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Patient Safety Tip of the Week

June 13, 2023 Preventing Wrong-Site Surgery

A patient was taken to the OR for a right-sided craniotomy for drainage of subdural hematoma (CDPH 2022). A burr hole was erroneously drilled on the left side of the skull before the error was realized. When no drainage was noted coming out of the burr hole on the left side of the patient's head/skull, it was then the surgical team realized the burr hole was done on the wrong side. The patient then had a burr hole drilled on the right side for evacuation of the subdural hematoma. Investigation revealed that there was no site marking performed prior to the surgery.

At this facility, surgical prep of the patient is normally done prior to surgery and the nurse makes sure the consents are signed, the operative site is shaved or hair is clipped, and the site is marked. The site marking is done by the surgeon during the prep. In this case the patient's head was not shaved, and the right site was not marked prior to surgery.

Interview with a Licensed Nurse indicated it was the hospital's policy to do the pre-op checklist before the patient goes to surgery. The nurse further indicated the unit was short staffed and the hospital fired all the ancillary staff, which has affected patient care. The nurse stated, "We were swamped and had no secretaries to answer phones, the patient became combative, and I did not fill out the pre-op checklist."

Further, the nurse stated, "The surgeon normally marks the site, but we had no surgical marking pens in unit. I had never seen those pens before, we only had sharpies." The nurse further stated, "The surgeon took responsibility and indicated he did not mark the site and performed surgery on the wrong site."

The patient was brought to the OR and while on the OR table, the patient's hair was clipped, site was prepped, and the patient was draped by the surgeon and the physician's assistant. At this point the site could have been marked.

Details were not provided about the expected surgical timeout in the OR. If it was done, it obviously skipped the required step of verifying the site marking.

That failure to correctly perform a surgical site marking is one of three common team errors leading to wrong site surgery, according to Joint Commission Chief Patient Safety

Officer and Medical Director Haytham Kaafarani, MD, MPH, FACS in an interview with AORN staff (AORN 2023). Those 3 team errors are:

- Lack of full team attention during Time Out
- Inaccurate and non-visible site marking
- Not instilling a "speak up" culture, especially among new team members

Kaafarani notes that certain sites are more difficult to mark (see our May 14, 2019 Patient Safety Tip of the Week "Wrong-Site Surgery and Difficult-to-Mark Sites") and that the site marking should not be intentionally or accidentally placed under the drape at the point of the Time Out. "Every member of the team should confirm site marking is done, visible, and appropriate—the Time Out should be an opportunity to recheck correct surgical site marking as a team."

Regarding lack of full team attention during Time Out, Kaafarani notes "Time out must always be recognized as a primary step, not an action secondary to other OR activities." "Too often, team members are allowed to simultaneously proceed with other activities during the Time Out (such as continuing to drape or check the instruments and equipment) and this lack of full attention means those team members "are not fully tuned to communicate patient information or raise a concern." Kaafarani suggests enlisting one person responsible for rallying the team to fully engage in the Time Out. That means "giving this individual the authority to remind any team member not giving full attention during the Time Out that they need to do so, even during a routine surgery, during any surgery." Our own recommendation is that the surgeon should **not** be that individual. We've seen all too often that deference is given to the surgeon and other team members are likely to simply nod assent to the items noted by the surgeon. That, of course, leads to Kaafarani's third point – not instilling a "speak up" culture. Kaafarani notes that, given staffing challenges in recent years, it is particularly important to encourage new members of the team to be empowered to speak up. He emphasizes that team members still need to be encouraged to speak up, even if their concern is wrong (citing examples where someone is reluctant to speak up because several previous times they spoke up were not validated).

A recent review of 68 wrong-site closed claims cases (Tan 2023) found services most frequently responsible for these were Orthopedic (35.3%), Neurosurgery (22.1%), and Urology (8.8%). The most common types of procedures were spine and intervertebral disc surgery (22.1%), arthroscopy (14.7%), and surgery on muscles/tendons (11.8%). The top contributing factors to wrong-site surgery were failure to follow policy/protocol (83.8%) and failure to review the medical records (41.2%).

A study on insurance claims for wrong-side, wrong-organ, wrong-procedure, or wrong-person surgical errors in France (Vacheron 2023) also showed the main specialties involved were orthopedics (34% of cases) and neurosurgery (14%), but dentistry was involved in 14%. The main factors responsible for errors were the team factors (87%), followed closely by the task related factors (78%). A direct causal factor was found in 20% of the cases. The main causes were organizational factors (19%-43%), such as failure in the perioperative check list or during transmission of medical information. One

other major causal problem was related to the medical file (16%-36%), containing incomplete information or simply containing misleading information. Notably, 5 of the 6 cases of wrong-side locoregional anesthesia led to a wrong-side error during surgery.

Concerning neurosurgery, the errors were mainly related to vertebral surgery, mainly in the lumbar spine. Although preoperative radiological identification of the level of the lesion in neurosurgery had been part of the guidelines since the publication of the "Sign, Mark & X-ray" protocol in 2001, errors remain common because of congenital anatomical variations, overweight, or improper radiological exposure.

It probably should not be surprising that orthopedics typically heads the list of wrong-site surgery claims. That may be in part due to the sheer volume of orthopedic cases done and the fact that the issue of laterality appears more often than in, for example, abdominal surgery.

Several of our columns have noted the role that surgical booking and scheduling have in contributing to wrong-site surgery (see, for example, our October 30, 2012 Patient Safety Tip of the Week "Surgical Scheduling Errors"). But one orthopedic team took a unique approach to scheduling after a wrong-side knee surgery (Gapinski-Kloiber 2022). They took a close look at the root causes of the event and made a relatively simple change in practice to prevent it from occurring again - they decided to schedule left knees on one day and right knees on another, so equipment didn't need to be switched and there was no confusion about laterality.

A most interesting discussion of **"affirmative" vs. "negative" site marking** appeared in the Washington Post a couple years ago (Perlow 2021). Urologist David Perlow notes that The Joint Commission's Universal Protocol asks surgeons to sign the correct site before surgery, a concept adapted from the "Sign Your Site" campaign launched by the American Academy of Orthopaedic Surgeons in 1998. But Perlow notes the issue revolves around what happens when a patient is draped. He argues that marking the "wrong" side would allow the surgeon to still operate on the correct side when that mark was obscured by drapes. But a negative mark would appear if the incorrect side was prepped and the correct side was obscured by drapes. However, we see a flaw in that approach – what happens when neither side was marked, such as the index case described above! A more reasonable approach would be to mark both sides – one "yes" and one "no".

The Joint Commission reported 85 cases of wrong surgery in its review of sentinel events in 2022 (TJC 2023). That includes wrong site, wrong procedure, wrong patient, and wrong implant events. It is also likely an underestimate of actual cases. Unfortunately, solutions to the wrong-site surgery problem remain elusive and we continue to see this sentinel event, even in some of our finest medical centers. It's important to understand that this is not just the surgeon's responsibility – it is the responsibility of every member of the surgical team, and also those involved in OR scheduling, those ensuring that patient safety policies are complied with, and the patient him/herself. We hope you'll go back to our October 5, 2021 Patient Safety Tip of the Week "Wrong Side Again" and our

May 2022 What's New in the Patient Safety World column "PPSA: Updated Wrong-Site Surgery Recommendations" for detailed recommendations on what your organization should be doing to minimize the risk of wrong-site surgery.

Some of our prior columns related to wrong-site surgery:

September 23, 2008	"Checklists and Wrong Site Surgery"
June 5, 2007	"Patient Safety in Ambulatory Surgery"
July 2007	"Pennsylvania PSA: Preventing Wrong-Site Surgery"
March 11, 2008	"Lessons from Ophthalmology"
July 1, 2008	"WHO's New Surgical Safety Checklist"
January 20, 2009	"The WHO Surgical Safety Checklist Delivers the Outcomes"
September 14, 2010	"Wrong-Site Craniotomy: Lessons Learned"
November 25, 2008	"Wrong-Site Neurosurgery"
January 19, 2010	"Timeouts and Safe Surgery"
June 8, 2010	"Surgical Safety Checklist for Cataract Surgery"
December 6, 2010	"More Tips to Prevent Wrong-Site Surgery"
June 6, 2011	"Timeouts Outside the OR"
August 2011	"New Wrong-Site Surgery Resources"
December 2011	"Novel Technique to Prevent Wrong Level Spine Surgery"
October 30, 2012	"Surgical Scheduling Errors"
January 2013	"How Frequent are Surgical Never Events?"
January 1, 2013	"Don't Throw Away Those View Boxes Yet"
August 27, 2013	"Lessons on Wrong-Site Surgery"
September 10, 2013	"Informed Consent and Wrong-Site Surgery"
July 2014	"Wrong-Sided Thoracenteses"
March 15, 2016	"Dental Patient Safety"
May 17, 2016	"Patient Safety Issues in Cataract Surgery"
July 19, 2016	"Infants and Wrong Site Surgery"
September 13, 2016	"Vanderbilt's Electronic Procedural Timeout"
May 2017	"Another Success for the Safe Surgery Checklist"
May 2, 2017	"Anatomy of a Wrong Procedure"
June 2017	"Another Way to Verify Checklist Compliance"
March 26, 2019	"Patient Misidentification"
May 14, 2019	"Wrong-Site Surgery and Difficult-to-Mark Sites"
May 2020	"Poor Timeout Compliance: Ring a Bell?"
September 14, 2021	"Wrong Eye Injections"
October 5, 2021	"Wrong Side Again"
November 9, 2021	"Ensuring Safe Site Surgery"
February 15, 2022	"Wrong-Side Chest Tubes"
May 2022	"PPSA: Updated Wrong-Site Surgery Recommendations"

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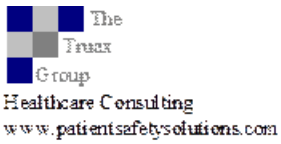

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