Introduction

Sexual dysfunction can be defined as the inability to partake in or enjoy a sexual relationship with one's partner as a result of underlying physical and/or psychological factors. Although there is an alteration in sexual response with aging, age is not a deterrent to enjoying and maintaining a normal, healthy sex life. The elderly are often subject to health problems, and their sexual activity can be affected by various illnesses, medications, and changes in lifestyle. It is important for the physician to become aware of the various types of sexual dysfunction in the elderly and to understand that treatment may involve addressing social as well as medical concerns.

Illustrative Case

History and Physical Examination

The patient was a 70-year-old man who was referred to a urologist by his orthopaedist for evaluation of erectile dysfunction. The patient stated that the problem began gradually after he underwent arthroscopic right shoulder surgery 1 month previously. Since then, he had been unable to maintain an adequate erection long enough to engage in intercourse with his wife. Furthermore, sometimes he became so anxious that he was unable to obtain any form of an erection. He stated that his wife had been very understanding, attributing his problem to "getting old."

The patient had been in excellent health throughout his life, except for the tendinitis in his right shoulder. Since the operation, he had been relatively pain-free and had not suffered any perioperative complications. During preoperative testing, it was noted that he was hypertensive, with a blood pressure of 156/95 mm Hg. He was then placed on a regimen of propranolol for hypertension control. He denied any history of asthma, diabetes, peptic ulcer disease, or neurologic or peripheral vascular disease. His use of alcohol was limited to social functions. He had a history of smoking one pack of cigarettes a day for 20 years, which he stopped 20 years ago. His family history was significant for hypertension and cardiovascular disease. His medications included ibuprofen and propranolol. He used to be an investment banker, but had retired 10 years ago. He and his wife traveled back and forth between their homes in New York and Florida.

On physical examination, the patient was a slightly overweight elderly man in no acute distress. He was pleasant, appeared to be well nourished, and seemed to be in a state of good health. His blood pressure was 135/90 mm Hg, and his pulse was 76. His neck was supple, without evidence of jugular venous distention. His lungs were clear to auscultation with normal breath sounds. His heart rate was normal, and the rhythm was regular, without any audible murmurs or gallops. His abdomen was soft and nontender, with normoactive bowel sounds. His testes were of normal size and consistency without masses or tenderness; no penile deformity or discharge was present. Motor strength was 5/5 in all extremities, and sensory examination was intact to light touch and pinprick. Proprioception was also intact, and reflexes were 2+ throughout. His pulses were 2+ bilaterally in both upper and lower extremities.

Diagnostic Considerations

The differential diagnosis for erectile dysfunction is multifold. Both physical and psychological factors can play an important role in the etiology of erectile dysfunction in the elderly. Studies have
shown a direct correlation between erectile dysfunction and heart disease, hypertension, diabetes, neurologic disorders, and use of various medications, as well as with psychological and lifestyle factors. Furthermore, both acute and chronic musculoskeletal conditions can have an impact on sexual fulfillment; for example, painful hip abduction secondary to degenerative hip disease can be an obstacle to sexual activity.

Further workup of such a patient should evaluate whether there are any underlying vascular, endocrinologic, neurologic, or iatrogenic reasons for the problem. The physical causes of sexual dysfunction must be ruled out before one can assume that the problem is strictly psychogenic, because physical factors predominate in about 75% of cases of erectile dysfunction.

Treatment and Outcome

The urologist noted that the patient was taking a medication that could have contributed to his erectile dysfunction. After tapering and finally discontinuing the beta-blocker (propranolol), the patient began to regain much of the function that he had lost over the previous month. His hypertension was managed instead with a calcium channel blocker, which maintained his blood pressure within acceptable limits.

Male Sexual Dysfunction

Erectile dysfunction is generally considered to be the most common serious sexual dysfunction in men. Understanding the basic physiology of an erection is essential to understanding the various causes of dysfunction (Fig. 1). An erection is under parasympathetic control, mediated by the neurotransmitter acetylcholine, which acts on endothelial cells to release a second carrier, nitric oxide, which in turn relaxes trabecular smooth muscle. During erection, there is sinusoidal filling within the corpora cavernosa due to smooth muscle relaxation. There is increased arterial flow into the corpora secondary to arterial dilatation and concomitant decreased venous outflow. Prostaglandin is another neurotransmitter that is thought to play a role in regulation of smooth muscle relaxation, which serves to accommodate the increase in blood volume within the penis.

Etiology

Any pathologic change that disrupts the physiologic pathway described above can lead to erectile dysfunction. Decreased arterial inflow, increased venous outflow, or peripheral neuropathy may interfere with erectile function. The presence of vascular or peripheral neurologic problems may suggest similar problems involving the penis. Therefore, it is important to obtain a thorough history and a complete physical examination when evaluating erectile dysfunction.

Erectile dysfunction is usually a multifactorial problem and rarely affects the penis in isolation. For example, in Peyronie’s disease there is an abnormal curvature to the penis due to spontaneous fibrosis, with deposition of linear plaques along the length of the penis. This abnormal curvature may preclude vaginal penetration and make intercourse both difficult and painful.

The endocrinologic effects of androgens on libido and sexual behavior are well known, but their effect on the erectile mechanism and their contribution to erectile dysfunction are not as clear. A number of drugs can contribute to the onset of erectile dysfunction, among them all the antihypertensives, many antidepressants, antipsychotic and anxiolytic agents, non-steroidal anti-inflammatory drugs, cardiovascular agents, and various recreational drugs.

Evaluation

Patient assessment should begin with a thorough history of the development of the dysfunction, with emphasis on whether the
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onset was sudden or progressive. A sudden onset with an intermittent course accompanied by communicative difficulties at home may lead one to look into a psychological origin; adequate erections during masturbation and during sleep would contribute to this diagnosis. Progressive loss of erections may be due to neurologic, vascular, or iatrogenic factors. When waking, nocturnal, and central stimulation (fantasy) erections are absent, neurologic causes should be considered; however, erection through direct stimulation of the penis may still be possible due to the function of the sacral reflex arc.

With progressive, atherosclerotic small-vessel disease there is a progressive loss of all types of erections, since it is the terminal step in erection capability that is dysfunctional; erectile response to both direct and central stimulation is decreased. Vascular competence can be evaluated on the basis of the penile-brachial pressure index or can be assessed with two-dimensional Doppler imaging. A vasodilator solution composed of prostaglandin E1 and phentolamine can be injected into the corpora cavernosa to assess vascular competence. The patient is then asked to rate the quality of erection after 10 minutes. If the erection is anything less than that required for penetration, the patient may suffer from severe arterial disease or a venous leak.

Drug-induced erectile dysfunction may be problematic to assess, as it may be unclear whether it is the disease or the drug that is causing the deleterious effect. A definitive diagnosis can be made if there is a dose-related response when the patient stops taking the medication in question. It may not be feasible to discontinue certain medications, however, so good judgment is essential when assessing possible drug effects on erectile function. Obviously, certain drugs, such as ethanol and nicotine, should be terminated, given their inhibitory effect on erectile function.

Treatment

There are many different theories about the treatment of erectile dysfunction, and the application of each modality remains controversial. The most important aspect of treatment is to involve both the patient and the partner in the decision-making process. In some cases, the couple may require only a discussion of the underlying issues that may be interfering with their sex life. Some treatments focus directly on correcting the cause underlying the dysfunction; others provide transient symptomatic and functional relief. For example, if sexual dysfunction is related to painful hip abduction secondary to osteoarthritis, the couple may be counseled to try alternative sexual positions or to take pain medication before sexual intercourse.

Oral medications such as yohimbine, isoxtsuprine, and pentoxifylline have been utilized, but their effectiveness has not been documented. Negative-pressure-inducing vacuum devices have been used with great success. An erection can be obtained by the vast majority of men who use them, and the erection can be maintained by placing a constricting band at the base of the penis to prevent venous outflow. This option is considered noninvasive, but it requires considerable patience as the patient learns how to apply and use the device; furthermore, the couple must understand that some innovation may be required to counteract the lack of spontaneity involved in its employment.

The use of vasodilator therapy has become popular and effective with patients. Vasoactive substances are injected directly into the corpora cavernosa of the penis or placed intraurethrally via the meatus to chemically induce an erection. Alprostadil (prostaglandin E1) is currently the only drug approved for intracavernoosal or intraurethral use. The level of satisfaction has been rated as excellent by 87% of patients and by 68% of partners. The major reported complication has been mild penile pain.

Surgical implantation of a semi-rigid or inflatable penile prosthesis is another option. The results are generally excellent, but because this is a more invasive therapy, it is usually reserved for cases in which less invasive treatment has failed. Arterial or venous surgery is appropriate for only a select few patients.

Female Sexual Dysfunction

Etiology

The patient in the illustrative case could just as easily have been a woman with the same history and general physical examination findings, although her most likely presenting complaint would have been dyspareunia. She might have described pain with intercourse or severe vaginal dryness that made penetration both difficult and painful. This may be due to postmenopausal vaginal atrophy, which results in poor lubrication of the mucosa, complicated by subsequent friction injuries during intercourse. There are many different causes of dyspareunia, including inflammation of the vulva and vagina, interstitial cystitis, pelvic inflammatory disease, chronic pelvic inflammation, and
pelvic and gynecologic neoplasms. Adhesions and fibrosis as a result of surgical procedures and radiation therapy may also cause dyspareunia. An important orthopaedic cause of dyspareunia is sacral nerve-root compression due to lumbosacral exostosis formation after pelvic fracture.

Intracoital incontinence is another problem experienced by elderly women that can affect both their physical and their psychological desire to engage in sexual intercourse. It is important for the physician to be very understanding and objective when eliciting a sexual history. Many of these problems are embarrassing to the patient and are often underreported for that reason. It may take time for the patient to feel comfortable enough to volunteer such information.

Anorgasemia is another frustrating problem that is not uncommon among elderly women. It usually does not have a pathologic correlate. Treatment must be individualized in each case, but the problem may be resolved with supportive therapy and sex education.

Psychological barriers develop in many women after gynecologic surgery, such as hysterectomy, and after mastectomy. Their distorted body images may cause them to feel that their essential femininity has been violated; they may actually be in a state of mourning for a lost part of themselves. These women subsequently have a decreased libido, engage in sexual intercourse less frequently, and have trouble reaching orgasm. Sex education and counseling are essential to restoration of their well-being. It is extremely important to involve the partner in the process so that he or she will understand what the patient is experiencing and what needs to be done to enhance sexual pleasure.

**Treatment**

Management of sexual dysfunction in women is very similar to that in men. Sex education and counseling are essential, and involvement of the partner is paramount to the healing process. A thorough history and physical examination will usually direct the development of the treatment plan. Management of underlying medical problems can have a profound impact. If a urogenital disease is identified, it can often be addressed quickly with the use of new oral and topical medications.

Postmenopausal vaginal atrophy has been treated successfully with topical estrogen application, although the patient is just as prone to the systemic side effects as with oral preparations. The beneficial effects of estrogens are well documented. Estrogen increases vaginal secretion and reverses atrophy of the vulva, vagina, urethra, and trigone of the bladder. The lubrication will relieve much of the friction and trauma associated with sexual intercourse, and the resultant vitality of the sexual tissues is important in maintaining normal sexual function.

Intracoital incontinence is unique with respect to the different treatments needed for the various mechanisms of urinary loss. Stress incontinence is common, especially among multiparous women. Parturition may weaken the pelvic support of the bladder and urethra. Treatment consists of pelvic-muscle strengthening and estrogen therapy, which helps to prevent atrophy of the urethral mucosa and enables the patient to have more control over the passage of urine. Severe urinary incontinence may require surgical intervention to improve pelvic stability and correct prolapse of the uterus and/or bladder.

Detrusor instability is another cause of incontinence, in which the bladder is subject to uncontrollable contractions due to the loss of inhibitory neural pathways. Imipramine and certain calcium channel blockers have been found to reduce the number of these contractions, resulting in less frequent incontinence. Anticholinergic drugs, such as oxybutynin, have also been used to control detrusor instability.

**Summary**

When broaching sex-related topics with an elderly patient, the physician must realize that he or she may be venturing into uncharted territory as far as patients are concerned. The elderly of today were brought up in society when attitudes toward sexual activity were much different from what they are today. They may be very hesitant to share problems related to sexuality, and it is important to provide a comfortable arena for discussing such sensitive issues. Because sexual function is such an important component in the quality of life of both the young and the elderly, the physician should not hesitate to include a sexual history as part of the complete patient evaluation. A small change in medication, sex education and counseling, or addressing a medical or sexual condition can have a profound impact on the patient’s life. It is well worth the time and effort needed to investigate these problems in the elderly, because a healthy sex life promotes maintenance of both physical and mental health.
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Suggested Reading


