medicine in St. Louis.

The study found that PET picked up twice as many primary tumors and cancerous lymph nodes in vaginal cancer patients as did CT scans. The findings appear in the July 1 issue of the *International Journal of Radiation Oncology*.

Vaginal cancer is relatively rare, making up 3 percent of all gynecological malignancies, according to the American Cancer Society. Like cervical cancer, it is linked to infection with the human papillomavirus (HPV) and is highly curable if detected early, before it has spread.

The St. Louis team said their study results suggest that the use of PET would allow for much more accurate diagnosis of vaginal cancer, leading to better treatment decisions. Currently in the United States, Medicaid, Medicare and many private health insurers specify CT only for the diagnosis and monitoring of vaginal cancer.

Until the U.S. Centers for Medicaid and Medicare Services (CMS) reviews and approves the procedure, Cont on page 2

Compartment Syndrome

Marguerite Barbacci, RNC, MPH, BSN, LNCC

Compartment syndrome is a condition which involves the compression of nerves and blood vessels within a closed anatomic space. Subsequent to the compression, compromise of circulation and tissue function occurs.

Muscles and muscle groups in the arms and legs are separated by thick layers of tissue called fascia. Inside each layer of fascia is a confined space, called a compartment. Muscle tissue, nerves and blood vessels are contained within the closed space environment of the compartment.

Fascia do not expand; therefore, any insult causing swelling can cause a build up of pressure, compressing muscles, blood vessels and nerves. If this pressure is high enough, blood flow to the compartment will be compromised, causing muscle and nerve ischemia and leading to permanent injury.

Compartment syndrome is most common in the lower leg and forearm, although it can also occur in the hand, foot, thigh and upper arm. Tibial fractures account for as many as 45% of all cases of compartment syndrome. Other causes associated with compartment syndrome include long bone fracture, vascular injury, burns, compression resulting from crush injury, penetrating injuries, deep vein thrombosis. Compartment syndrome has been reported in patients who underwent prolonged surgery while placed in the lithotomy position with the use of compression stockings. Compartment syndrome is a medical emergency that requires rapid intervention to prevent permanent damage.

Compartment pressures higher than 30mm Hg require surgical intervention. Left untreated, muscle infarction, tissue necrosis, and nerve injury will occur within 6-10 hours. For unclear reasons, compartment syndrome associated with surgical positioning may manifest later, with a mean time to presentation of 15-24 hours or longer postoperatively.

In addition to local morbidity due to muscle necrosis and tissue ischemia, cellular destruction and alterations in muscle cell membranes lead to the release of myoglobin into the circulation. This circulating myoglobin results in renal injury. Advanced compartment syndrome may result in rhabdomyolysis (muscle breakdown), which can also lead to renal failure. Cont on page 3

Duty to Warn

Joy Collins, RN, BSBA, CLNC, LNCC

Since 1976, there has been a law in effect called the Tarasoff Principle. Often referred to as the "Duty to Warn", it says that if a counselor knows of, or has reason to know of, probable harm to another identifiable person or the property of an identifiable person, a warning must be issued if the client's behavior cannot be controlled. This principle was established by a court ruling that came down because of Tarasoff v. Regents University of California in 1976.

The details of Tarasoff are as follows: a student named Prosenjit Poddar was seeing a psychologist at the student health center of the University of California. He was in therapy because he wanted to deal with his feelings following a breakup with a woman named Tatiana Tarasoff. The counselor felt that Mr. Poddar was dangerous because of his pathological attachment to Ms. Tarasoff. He had told his therapist that he intended to purchase a gun. The therapist notified the police both verbally and in writing. The police questioned Poddar and felt he was rational. They made him promise to stay away from Tarasoff. However, two months later, he killed Tarasoff. Tarasoff's parents sued the University of California but the case was dismissed.

The family appealed, asserting that the defendants had a duty to warn Ms. Tarasoff herself or her family of the imminent danger. They also alleged that the university had a duty to pursue the confinement of Poddar. In a 1974 ruling, The Supreme Court of California held that the therapist did indeed have a duty to warn Ms. Tarasoff. In a second ruling, they went even further and held that the therapist also had a duty to exercise reasonable care to protect third parties against dangers posed by patients. Merely notifying the police was not enough.

This standard, with slight variation from state to state, holds true today. However, recently a family in California successfully broadened the definition of who can divulge the threat. The case details are: the father of a therapist's client communicated a warning to the therapist. He told the counselor that his son was depressed and suicidal because his girlfriend had broken up with him and was seeing someone else, Keith Ewing. The patient committed himself voluntarily but was soon released. A day later, he killed Ewing. Ewing's parents sued. In Ewing v. Goldstein, the court upheld the then current standard.

Ewing's family appealed and the Second District Court of Appeals overturned the decision. The case was taken to the Supreme Court who announced in November 2004 that it would let the Appeals Court decision stand. In other words, the family of a patient can now communicate the threat. It does not need to come from the patient himself. Many people feel this new ruling interpretation places an undue burden on the therapist who must now decide if a reported threat is credible. This new ruling may impact court decisions all across the country.

Pet Scans: Better Choice for Small Tumors

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vaginal cancer patients will most likely not be evaluated using PET scans, the study authors said. However, they're hopeful their findings will help encourage CMS acceptance of PET scans for vaginal cancer patients.

"CT scans are useful in many cases, but they have a limit to their resolution," study author Dr. Perry W. Grigsby, a professor of radiation oncology and radiology, said in a prepared statement. "When you're evaluating lymph nodes for cancer using CT, the node has to be at least a centimeter for it to be considered abnormal. But PET scans can detect much smaller nodes that have cancerous cells."

PET scans are also more effective than CT at detecting small tumors, the researchers said.

Oxygen Saturation- What it Means and What to Look For

Pattie Patterson RN, LNCC, CLCP

When the records say the patient's oxygen saturation or O^2 sat is 90%, what exactly does this mean? Is it serious? Can the patient just be given more oxygen to bring it up?

These are all good questions but the answers are not so simple. There are many factors to consider before deciding if it's Cont on p 5

Compartment Syndrome

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Fatalities in cases of compartment syndrome are usually due to renal failure complicated by sepsis.

Evidence of trauma and gross deformity should alert the physician to the possibility of a developing compartment syndrome. Comparison of the affected limb to the unaffected limb is useful. Sensory nerves tend to be affected before the motor nerves, and selected nerves may be more susceptible than others in the same compartment. If objective evidence of a major sensory deficit or loss of peripheral pulse is found, the syndrome is far advanced.

The traditional 5 P's associated with compartment syndrome (pain, paresthesia, pallor, pulselessness, paralysis) are not clinically reliable and manifest only in the late stages of the disorder. Symptomatically, a clinical tip off to the condition is the presence of crescendo pain out of proportion to the original injury. This pain is deep and aching in nature and is worsened by passive stretch of the involved muscles.

Elevation of creatine kinase (CK) of 1000-5000 U/mL or the presence of myoglobin in urine may alert the physician to the occurrence of compartment syndrome. The level of these tests will also help determine the level of muscle necrosis and rhabdomyolysis. Renal function studies and a potassium level (elevated in rhabdomyolysis, and can cause fatal arrhythmias) must be measured as well.

Operative decompression is the mainstay of therapy. Many surgeons now use a measured compartment pressure of 30 mm Hg as a cutoff for fasciotomy or surgical compartment release. Fasciotomy is of little benefit in a late diagnosis of compartment syndrome. In fact, fasciotomy is probably contraindicated after the third or fourth day, because exposed necrotic muscle is susceptible to infection. These patients usually require life-saving amputation.

Medical therapy employed is specific to the underlying cause of the compartment syndrome. Mannitol, a potent diuretic, has been found to reduce compartment pressure and lesson reperfusion injury. Hyperbaric oxygen has been found to promote vasoconstriction which reduces swelling and edema and improves local blood flow and oxygenation to the compromised structures, thus ensuring the survival of marginally viable tissue.

Postoperative motor deficits resulting from compartment syndrome are initially treated with appropriate orthotic devices (eg, bracing for foot drop). If function does not return in about 1 year, tendon transfer and other forms of reconstructive surgery may be considered. Volkmann contracture is the most common residual limb deformity seen with untreated compartment syndrome, occurring in approximately 1-10% of all cases.

Infection is a serious complication of CS. Most studies show that about 50% of patients having late surgical decompression develop infections and about 50% of these patients ultimately require amputation. Systemic complications include acute renal failure, sepsis, and acute respiratory distress syndrome (ARDS). Most fatalities are due to prolonged intensive care admissions with sepsis and multisystem organ failure.

Late treatment of acute compartment syndrome often has disastrous outcomes. Muscles tolerate 4 hours of ischemia well, but by 8 hours, the damage is usually irreversible. If fasciotomy is performed within 25-30 hours following onset of acute compartment syndrome (not of ischemia per se), the prognosis is good. Little or no return of function can be expected when diagnosis and treatment are delayed. Even with early and aggressive fasciotomy, nearly 20% of patients may have persistent sensory or motor deficits at 1- year follow-up.

A delay in diagnosis is a potentially devastating medical-legal occurrence. Because of the potentially catastrophic nature of this condition clinicians must maintain a high index of suspicion and must consider the diagnosis until proven otherwise.

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Informed Consent Means More Than Signing The Paperwork

Robert Morrison, RN BSN

What Is "Informed Consent?"

In simple terms, informed consent means that the patient is fully informed of the proposed interventions, has weighed the pros and cons, and has given permission for the intervention to occur. However, carrying out this seemingly simple process is quite often frustrating for the practitioners and is often done incompletely. There are no simple, set answers to the question of how to properly obtain informed consent, but there are professional guidelines and substantial case law to assist the organization in their efforts to properly inform their patients.

The Joint Commission on Accreditation of Hospitals and Healthcare Organizations (JCAHO) describes the difference between a signed and witnessed document, and true informed consent. The key element, according to JCAHO's Standards Interpretation Group (SIG), is that the patient must understand the information contained in the documentation and give their approval of the treatment that this documentation describes. This includes the nature of the treatment, its indications, and the potential risks and benefits. The patient, thus informed, then gives, or declines to give, their consent. This leads to three main areas of concern to the SIG: which procedures require informed consent, how it should be documented, and who should obtain it.

The American Medical Association agrees with the SIG's definition, stating that the patient's rights "can only be effectively exercised if they possess enough information to enable an intelligent choice." (2) The AMA states that it is the physician's obligation in this situation to provide adequate and accurate information to the patient so that they are able to determine their own course of treatment.

Which Procedures Require Informed Consent?

Although the exact list of interventions requiring this type of consent will vary according to the specific organization and its scope of services, there are some basic questions that the organization should ask when determining the need for informed consent. The first question is whether or not the proposed intervention carries risks, potential benefits, and/or side effects. This should include the period of treatment as well as the recovery period afterward. The second question is whether or not there are reasonable alternatives to the proposed intervention. If the answer to either question is Yes, then the intervention does require some form of informed consent. (1)

According to JCAHO, not all interventions performed within the organization require consent. Of those that do, not all of them require that the consent be documented and witnessed. JCAHO generally leaves these issues to the individual organization to address and resolve. However, some states have regulations governing this. In addition, case law may have a significant impact on the organization's determination of the need for informed consent. This is where the organization's legal counsel should be involved in order to meet all applicable regulations and restrictions. An important question to ask the organization is who developed their P&P regarding informed consent.

Documenting The Consent

As discussed above, informed consent is more than simply signing a document. The document should certify that the discussion of the intervention and all of its issues did, in fact, take place. We have seen two primary ways of documenting this consent: by an organization's consent form that is signed and witnessed, and by notes in the provider's progress record. There and pros and cons to both types of documentation.

A standard form that is used throughout the organization can serve as a useful tool to make sure that the staff has discussed all of the aspects that the organization feels is important. This makes it less likely that the person talking with the patient may leave out important information during the discussion. The form is written to conform with the organization's policies so that everyone is acting in accordance with internal rules. The biggest downside to this approach is that, too often, the form itself is seen by the staff as the entire process of informed consent. The form is signed in the appropriate places and filed in the chart, but the exchange of information (which is what the form is supposed to document) is limited to just what is written on the form.

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Informed Consent Means More Than Signing The Paperwork

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Each patient is a unique individual, and their situation is equally unique. A form that never changes does not give the patient the information that addresses their specific situation. It is an age-old problem in healthcare: you spend you time doing paperwork instead of doing the tasks that the paperwork is there to document.

Including a description of the discussion with the patient in the narrative notes can be a much more individualized recording. The best example of this that we have seen was part of a medical record on a patient that was seen at the Mayo Clinic. The surgeon's dictated notes included a detailed description of the discussion that he had with the patient prior to surgery. This narrative left no doubt that the exchange of information did, indeed, take place. The dictation included questions asked by the patient, and the answers were specific to the patient's age and health status. While this was an exemplary display of informing the patient, it also leaves room for error. A hurried physician or nurse may not remember to include all of the information that they should have. They may not include all of the discussion in the narrative notes, or they may omit some information in the discussion itself. This also means that everyone who obtains informed consent does so with their own style, focusing on their own concerns, rather than following the organization's rules regarding the information that should be given.

The best examples include both methods of documentation. This allows everyone who participated in the care of the patient- physicians, nurses, therapists, etc- to describe what they did to inform the patient, and what the patient's decision was. This combines the standardized, make-sure-you-don't-forget-anything form with the individualized description of the patient and their situation.

Who Should Obtain The Consent?

This is the most difficult thing about the process. The answer is, "It depends." Given the nature of the proposed intervention the nurse may be the patient's best resource. However, according to the AMA it remains the responsibility of the treating physician to make sure their patient is fully aware of their situation. In simple terms, the person who obtains this consent must be qualified to present the information and answer any questions that the patient may have.

So, What Do I look For In The Chart?

Analyzing this issue means that you must know the organization's internal policies and regulations**.** You must also ensure that the person or persons who are listed as obtaining the consent are, in fact, fully qualified to provide accurate and complete information and answer any questions that the patient may have. The documentation process should show what information was given and by whom, what questions were asked, and what the answers were. We also ask the patient, if they are available to us, what happened. If their account differs from the medical record, or they demonstrate that they didn't understand the situation by giving inaccurate descriptions, then you should make sure exactly what was done. When the patient cannot accurately describe their situation to us later it often means that they didn't understand it at the time. And that is what "informed" consent is all about.

Resources:

1. Joint Commission Resources: Obtaining Informed consent, accessed via www.jcrinc.com
2. American Medical Association publication E-8.08, Informed Consent, accessed via www.ama-assn.org

Oxygen Saturation

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even a concern. Things like patient's diagnosis, their age and medical history along with labs, how the O^2 sat was obtained and the general condition of the patient.

For instance, if the O^2 sat of 90% was on a young person with no history of any type of respiratory compromise, then this would be significant, especially if they seem to be having difficulty breathing, or their lips or fingertips are ashy or bluish. For a person with no history of any respiratory compromise, an O^2 sat of 92% or below is significant, and should be dealt with immediately. This is, of course, if the O^2 sat is from blood gases (ABG) or there are some signs of respiratory compromise. Relying on a pulse oximeter only is not a good idea, either, as those machines are not always reliable for any number

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Oxygen Saturation

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of reasons, such as running off the battery pack, not accurately calibrated, the patient isn't profusing properly, the probe isn't attached properly, or it may just be shorted out. Anyone who is having their O^2 sats monitored with a pulse oximeter should really have a base O^2 sat done from ABGs as well as periodic gases drawn, just to be sure the oximeter is working properly.

Now, if the patient is older and/or has a history of respiratory compromise such as COPD (chronic obstructive pulmonary disease) then an O^2 sat of 90% may not even be an issue. These people with chronic pulmonary diseases have developed compensation to lower percentages of oxygen in their blood, and actually do better on lower amounts of supplemental oxygen, as they retain carbon dioxide, and if given higher concentrations of oxygen, their O^2 sats will often not improve, and will actually become worsened with additional oxygen. Unlike their younger, healthier counterparts, their panic value is lower. In many cases the significant number to watch for can be as low as 88%. But, as I said earlier, there are many factors that come into play in determining this. The next time you look at an O^2 sat keep this in mind before you make a judgement in the care given by the healthcare team.

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