

Urinary Tract Injury: Early Recognition May Save the Day

Ronald T. Burkman, MD; Jennifer L. Fennell, Esq

Proper attention to risk factors, counseling, management, documentation, and follow-up may prevent litigation.

You are performing an abdominal hysterectomy and bilateral salpingo-oophorectomy for a patient with severe endometriosis on Friday afternoon before you are scheduled to leave for a weekend at the beach. She has failed medical management and has had 2 prior surgical procedures for lysis of extensive adhesions and removal of an endometrioma.

CASE SCENARIO

The patient has a history of well-controlled hypertension, type 2 diabetes, and chronic back pain attributed to a prior injury; her BMI is 42.

The physical examination was normal except for obesity and a uterus that felt slightly enlarged but fixed in the pelvis. You had counseled the patient that, as with all hysterectomies, there could be bleeding, infection, and anesthetic problems. The notes in both your office record and hospital chart state only that “patient counseled about the risk of surgery.”

The patient’s preoperative laboratory studies, including complete blood count, electrolytes, and creatinine, and EKG were normal. Since her prior procedures utilized a Pfannenstiel incision, you have elected to use that same incision site for your surgery. The procedure, completed with a second-year resident as your assis-

tant, proves difficult due to adhesions, scarring, bleeding while securing the uterine arteries, and the enlarged uterus obstructing some of the exposure in the deep pelvis. When inspecting the ureters near the pelvic brim, peristalsis of both ureters is seen.

You complete the procedure after about 3 hours. The patient is stable in the recovery room and when transferred to the floor. You briefly sign out the patient to one of your partners who is covering for the weekend, stating that it was a tough case but everything seems fine now. In your haste to leave for the beach, you forget to fill out a brief operative report and leave the dictation for the resident.

On Saturday, a different resident notes the patient has stable vital signs, adequate urinary output, and both abdominal and back pain. The back pain is attributed to her prior injury. The Foley catheter is discontinued, and a complete blood count and electrolytes and creatinine are ordered. Your partner sees the patient shortly after the resident, and a brief note states he agrees with the findings.

The laboratory results posted later in the day show a modest decrease in the hemoglobin and hematocrit and an elevation of the creatinine of 0.8 mg/dL. When seen the following day by both the resident and your partner, the patient has similar complaints, but the back pain is now localized to the right flank. In reviewing the laboratory results, your partner notes the rise in the creatinine level and asks the resident to obtain a stat urology consult for possible urologic injury.

Ronald T. Burkman, MD, is Professor, Division of General Obstetrics and Gynecology, Baystate Medical Center, Springfield, MA; Professor, Department of Obstetrics and Gynecology, Tufts University School of Medicine, Boston, MA; and Editor-in-Chief, *The Female Patient*.
Jennifer L. Fennell, Esq, is Attorney, Law Offices of William J. Fennell, PC, West Springfield, MA.

The resident relays the request to her replacement, who orders the consult several hours later because of having to manage some emergency situations and forgetting to request it stat. Since the order was not put in “stat,” the urologist does not see the patient until the following day. At that time, he orders an intravenous pyelogram, which when completed shows ureteral obstruction on the right side.

A cystoscopy is performed the following day, and a ureteral stent is passed through a probable inked ureter with relief of the obstruction. In discussing the events with the patient, she seems concerned about not being aware of this possible complication, the delay in diagnosis, and the involvement of multiple resident physicians in her care.

In reviewing the operative note, you find a number of errors in the description of the surgery. You decide to go over the case with your partners as part of an “internal” quality improvement review.

SCENARIO ISSUES

This hypothetical case, which describes a known complication that ultimately was managed appropriately, illustrates a number of problems that potentially could be difficult to explain should there be litigation. Fortunately, the recognition and successful management of the complication in the time frame described would significantly mitigate the chances of legal action. One can divide the issues that arise with this case into several categories: risk factors, counseling, management, documentation, and follow-up.

Risk Factors

Although urinary tract injury can occur in the absence of risk factors, there are several risk factors in this case that should have made the gynecologic surgeon particularly vigilant. Hysterectomy, particularly by the open abdominal and vaginal approaches, has been shown to be associated with ureteral injury. Moreover, there are additional risk factors that increase the likelihood of this complication. These include prior pelvic surgery, endometriosis, and obesity, all of which this patient had as clinical features.

Additionally, poor exposure, related to the choice of a low transverse abdominal

entry and the uterine size, coupled with adhesions and difficulty in controlling bleeding at the level of the uterine arteries, all increased the chances for the ureteral injury that occurred. Ideally, the physician performing the case should have considered this information and perhaps decided on using a midline incision and having a more experienced individual to assist him.

Counseling

At the time the decision was made to proceed with hysterectomy, the physician should have had an in-depth discussion with the patient regarding the risks that she faced. Given her clinical situation, counseling regarding the increased difficulty of the planned surgery was warranted, including explanation of an increase in the likelihood of urologic injury compared to other patients.

The patient should also have been informed that some of her care would be provided by residents under your direct supervision and that the partners in the practice share on-call coverage. Finally, a brief discussion with the patient postoperatively was necessary to indicate that the surgery was difficult and she would be monitored closely for possible problems.

Management

Since the preoperative diagnosis was severe endometriosis in the setting of 2 prior pelvic surgeries and obesity, at least some consideration should have been given to the placement of prophylactic ureteral catheters. Use of such catheters assists in palpation of the ureters prior to placing clamps in the vicinity of the ureters, when the anatomy is likely to be distorted. Although the physician noted peristalsis of the ureters prior to closure, it is important to realize that this finding helps identify the ureter but does not exclude injury, since peristalsis may be present in individuals with ureteral injury.

Since this case was complicated, consideration should have been given to performing an intraoperative cystoscopy following injection of indigo carmine dye. Absent egress of dye from the right ureteral orifice would have alerted the physician to consider the possibility of ureteral obstruction or transection. The presence of right flank

FOCUSPOINT
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pain should have alerted the covering physician and resident to contrast it with the patient's usual back pain. If substantially different, earlier investigation for possible urologic injury should have been undertaken. Fortunately, the covering physician noted an elevation of the creatinine post-operatively and obtained a urology consult that eventually resulted in appropriate diagnosis and treatment.

Documentation and Follow-Up

The documentation in this case was cursory at best. Risk factors were not acknowledged, nor was counseling specific to this patient's clinical picture documented as part of the consent process. Failure to discuss the case in greater depth with the covering physician and not completing the brief operative note created a situation in which there was lack of clarity regarding the potential risk of complications.

Since the procedure was done on a Friday, it was highly unlikely that the dictated operative would be available until the next week. Also, since this was a difficult case and the assistant was not very experienced, the attending physician should have completed the dictation.

The attending's notes on the first and second postoperative days should have been more detailed and specific relative to what was expected of the covering residents, eg, discuss laboratory results when back the first day and obtain a stat urology consult on

the second day. This is particularly important since if this was a residency program in which a night float on-call system was in place, the patient may have been followed by as many as 5 or 6 different residents during the first 4 days of her stay.

INTERNAL REVIEW

At the time of the internal practice review, the partnership, in examining this case, decides that they need to have a formal hand-off approach, both among themselves and also with residents. The topic of handoffs will be covered in greater depth in an upcoming LegalEase article. The group also decides that when scheduling difficult cases for surgery, they should request a senior resident for an assistant. They also recognize that the documentation as discussed above needs to be improved. From their perspective, this case represents a "near miss" that gives them a chance to alter their process of care in order to avoid a future preventable catastrophic outcome.

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SUGGESTED READING

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