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Evaluation of the Patient with Erectile Dysfunction

History, Questionnaires, and Physical Examination

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Historically the province of urologists and sex therapists, erectile dysfunction (ED) is now managed predominantly by primary care practitioners. In recognition of this trend, simplified assessment and treatment models have been proposed. These new treatment models strongly emphasize the need for sexual inquiry in all middle-age and older men but deemphasize the value of intensive medical or psychologic assessment in most cases. New management guidelines emphasize the need for a brief sexual and medical history, physical examination, and standard laboratory tests to rule out diabetes, dyslipidemia, or hypogonadism.

Key Words: Physical examination; risk factors; sexual history; psychosocial history.

Case History

Dan B. is a 58-yr-old, married accountant with a 4-yr history of erectile dysfunction (ED). He reports increasing difficulty in achieving or maintaining erections and has not had sexual intercourse for the past 18 mo. Sexual desire has also declined, although he misses the physical and emotional intimacy of sex. His wife, Betty, has also experienced a loss of sexual desire and has difficulty in becoming sexually aroused since the onset of menopause 5 yr ago. However, she reports some improvement in these symptoms since she began taking hormone replacement therapy in the past year. The couple has two grown children and enjoy a close relationship in other respects.

Dan's medical history is significant for hypertension for the past 10 yr. He has been treated with several medications, including diuretics and β-blockers and has been attempting to lose weight (current weight is 215 lb). He has also been diagnosed with hypercholesterolemia and is currently taking a lipid-lowering medication (lovastatin) for this problem. Dan's work situation is moderately stressful, particularly since the accounting investigations of recent months. He is mildly depressed and has experienced sleep difficulties and loss of energy for the past year.

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Introduction

Historically the province of urologists and sex therapists, erectile dysfunction (ED) is now managed predominantly by primary care practitioners. In recognition of this trend, simplified assessment and treatment models have been proposed. These new treatment models strongly emphasize the need for sexual inquiry in all middle-age and older men but deemphasize the value of intensive medical or psychologic assessment in most cases. Costly and potentially invasive diagnostic procedures, such as penile cavernosography or cavernosometry, once the mainstay of urologic assessment of ED, are seldom performed nowadays. Nocturnal penile tumescence testing, another common procedure of the 1980s and early 1990s, is infrequently performed. New management guidelines emphasize the need for a brief sexual and medical history, physical examination, and standard laboratory tests to rule out diabetes, dyslipidemia, or hypogonadism. Specialized diagnostic testing is reserved for more complicated or treatment-resistant patients. In reality, most middle-age men with ED now receive a prescription for oral therapy (i.e., sildenafil) with little or no systematic evaluation. Further diagnostic studies are usually reserved for those patients who fail to respond to an initial trial of the drug.

ED is strongly related to both physical and psychologic risk factors. Ideally, these factors should be carefully considered during the initial evaluation, in terms of the medical history and physical examination, or laboratory testing. Among the major predictors of ED observed in the Massuchussetts Male Aging Study *(3)*, diabetes mellitus, heart disease, hypertension, and decreased high-density lipoprotein levels were all associated with increased risk of the disorder. Recent studies have shown a strong association between ED and benign prostatic hypertrophy, another common disorder in older men *(4)*. Medications for diabetes, hypertension, and cardiovascular disease are other major risk factors. In addition, there is a higher prevalence of ED among men who have undergone radiation or surgery for prostate cancer *(5,6)*. The psychologic correlates of ED include anxiety,

depression, and anger *(3,7)*. These should be assessed, albeit briefly, during the medical and psychosocial history. Lifestyle factors such as smoking and lack of exercise have also been implicated. Despite its increasing prevalence among older men, ED is not considered a normal or inevitable part of the aging process. It is rarely (in fewer than 5% of cases) owing to aging-related hypogonadism *(8,9)*, although the relationship between ED and age-related declines in androgen remains controversial *(10)*.

During history taking, the clinician should ascertain prescription and nonprescription drug use, identify any personal concerns such as increased stress levels or relationship difficulties, and determine the presence of sudden changes in sexual functioning that could be attributed to the effects of recent surgery or prescription medication. Certain medications, such as antihypertensives and antidepressants, frequently cause diminished libido or erectile function. *In most cases, the medical, psychosocial, and sexual histories are the most essential and revealing aspects of the evaluation.* These histories will most often inform the physician regarding the likely cause(s) of the patient's ED. They will also provide information about the patient's individual needs and preferences.

Assessment

Problem Identification

Sexual problem identification should be regarded as a routine aspect of medical care. This should apply to all new patient visits, especially with men older than 50, as well as return or follow-up visits for these patients. Sexual inquiry may be especially valuable following surgery or hospitalization, diagnosis of a new disease or illness, medication initiation or adjustment, or major life changes (e.g., divorce, childbirth). The depth and extent of inquiry should be individualized, based on the clinical setting, patient characteristics, and type of visit. A single question (e.g., "Do you have questions or concerns about your sexual functioning?") may be sufficient in some circumstances, whereas a more detailed sexual history may be indicated in others. Sexual inquiry is most often conducted by face-to-face interview with the patient, although partner interviews, paper-and-pencil questionnaires, or computer-based methods may also be of value. Each of these methods has distinct advantages and limitations. Perhaps most important is the style or manner in which sexual inquiry is conducted. This should always reflect a high level of regard and sensitivity for each individual's unique ethnic, cultural, and personal background.

Questionnaire Measures

Questionnaire measures have the potential advantage of providing validated and relatively cost-efficient assessment of current and past sexual functioning. Patient burden is generally low, and some measures have been designed specifically for use in clinical trials as well as diagnostic assessment. At present, the most widely used measures are those discussed next.

Derogatis Sexual Function Inventory (Derogatis, 1974)

The Derogatis Sexual Function Inventory (DSFI) is a comprehensive measure of male and female sexual function. The complete DSFI scale consists of 245 items, requiring 40–60 min to complete. Ten different domains of sexual function are assessed—information, experience, drive, attitudes, psychologic symptoms, affects, gender role definition, fantasy, body image, and sexual satisfaction—in addition to a global sexual satisfaction index. The test has been psychometrically validated and has been widely used in studies of normally functioning and dysfunctional individuals. Its major drawbacks are the length and complexity of the instrument, which render it generally unsuitable for use in clinical trails.

Center for Marital and Sexual Health Questionnaire

The Center for Marital and Sexual Health Questionnaire (CMSH-SFQ) is a brief 18-item, self-report questionnaire that assesses current sexual function in the areas of erection, orgasm, desire, and satisfaction. Initial psychometric assessment of the CMSH-SFQ has been performed, although data regarding sensitivity and specificity are lacking. In this study, the measure showed adequate reliability and construct validity. It has had limited use to date in clinical trials of ED.

Brief Male Sexual Function Inventory

The Brief Male Sexual Function Inventory (BMSFI) is an 11-item, questionnaire scale that assesses several components of male sexual function, including sexual drive, erection, ejaculation, sexual problems, and overall satisfaction. Major advantages of the BMSFI scale are a relatively high degree of internal consistency and test-retest reliability, adequate discriminant validity for three of the domains (erectile function, sexual problems, overall satisfaction), and ease of use. Potential limitations are the restricted evaluation of erectile and orgasmic function, and lack of evidence concerning sensitivity or treatment responsiveness.

International Index of Erectile Function

A recent measure designed specifically for assessment of sexual function in clinical research or practice is the International Index of Erectile Function (IIEF). This instrument consists of 15 items and assesses sexual functioning in five domains: erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall satisfaction. Average scores are calculated in each of the major domains, and a severity algorithm is available for clinical interpretation of scores. Psychometric validation has demonstrated a high degree of reliability (internal consistency and test-retest reliability) in both clinical and nonclinical samples. Sensitivity and specificity are excellent, as has been shown in recent clinical trials. The IIEF is available in more than 30 languages and is currently in use in most large-scale, ED trials.

Major advantages of the IIEF are its relative brevity and ease of use, inclusion of multiple domains of sexual function, and strong psychometric profile. Potential disadvantages are the limited assessment of certain domains (e.g., sexual desire, orgasmic function), restricted time frame (4 wk), and uncertain validity in selected populations (e.g., spinal cord injury patients, psychiatry patients).

Sexual Health Inventory for Men

Sexual problems can also be identified via the use of a brief screening questionnaire, such as the Sexual Health Inventory for Men (SHIM). This is a validated, self-administered five-item scale that can be used to identify ED in a variety of clinical settings. A simple scoring system is available for ascertaining the presence and severity of ED. The questionnaire can be routinely administered to all male patients at intake and provides a cost-efficient means of problem identification. Patients scoring in the dysfunctional range on the questionnaire (<21) should receive further assessment of their problem. The questionnaire also provides a quantitative baseline, against which changes in erectile function can be measured over time. Some patients feel less embarrassed or uncomfortable in completing a paper-and-pencil survey than in answering questions face-to-face.

In a recent analysis of more than 30,000 SHIM questionnaires administered in more than 600 physicians' offices, the predicted relationship among ED, age, and other medical risk factors (hypertension, diabetes, ischemic heart disease) was observed. Additionally, this study reported a high sensitivity (81.8%) and moderate specificity (57.7%) for detection of ED in patients scoring below 21 on the test. Based on these findings, the authors concluded that the SHIM provides a convenient method for rapidly identifying patients at high risk of ED who require further clinical assessment.

Medical, Sexual, and Psychosocial History

Once ED has been identified, the next step in the process of evaluation is taking a detailed medical, sexual, and psychosocial history. In obtaining a history with sexual dysfunction patients, including ED evaluation, special attention should be paid to personal or cultural sensitivities. History taking should be aimed at characterizing the severity, onset, and duration of the problem, as well as concomitant medical or psychosocial factors. It is important to ascertain whether erectile difficulties are the primary or only complaint, or whether some other aspect of the sexual response cycle (desire, orgasm) is involved. *The medical and sexual history are the most essential and frequently the most revealing aspects of the assessment process.* The circumstances of onset may be revealing of the etiology of the problem, e.g., just as the progression or prior response to treatment may be indicative of the prognosis. Contributing factors, such as prescription or nonprescription drug use, relationship conflicts, and depression or other psychiatric disorders, should be carefully assessed. The medical history of the patient can likewise be revealing in identifying specific organic factors, such as diabetes or vascular disease, that may contribute to the problem. Areas for investigation in the sexual history are given in Table 1 and sample questions in Table 2.

Table 1
Pattern of a Sexual Dysfunction: What to Ask

1. Duration of difficulty: lifelong or acquired
2. Circumstances in which difficulty appears: generalization or situational
3. Description of difficulty
4. Patient's Sex Response Cycle (desire, erection, ejaculation/orgasm if male; desire, vaginal lubrication, orgasm, absence of coital pain if female)
5. Partner's Sex Response Cycle (see #4)
6. Patient And Partner's Reaction to presence of difficulty
7. Motivation For Treatment (when difficulty not chief complaint)

(Adapted from Jardin et al., Erectile Dysfunction: 1st International Consultation on Erectile Dysfunction, Health Publications, 2000).

Psychosocial History

A psychosocial assessment is necessary in every case. Given the interpersonal context of sexual problems, the physician should carefully assess past and present partner relationships. Sexual dysfunction may affect the patient's self-esteem and coping ability, as well as his social and occupational performance. The physician should not assume that every patient is involved in a monogamous heterosexual relationship. For that reason, it is advisable to begin with the question "Are you sexually active at the moment?" or "Do you have a regular sex partner?" and then ask "Is that a hetero- or homosexual relationship?" The early stages in the development of a problem are often of crucial significance to treatment. Were there particular times of change in the sexual relationship? If so, what was going on in the patient's life at those times? In addition, questions should be asked about other important elements of the patient's life, including other relationships, work, financial security, and family life. Does overload or stress play a part, either at work or in his private life? Key elements in the psychosocial history are given in Table 3 and sample questions in Table 4.

Physical Examination

In most cases, a physical examination does not identify the cause of ED; however, a focused physical examination should be performed on every patient with ED. The physical examination should include a general screening for medical risk factors that are associated with ED (comorbidity), such as body habitus (secondary sexual characteristics) and

Table 2
Sample Sexual History Questions

"Many men of your age start to experience sexual difficulties. Do you have such a problem? If so, I would be happy to discuss it."
"Could you describe your sexual problem?"
"When did your erection problems begin? Please describe the circumstances."
"What was your sexual life and satisfaction like in the past?"
"How are your erections that you achieve with masturbation or those that occur with sleep or on awakening early in the morning?" (Note that discussion of masturbation is a sensitive issue that is often influenced by cultural and religious perspectives.)
"How strong is your desire for sex now? How strong was it in the past?"
"Do you currently have difficulties with ejaculating too fast or too slow? What about in the past?"
"Do you know whether your partner was satisfied with your sexual life together? Would it be helpful for me to talk with your partner about your sexual life and situation?"
"What has been your partner's reaction to your sexual problem and does your partner want to resume sexual intercourse now?"
"What has been the effect of your sexual difficulties on your overall lifestyle?"

(Adapted from Jardin et al., Erectile Dysfunction: 1st International Consultation on Erectile Dysfunction, Health Publications, 2000).

an assessment of the cardiovascular, neurologic, and genital systems, with particular focus on the penile, testicular, and rectal examination. The physical examination may corroborate aspects of the medical history and may occasionally reveal unsuspected physical findings (e.g., decreased peripheral pulses, penile plaques, atrophic testes, and prostate cancer). Key elements of the physical examination are given in Table 5.

Review of Findings

Results of the initial evaluation, physical examination, and history should be carefully reviewed with the patient and patient's partner, if possible, prior to initiating therapy. Potentially modifiable risk factors, such as cigarette smoking or alcohol abuse, should be addressed. Prescription drugs such as antihypertensives or antidepressants may be implicated in the patient's erectile difficulties and should be altered by the ordering physician when medically indicated or suspected. Patients with specific endocrine deficiencies such as hypogonadism should be placed on hormone replacement therapy (in the absence of medical contraindications, such as prostate or breast cancer) prior to initiation of direct therapies for ED. *A specialist referral is indicated in these cases.* Additionally, sexual problems in the partner such as a lack of lubrication, hypoactive sexual desire, or dyspareunia (painful intercourse) should be addressed. If psychologic issues are indicated at this time, referral should be made to an appropriate sex therapist or psychiatric professional. Patients and partners should be fully informed about the range of treatment options available, and the risks and benefits associated with each should be addressed.

Specialist Consultation and Referral

With the advent of effective oral treatment and the subsequent popularization of ED, new categories of physicians are involved in the initial evaluation and treatment of ED. Only in a minority of patients is referral to a specialist necessary.

Table 3
Elements of the Psychosocial History

• Aging
• Lifestyle factors
• Current psychologic state
• Symptoms of depression
• Altered self-esteem
• Coping skills
• Past and present partner relationships
• Sexual practices
• Satisfaction with job and social position
• History of sexual trauma/abuse
• Educational attainment

(Adapted from Jardin et al., Erectile Dysfunction: 1st International Consultation on Erectile Dysfunction, Health Publications, 2000).

A wide range of diagnostic tests is available. These can be used to separate somatically determined from purely psychogenic ED or to tailor specific vascular surgery in patients with arterial disease or venoocclusive dysfunction. In the majority of ED patients, the diagnostic evaluation has little impact on the therapeutic options. Diagnostic categorization is particularly worthwhile for those patients in whom a reversible form of ED is suspected.

Conclusion

Since the advent of oral therapies for ED, the process of evaluation has been simplified in most cases. The major focus currently is on a detailed medical, sexual, and psychosocial history and physical examination, in addition to

Table 4
Sample Psychosocial Assessment Questions

"Do you suffer from depression or other mood problems?"
"Have you seen a psychiatrist or other mental health professional in recent years? If yes, please describe the circumstances and outcome."
"How are your relationships with family members and other important people in your life?"
"Do you have any difficulties in your work situation, if applicable?"
"How is your current relationship with your partner? How was it in the past?"
"Were you ever the victim of sexual abuse (e.g., forced to have sex)? If yes, what effect did this have on you then?" What about now?"
"Is your economic situation contributing to significant stress in your life?"

(Adapted from Jardin et al., Erectile Dysfunction: 1st International Consultation on Erectile Dysfunction, Health Publications, 2000).

Table 5
Elements of the Physical Examination

• Complete genital examination (digital rectal)
• Gynecomastia
• Body hair, fat distribution
• Blood pressure, heart rate, peripheral pulses, edema
• Vibratory sensation, BCR
• Lower-extremity strength and coordination

(Adapted from Jardin et al., Erectile Dysfunction: 1st International Consultation on Erectile Dysfunction, Health Publications, 2000).

the use of standardized questionnaires (e.g., IIEF, SHIM) for the identification and assessment of ED. Specialized tests are only indicated in a small minority of cases. Most patients are currently managed by primary care physicians, and specialist referrals are limited to a small minority of patients. The patient-physician dialogue is especially important in the management of ED: the diagnostic findings should be clearly reviewed with all patients. Additionally, the options for diagnosis and treatment should be presented and discussed with all patients (and partners if available).

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