Urologists report success using robot-assisted surgery for urinary abnormality

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Ashok Hemal, M.D., a urologic surgeon from Wake Forest University Baptist Medical Center, and colleagues have reported success using robot-assisted laparoscopic surgery to repair abnormal openings between the bladder and vagina known as fistulas. Reporting on their experience with seven patients, Hemal and colleagues have the world's largest known success with the procedure.

Their report appears online in the *Journal of Urology* and will be included in a future print issue.

This type of fistula can result in frequent urinary tract infections and the leakage of urine from the vagina and can be mistaken for continence. All women had previously undergone unsuccessful surgeries to repair the problem. In most cases, the patients in the report would undergo abdominal surgery requiring a large incision. Instead, centimeter-sized instruments and a small camera were inserted through five small incisions in the abdomen.

"There was less blood loss with this procedure than with conventional surgery and there is the potential for a faster recovery," said Hemal, director of the Robotic and Minimally Invasive Urologic Surgery Program at Wake Forest Baptist. "The results were outstanding and suggest the robot-assisted surgery is an attractive option for fistulas that would normally require abdominal surgery."

Robot-assisted surgery is a popular option for heart and prostate surgery

and in recent years physicians have started using it for other procedures. The da Vinci® surgical system has four robotic arms with centimeter-sized instruments attached. The surgeon controls these arms with hand and finger movements while viewing the surgical site on a screen. The tiny instruments – as well as the ability to see the surgical site at tenfold magnification – allow for very precise, refined movements.

The type of fistula that the surgeons repaired can occur one to six weeks after gynecologic or obstetric surgery, such as a hysterectomy. The women in the report had fistulas located in the supratrigonal region, which is at the lower portion of the bladder near the tubes that carry urine from the body. Fistulas in other areas can often be repaired with a vaginal approach or with laparoscopic surgery, which uses a camera and small incisions – but is not robot-assisted. However, these approaches are not generally used in the supratrigonal region because the physician must work at an extreme angle.

"Robot-assisted surgery has promise to bridge the limitations of laparoscopic surgery and allow more women with fistulas, urinary incontinence or prolapsed pelvic organs to benefit from a minimally invasive approach," said Hemal.

Hemal had previously published a report in Urology (May, 2006) using robotic-assisted surgery to repair first-time fistulae in women. All the patients in current report had undergone previous failed surgeries -- five of the women had at least two failed prior surgeries. With the robot-assisted approach, mean operating time was 141 minutes and mean hospital stay was three days.

Hemal also has experience using robot-assisted surgery to repair fistulas between the bladder and uterus and between the uterus and vagina, as well as performing surgeries for urinary incontinence and prolapsed organs. The surgeries are a treatment option offered by the Wake Forest

Baptist Continence Center, which is co-directed by Gopal Badlani, M.D., and John J. Smith, M.D.

Hemal's colleagues on the report are Surendra Kolla, M.D., and Penkaj Wadhwa, M.D., both from the All India Institute of Medical Sciences in New Delhi.

Source: Wake Forest University