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Genitourinary Fistula

A Guide for Women

What is genitourinary fistula?

Genitourinary fistulas are abnormal passages or openings between the vagina, urethra, bladder or ureter. This abnormal passage may occur between the vagina and/or uterus and the bladder, urethra or ureter and is called a fistula tract. Typically caused by trauma from surgery or during delivery, a genitourinary fistula tract will cause urine to be directed away from its normal location in the ureters (tubes that bring urine from the kidney to the bladder), bladder or urethra. Depending on the anatomical location of the fistula tract it can be called a ureterovaginal fistula, ureterouterine fistula, urethrovaginal fistula, vesicouterine fistula, or vesicovaginal fistula.

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- Women with a genitourinary fistula may have many of the following symptoms:
- Continuous urinary leakage from the vagina after trauma or injury
- Leakage may be continuous or intermittent and can be confused with stress incontinence
- Foul-smelling or persistent discharge often precedes urinary leakage
- Vagina smells of urine
- Voiding small amounts of urine, as bladder never gets full
- Urinary tract infections; flank pain and/or fevers may be a sign of a kidney infection or an ascending urinary tract infection
- Abdominal pain, nausea, vomiting, anorexia, abdominal distention or a small bowel obstruction which could be caused by urine leading into the abdominal cavity

What causes genitourinary fistulas?

Some fistulas can be congenital, meaning that a woman is born with an abnormal fistula tract, but most are caused by trauma related to surgery or delivery. In developing countries 90% of genitourinary fistulas are caused by obstetric trauma during obstructed labor. In developed countries 75% of fistulas are caused by gynecologic or other pelvic surgery. There is usually a direct injury to the genitourinary tract that causes a fistula to develop following a surgical procedure, though fistulas may develop later, 7-21 days after a surgery, if there was tissue damage (poor blood supply), tissue death, and/or infection that interfered with wound healing.

Risk factors for development of a genitourinary fistula include:

- *Pelvic surgery risks:* cesarean section, surgery for endometriosis, or surgery following prior pelvic irradiation
- *Obstetrical risks:* obstructed labor, operative delivery (such as a forceps or vacuum delivery), and hysterectomy following a delivery
- *Other conditions:* malignancy, gastrointestinal surgery, retained foreign bodies (e.g. pessaries), prior radiation exposure to pelvis

How is a genitourinary fistula assessed?

An initial discussion with your doctor, who reviews your health history and recent surgeries, can help him/her suspect a possible genitourinary fistula tract, though most women complain of constant leakage.

Initially, a pelvic exam should be done to assess where the urine is leaking from (it typically leaks into the vagina). A vaginal exam will focus on visualizing the location of urine leakage. A pill that can change the urine color can be given to help differentiate vaginal discharge from urine to help localize the fistula tract.

If a pelvic exam fails to localize the fistula, further testing of the bladder can be done. The bladder can be filled with a colored dye to help complement the vaginal exam to see if urine is leaking into it. This process may not identify a ureterovaginal fistula as the tubes that bring urine from the kidney to the bladder do not change color when the dyed fluid is placed in the bladder through a catheter.

Further testing with cystourethroscopy (using a camera to look in the bladder and urethra) may help localize the fistula tract. It can help your doctor see how close the fistula tract is to the ureters and help determine the best surgical approach to fix the fistula. Injury to the ureters may be of concern and additional radiologic imaging such as CT urography may be needed.

What are the treatment options?

Not all fistulas need surgical intervention. Fistulas that are diagnosed early (usually within the first week or two of an injury) and are small can close after prolonged draining of the bladder with a catheter. Further imaging may be required to confirm the fistula tract closed on its own. If an injury or the fistula tract involves the ureter, then a stent should be placed. Prolonged stenting may allow for the fistula to close.

In many cases, surgical repair is the treatment. Only a specialist with training in the surgical correction of genitourinary fistulas should do this surgery. If the fistula tract is identified within a few days of the trauma, it can be repaired right away. Oftentimes surgery may be delayed after the initial trauma that caused the fistula in order to allow the tract to mature and inflammation to decrease, enabling better surgical planes and tissue to fix the fistula tract.

The surgical approach to genitourinary fistulas may include a vaginal approach, abdominal approach, or going through the bladder itself. The type of surgical approach depends on the fistula location, other health conditions, and size of the fistula. Oftentimes the tissue near the fistula tract has a poor blood supply and may need a graft to help promote healing near the fistula tract. Grafts can include a woman's own tissue or muscle that is placed over the repaired fistula tract. Other biologic grafts taken from animal tissue or human cadavers can also be used. In some complex cases of genitourinary fistulas, as part of the repair process, it may be necessary to route urine away from the fistula tract to allow it to heal. This may involve draining the kidneys with nephrostomy tubes, or reconstructing the small or large bowel to divert urine through it.

Though genitourinary fistulas are not that common, surgical success rates are high, ranging from 84-100%. Following surgery, prolonged bladder draining with a catheter will be needed.

For more information, visit *www.YourPelvicFloor.org.*

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