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Case report

Radical retropubic prostatectomy frustrated by prior laparoscopic mesh herniorrhaphy

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A 57-YEAR OLD MAN was found on routine screening to have a serum prostate specific antigen (PSA) level of 4.1 ng/mL, and was referred for evaluation. He had bilateral induration at the base of the prostate. A transrectal ultrasonography and prostate needle biopsy were performed based on the elevated PSA. The ultrasonography revealed no abnormalities, but 3 of 10 core biopsies obtained under ultrasonographic guidance revealed prostatic adenocarcinoma. There were 2 positive biopsies on the left and 1 on the right; the Gleason score in each core was 3 + 3. The patient had a history of laparoscopic bilateral hernia repair with the use of mesh approximately 6 months before his referral. His past medical history was otherwise significant only for hypertension.

Based on his serum PSA (<10 ng/mL), Gleason score (no pattern 4 or 5 disease), and clinical stage (T2c based on the 2002 American Joint Committee on Cancer and the International Union Against Cancer classification), the patient was felt to have low-risk prostate cancer. After considering the various treatment options available, the patient elected to undergo radical retropubic prostatectomy with a bilateral nerve-sparing approach.

At the time of exploration of the retropubic space, very dense adhesions involving the bladder,

prostate, and pelvic sidewall were found. The endopelvic fascia was also indurated. These changes were attributed to the previous laparoscopic bilateral mesh herniorrhaphy. Despite midline incision of the mesh, it became apparent that extensive adhesions extended between the mesh and the bladder and prostate. The patient had expressed a strong desire for bilateral nerve sparing, but due to the extent of the adhesions, neither nerve sparing nor complete removal of the prostate could be assured. Therefore, after an intraoperative discussion with the patient's family, the decision was made not to proceed with retropubic prostatectomy.

The patient's postoperative recovery was uneventful. He was referred to a radiation oncologist, and, 6 weeks after the operation, underwent transperineal permanent seed implantation for prostate interstitial radiotherapy. His first PSA after brachytherapy (3 months after implantation) was 1.5 ng/mL; to date he has maintained his potency.

DISCUSSION

Inguinal hernia and prostate cancer are both highly prevalent diseases. More than 750,000 hernia repairs are performed annually in the United States alone, 90% of them in men and 80% involving a mesh prosthesis.¹ The estimated US incidence of prostate cancer in 2003 is 220,900—the highest of any noncutaneous human malignancy.² Radical prostatectomy, usually performed from a retropubic approach, is the most common treatment for localized prostate cancer, particularly among younger men and those with favorable risk disease. The procedure offers excellent long-term oncologic outcomes. Postoperative

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penile erectile function—a critical determinant of health-related quality of life after any treatment for prostate cancer—depends heavily on the surgeon's ability to perform an anatomic dissection that preserves the neurovascular bundles carrying the cavernosal nerves to the corpora cavernosa.³

Laparoscopic mesh herniorrhaphy was first described in 1982, and since the mid-1990s has become a popular option for patients with inguinal hernia, particularly those with bilateral hernias or with failed prior open repairs.¹ The equivalence of laparoscopic and open tension-free herniorrhaphy techniques in terms of recurrence and complications has not been established with certainty, but is the subject of a large Veterans Affairs cooperative study, in which 2165 men at 14 centers were randomized to open or laparoscopic repair; their outcomes will be followed over 2 years.⁴

We are aware of only 2 prior reports of prostatectomy complicated by prior laparoscopic herniorrhaphy.^{5,6} In the first report of 2 cases, 1 procedure was abandoned, and the patient received neoadjuvant androgen ablation and external beam radiotherapy. The other prostatectomy was completed, but required removal of the mesh and débridement of the anterior bladder wall, complicating the vesicourethral anastomosis. The authors note that they have subsequently counseled prostate cancer patients who have a history of laparoscopic mesh herniorrhaphy to consider either perineal prostatectomy or radiotherapy.⁵ In another case presentation, surgery was likewise abandoned due to severe retropubic scarring, and the patient underwent radiotherapy.⁶

Given the high prevalence of both inguinal hernia and prostate cancer among aging men, we predict the situation we describe will become more common as laparoscopic hernia repair is performed more frequently. In most cases, retropubic prostatectomy should be feasible after laparoscopic

mesh herniorrhaphy, but would be more difficult and present greater hazard to the cavernosal nerves. While the laparoscopic approach to hernia repair is an attractive alternative, we suggest that the potential for complication of future nerve-sparing prostate surgery—or possible ineligibility for surgery—should likely be included among informed consent discussions with patients who are weighing management alternatives for inguinal hernia repair. Men over 50 or those over 40 with high risk factors for prostate cancer should be screened for the disease before undergoing laparoscopic mesh repair. Finally, scarring induced by mesh in the space of Retzius may be attenuated by technical modifications such as not placing the mesh significantly inferior to the pubic ramus and using 2 pieces of mesh placed bilaterally but sparing the midline, rather than placing a single large piece across the midline.

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