

The primary health care physician and the cancer patient: tips and strategies for managing sexual health

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Abstract: There is a large and growing population of long-term cancer survivors. Primary care physicians (PCPs) are playing an increasingly greater role in the care of these patients across the continuum of cancer survivorship. In this role, PCPs are faced with the responsibility of managing a range of medical and psychosocial late effects of cancer treatment. In particular, the sexual side effects of treatment which are common and have significant impact on quality of life for the cancer survivor, often go unaddressed. This is an area of clinical care and research that has received increasing attention, highlighted by the presentation of this special issue on *Cancer and Sexual Health*. The aims of this review are 3-fold. First, we seek to overview common presentations of sexual dysfunction related to major cancer diagnoses in order to give the PCP a sense of the medical issues that the survivor may present with. Barriers to communication about sexual health issues between patient/PCPs in order are also described in order to emphasize the importance of PCPs initiating this important conversation. Next, we provide strategies and resources to help guide the PCP in the management of sexual dysfunction in cancer survivors. Finally, we discuss case examples of survivorship sexual health issues and highlight the role that a PCP can play in each of these case examples.

Keywords: Primary care; behavioral health; cancer survivors; sexuality; quality of life

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Cancer related sexual dysfunction

Worldwide, an estimated 14.1 million patients are diagnosed with cancer annually (1) and a majority of these individuals will become long-term cancer survivors (2). As greater numbers of survivors are living long after diagnosis and treatment, there is growing recognition that primary care physicians (PCPs) need to play an increasingly important role in addressing the numerous treatment-related side effects that impact quality of life for millions of cancer survivors (3). As PCPs are often in position to provide the majority of post-treatment medical care when survivors transition out of the oncology setting (4), they are, in a sense, on the “front lines” when it comes to managing long-term side effects for many survivors (5).

Sexual health is one of the most fundamental and long-lasting aspects of function that can be negatively affected

by cancer treatment (6). Estimates of the prevalence of sexual dysfunction after cancer range from 40-100% (7-9), and affect both sexes. For both men and women, common problems includes disorders of sexual response (e.g., arousal, erectile dysfunction, ejaculatory dysfunction, reduced lubrication in females, chronic dyspareunia, orgasmic dysfunction etc.), and disorders of sexual desire and motivation (e.g., hypoactive sexual desire, reduced sexual motivation, body image disturbances, loss of sexual self-esteem etc.) (10). Without intervention, the detrimental impact of sexual dysfunction on cancer patients is significant and evidence suggests that these problems often get worse over time (6,11).

Because the sexual side effects of treatment are both profound and enduring, PCPs have a particularly important role to play in helping cancer survivors address and manage

these problems. However, it has been shown that PCPs often do not feel comfortable managing sexual side effects (12) and that a lack of discussion with patients about sexual dysfunction has been associated with PCPs' self-report of not receiving adequate preparation and/or formal training around survivorship care (13). Communication about sexual health is also hampered by a concrete lack of material resources such as clinical checklists, and educational materials (14,15). Thus it is imperative for PCPs to have a range of efficient strategies including language for communication, simple checklists for clinical inquiry and access to useful resources in order to facilitate communication with patients about sexual problems after cancer.

For the purpose of providing an overview of commonly reported cancer-related sexual health issues that PCPs can expect to encounter, we will begin by briefly describing frequently reported sexual symptoms and side effects related to common cancers. In other sections covered within this special journal issue, there is more in depth coverage of the specific sexual dysfunction that providers can expect to encounter with regard to particular diagnoses and treatments. Subsequently, we will address strategies for enhancing communication about sexual health between PCPs and survivors, offer tips for use of a model for clinical inquiry and clinical checklists, and make recommendations for resources to offer patients who are struggling with sexual problems after cancer. Finally, we will highlight clinical case examples that PCPs may encounter in their practice, and overview clinical next steps that a PCP might consider for the cases described.

Overview of common cancers and treatment-related sexual problems

Breast cancer

Treatment for breast cancer can involve surgery, chemotherapy, radiation, and/or hormone therapy. The experience of any one of these treatments is likely to impact the survivor's sexual health (16). Therefore, research indicates that breast cancer survivors are significantly more likely to suffer from sexual problems when compared to the general population (17). Breast cancer survivors are likely to report libido changes, vaginal dysfunction (dryness, stenosis), different orgasm experiences, changes to body image, loss of intimacy, and a different relationship with their partner (16,18-20).

Gynecologic cancer

The treatment of gynecologic cancers is very likely to

result in some form of sexual dysfunction (21). Survivors of gynecologic cancers experience worse sexual problems than women in the general population (22), regardless of specific site of their gynecologic cancer (e.g., endometrial, vulvar, cervical), treatment type, time from diagnosis and age (23,24). Their sexual dysfunction tends not to improve over time, and can intensify in nature (25). Surgery is a common component of treatment for gynecologic cancers and can result in long-term sexual health issues of pain, loss of sensation, changes in body image, vaginal dryness, difficulty reaching orgasm (26), and can trigger premature menopause symptoms including dyspareunia, and low libido (27). In addition, these women report that their treatments can alter their feelings of femininity, mood, self-esteem, and the way they relate to and discuss sexual issues with their partners (28-33). The addition of radiation and/or chemotherapy to the treatment regimen puts the patient at an increased risk of developing more severe sexual problems (34).

Prostate cancer

Because of the direct effect of treatment on sexual organs, men surviving prostate cancer commonly experience a significant impact on their sexual function as a result of treatment (9,35,36). Depending on a number of disease specific characteristics, prostate cancer patients may undergo a range of treatments including surgery, radiation, and hormonal therapy. Post-treatment, prostate cancer survivors commonly report symptoms of sexual dysfunction including erectile dysfunction, dry orgasms, urinary incontinence during orgasm, decreased satisfaction with orgasm, decreased penile length, body feminization and avoidance of sexual activities (37-54). As all active treatment options for prostate cancer are associated with compromised sexual functioning (55), the implications that these issues have on quality of life for prostate cancer survivors is critical for a provider to consider (36,55-59). In addition, prostate cancer survivors commonly endorse sexual bother even when function recovers, indicating that significant struggles remain in their efforts to cope with their functional decrements (60,61).

Testicular cancer

Sexual problems commonly reported by testicular cancer survivors include difficulties with sexual desire, ejaculatory difficulties and erectile dysfunction (62-65). These may be related to structural and emotional (body image) issues related orchiectomy, as well as retrograde ejaculation due to pelvic lymph node dissection. Following treatment these

men often report reductions to sexual activity levels, and general sexual dissatisfaction (66,67).

Bladder cancer

Treatment for bladder cancer includes surgery, radiation, immunotherapy, and chemotherapy, with surgery being the most common course of action. For men, standard radical cystectomy is often associated with the loss of sexual function, most notably erectile dysfunction (68). For women, radical cystectomy is likely to create prominent sexual dysfunction including reduced libido, dyspareunia, decreased lubrication, and diminished ability or inability to achieve orgasm (69,70). In addition, men and women also suffer from the psychological impact of treatment in addition to their physical challenges. They often report body image concerns after urinary diversion following radical cystectomy (71-74), which is associated with significant loss of sexual function and satisfaction up to five years later (75).

Colorectal cancer

Surgery for colorectal cancer often causes nerve damage, and can cause erectile and ejaculatory dysfunction in men and desire, pain, and orgasm difficulties in women (76-82). Colorectal cancer survivors can report that their sexual function is affected by emotional reactions and adjustment to colostomy and their stoma, with notable concerns related to odor, flatulence, and diarrhea.

Head and neck cancer

Treatment for head and neck cancers can cause facial alterations/disfigurement, as well as persistent changes to saliva quality and/or quantity, breathing and speech (83). As the function and appearance of the head and neck region plays such a critical role in our social interactions (84), treatment can have implications for relationship and sexual function in survivors (85,86). Consequently, head and neck cancer survivors report feeling less attractive, reduced libido, and decreased satisfaction with their sexual relationships (87-91).

Hematologic malignancies

For those diagnosed with a hematologic malignancy, chemotherapy, total body irradiation, stem cell transplantation, and even the placement of a central venous catheter can significantly impact the patients' body image, intimacy, and sexuality (92-95). Survivors can report erectile dysfunction in men, vaginal dryness in women, and pain and

difficulty with orgasm for both men and women (94,96-98).

Childhood cancer

Those diagnosed with cancer at a young age are exposed to treatments that can impact their sexual health during critical developmental periods. Physically, treatment can impair their hormonal, vascular, genitourinary and neurological function, placing these survivors at risk for both sexual dysfunction (99-104), and infertility (105,106). Further, evidence suggests that even when young adult survivors of pediatric cancer report generally good health, they still have increased prevalence of sexual dysfunction (104). Psychosocially, they tend to be less sociable and more isolated, are less likely to marry, show greater restriction in their sexual behavior (e.g., masturbation, talking to friends about sex), delays in reaching sexual milestones (e.g., dating, intercourse), and decreased sexual interest and satisfaction with sex (107-113).

Communication about sexual dysfunction

A consistent theme across the literature has been that cancer patients and survivors rarely discuss issues of sexual function with their medical providers (114). As the patient begins their cancer treatment, the main focus for both the patient and oncology provider is on ensuring their survival. Therefore, it is not surprising that conversations with oncology providers about the short and long-term sexual health consequences of treatment either do not take place or are not well remembered (115,116). An estimated 0-37% of cancer survivors report that they had a discussion about sexual health with any member of their medical team (117-119). Similarly, oncology professionals report that they do not often discuss issues related to sexual health with their patients. In a survey of gynecologic oncologists, less than half reported that they took a patient sexual history at least 50% of the time (120). Similarly, providers treating women with ovarian cancer indicated that the overwhelming majority did not discuss sexual issues, despite acknowledging that these patients were likely to experience some form of sexual dysfunction following treatment (121). Like their colleagues in oncology, PCPs are also unlikely to discuss sexual health issues with cancer survivors who have completed active treatment. In a survey of primary health care physicians, over 60% of providers reported that they "never" or "rarely" addressed sexual dysfunction issues, and more than half were unlikely to initiate a conversation about sexual dysfunction with cancer survivors (122). Even when

discussions occur with cancer survivors, they are often limited to the discussion of functional status, and rarely do issues related to the impact of sexual dysfunction on mood, quality of life, relationship functioning etc. get discussed (123,124).

This lack of discussion about sexual health stands in direct contrast to what medical professionals report regarding the importance they place on such issues, and their capability of delivering this care. For instance, nearly all gynecologic oncologists surveyed in one study reported that they were comfortable with taking the sexual history of their patients (120), and that issues related to sexual health consequences of cancer treatment should be discussed with patients (125).

Despite the lack of communication about sexual health after cancer, cancer patients/survivors report a consistent desire to have open dialogue with their medical providers about sexual issues (117,126). They are interested in conversations ranging from physiological changes that result from treatment, to the safety of sexual activity to psychological issues such as reassurances that their sexual issues are commonplace. Perhaps more importantly, cancer patients/survivors indicate that they are amenable to discussing how to resolve the impact of the changes to their sexual function and intimate relationships following cancer (116,117,123).

Challenges in sexual health communication

Despite the medical provider's awareness of the importance of discussing sexual function, and the patient's interest in receiving further information about sexual health issues, assessment and counseling about sex is not commonly a part of routine medical care across the world (114,127). There are numerous barriers to this important conversation on both sides of the examination table, and often neither the patient nor the PCP feels comfortable initiating conversations about sexual health.

From a patient's perspective, he or she may experience challenges due to the patient/provider relationship, and a lack of accurate knowledge about sexual function and cancer. Moreover, patients report that if his or her provider does not bring up a medical issue, then it must not be of significant concern. Therefore patients are cautious about bringing up sexual dysfunction concerns because they are uncertain about its validity if their provider does not initiate (123,124,128) and they may be worried about feeling disrespected in such an interaction (128,129). During the particularly stressful period of time soon after a cancer diagnosis, patients are often overwhelmed with

information and treatment planning and simply do not have the capacity to consider the sexual health implications of their cancer treatment (128,130). In addition, cancer patients may possess inaccurate beliefs about sexuality that reduce the likelihood that they will raise such issues with medical providers. For example, they may worry that cancer is contagious and can be spread through sexual acts, that sexual activity may impact their cancer recovery, or that side effects from cancer treatment make sexual activity impossible (131,132).

For the PCP, the literature points to types of barriers that bar effective communication about sexual health: patient characteristics, provider characteristics, and systems-based challenges. First, there are a number of patient characteristics that can discourage a medical provider from discussing sexual health; for example, age, gender, race/ethnicity, sexual orientation and partner status can all impact the provider's initiative (121-123,133). In addition, the patient's health prognosis, particularly in a palliative care setting, is likely to play a role in impacting whether the medical professional believes that the patient is interested in having a conversation about sexual health (123,124). Second, provider characteristics including their training background, knowledge about sexual health issues, and attitudes towards sex can negatively impact the likelihood of a conversation about the topic. Some medical providers recognize that they lack the experience and/or knowledge about sexual health issues that would allow them to feel confident with discussing it with their patients (121,122,133). Furthermore, medical providers report that it is frequently unclear as to which member of the multi-disciplinary medical team is responsible for initiating the conversation (121,123). Given that sex is often considered a taboo subject in many cultures not to be discussed openly, medical providers admit that they are sometimes embarrassed to openly speak about sexual issues, and consequently, avoid such intimate conversations (121,123). Finally, the medical system itself can make conversations about sexual health issues challenging. Physicians often have overloaded patient schedules and do not have sufficient time to thoroughly explore sexual functioning with each and every patient (116,120). Even when patients and providers discuss sexual dysfunction, there may be systemic difficulties surrounding the lack of resources available for the patient, and whether their health insurance would provide coverage for these issues (116,132). Given that cancer survivors may have complicated medical histories and a variety of other late effects of treatment, barriers such as time constraints

and lack of experience and/or knowledge may be even more problematic for the PCP.

Strategies to address sexual health in a primary care setting

We suggest that the Five A's Framework, a counseling model built on five basic components (*ask, advise, assess, assist, and arrange*), can provide an efficient and flexible structure for helping PCPs address sexual function with their patients (13,134). The first A (*ask*) underscores the PCP's primary role in ensuring that patients know that sexual dysfunction is a medical issue that is commonly experienced by cancer survivors, and that this is a topic area which will be discussed during the course of their medical visit. We recommend that conversations about sexual dysfunction should be considered part of the routine review of systems. PCPs should aim to inquire about sexual function in an open-ended fashion. Common non-judgmental questions to begin initial inquiry and offer validation of the problem may include:

- "Many patients that I see express concerns about how their (treatment, disease) has affected sexual function. How has this been for you?"
- "Do you have concerns or worries about how your intimate relationship has been affected by your cancer treatment? Is this something you would like to talk about?"
- "In my experience, many people find that the kind of treatment you received can affect sexuality or intimacy. Do you have any questions for me about your experience?"

Closely related to providing validation is the PCP's responsibility to let the patient know that he or she is willing to *advise* the patient as needed. That is, this initial communication also conveys an important implicit message that treatment for sexual problems after cancer is available. The next step involves the need to adequately *assess* the problem in a manner which is efficient and also allows the PCP to identify next steps for intervention. Initially, PCPs can consider the use of paper and pencil screening tools as part of their regular intake paperwork. This serves the purpose of briefly assessing sexual function in cancer survivors evaluating which patients may require further evaluation. The use of such a screening measure can help to address barriers such as providers who have limited time, feel uncomfortable screening certain patients (e.g., an older patient who is recently widowed) or feel embarrassed

by bringing up sexuality directly with patients. Providers can swiftly review patient's responses and utilize endorsed items as a starting point for a more thorough conversation about sexual dysfunction. Even for providers who currently feel comfortable having a discussion with patients about sexuality, screening tools may serve as a guide to review symptoms that might be present post-cancer treatment.

PCPs can consider several easily accessible and widely utilized instruments for the evaluation of sexual dysfunction. For female patients, the Female Sexual Function Index (FSFI) (135) is a commonly used 19-item self-report measure originally developed to assess female sexual function in women of any age, including pre- and post-menopause, in the general population and takes approximately 15 minutes to complete. The scale assesses function over the past month in several domains: desire, arousal, lubrication, orgasm, satisfaction, and pain (136) and has been utilized and validated in cancer patients and survivors (137,138). For providers who are particularly conscious of patient burden, they can consider the abbreviated 6-item version of the FSFI, though this is not recommended as it does not provide as much clinical information as the full scale (139). Those seeking further information about this scale can find additional resources at www.FSFIquestionnaire.com (135). In male patients, providers can consider the International Index of Erectile Function (IIEF) (140). The scale is a 15-item self-report measure developed to assess erectile function in men in the general population and has been utilized in studies with cancer patients and survivors, particularly with prostate cancer populations (137). The IIEF measures function over the past month in the following domains: erectile function, orgasm, desire, intercourse satisfaction, and overall satisfaction. As with the FSFI, there are also briefer versions of the IIEF which may be considered for use as a screening tool (137,141). Though potentially useful for the PCP, the IIEF is limited as it primarily evaluates for erectile dysfunction, and other sexual dysfunctions in men could be overlooked. Providers should be aware that there are a large number of other sexual function measures available. Other screening checklists of sexual dysfunction in men have been developed, and are of value for the PCP. However, providers should exercise clinical judgment as these measures may not have been empirically validated in cancer patients. For example, a brief general screening tool (versions for both men and women) has recently been provided by Hatzichristou *et al.* (142) and can serve as a guide for PCPs looking to incorporate such a checklist with their patients. When making a decision as to which measure to

utilize, the validity and reliability of the measure, as well as the time it takes to complete and the breath of the assessment are crucial factors for the PCP to consider.

After the PCP has clarified the problem, patients then need to be *assisted* by receiving necessary resources such as information sheets, and access to educational books and websites or potentially PCPs may need to *arrange* further intervention other providers. It is possible that patients may need to see a specialist such as mental health professional, a sexual health counselor, and an urologist specializing in sexual medicine or a menopause specialist. It is also our belief that the final step of making arrangements for additional evaluation with specialists also includes arranging to follow-up with patients at subsequent visits. Such follow-up communicates the message that the PCP takes these issues seriously, is willing to communicate about sexual health, and reassures the patient that remaining challenges can be addressed. The following section contains specific recommendations and tips that PCPs can use in the context of assisting and arranging care for patients.

It is important to consider that the optimal delivery of survivorship care, including attention to sexual health, may require more time than the PCP has with his or her patient. Other comparable models for intervention, such as the ALLOW algorithm (143) (ask, legitimize, limitations, open up for further discussion/evaluation, work together to develop a treatment plan) encourages the PCP to discuss sexual health issues, and help the patient find adequate resolution for their identified dysfunction. Similar to the five A's Framework, this model also acknowledges that whatever the concrete constraints of clinical practice, the key elements for interaction revolve around inquiry, validation and provision of resources as needed.

Just as it is important for PCPs to have access to basic information about managing common sexual side effects, it is equally important that they have access to patient education and self-help resources which can be made available to both male and female patients. First, one should identify local professionals capable of providing more specialized treatment for sexual health issues. These professionals could include members of the following disciplines:

- Urologist/sexual medicine specialist/uro-gynecologist;
- Gynecologist/menopause specialist;
- Endocrinologist;
- Clinical psychologist/sexual health counselor;
- Pelvic floor physical therapist.

Often it is helpful to build a resource list of local specialists which may be cultivated through a number of professional societies that specialize in sexual medicine/sexual therapy. Many of these societies not only have listings to find providers but also have excellent educational material related to sexuality after cancer. Examples of such societies that a PCP can consider include:

- International Society for Sexual Medicine (<http://www.issm.info>);
- North American Menopause Society (<http://www.menopause.org>);
- International Society for Sexuality and Cancer (<http://www.issc.nu>);
- Women's Health and Research Institute of Australia (<http://www.whria.com.au>);
- American Association of Sexuality Educators, Counselors and Therapists (<http://www.aasect.org>).

There are also a wide range of websites that are aimed at patient education and yield a significant amount of high quality information. Examples of patient websites include:

- American Cancer Society: Sexuality for the Woman with Cancer: <http://www.cancer.org/treatment/treatmentsandsideeffects/physicalsideeffects/sexualsideeffectsinwomen/sexualityforthewoman/sexuality-for-the-woman-with-cancer-toc>;
- American Cancer Society: Sexuality for the Man with Cancer: <http://www.cancer.org/treatment/treatmentsandsideeffects/physicalsideeffects/sexualsideeffectsinmen/sexualityfortheman/sexuality-for-the-man-with-cancer-toc>;
- Macmillan Cancer Support: Effects of Cancer on Sexuality: <http://www.macmillan.org.uk/Cancerinformation/Livingwithandaftercancer/Relationshipscommunication/Sexuality/Effectofcanceronsexuality.aspx>.

Acknowledging that PCPs often work under multiple constraints, including the need to address a very wide range of issues in a very compressed amount of time, it is ideal if primary care practices can have resource or "tip" sheets for cancer survivors that overview common problems such as vaginal dryness or lack of libido. Such resource sheets can save time and be an enormous resource for patients. It is our recommendation to work with either a nurse in the primary care practice or a local partner (pelvic floor therapist, sex therapist) to create a resource sheet. An excellent example is the suggested patient handout created by Carter *et al.* [2011] (144) for women to promote vaginal health after cancer (*Table 1*).

Table 1 Vaginal health handout example [adapted from Carter et al. (144)]**Vaginal moisturizers**

Available in gels, tablets, or liquid bead

Administered either in a tampon-shaped applicator or as a vaginal suppository

Used to hydrate the vaginal tissues and improve vaginal pH

Decreases vaginal dryness and increases vaginal comfort

Vaginal moisturizers are non-hormonal, over-the-counter products that need to be used several times a week regularly

Vaginal moisturizers last for up to 2 to 3 days; then they need to be reapplied

The best absorption occurs when used prior to bedtime

Types of moisturizers include polycarbophil-based gel (e.g., Replens), hyaluronic acid-based vaginal gel (e.g., Hyalo-Gyn) and/or vaginal Vitamin E (capsule needs to be punctured prior to insertion)

Vaginal lubricants

Available in liquid or gel form

Applied in the vagina and around the genitals prior to sexual activity. The lubricants may need to be reapplied during sexual activity. It is important to also apply to a partner's genital area, especially before penetration

Used to minimize dryness and pain during sexual activity and gynecologic exams

Water- and silicone-based lubricants recommended; water-based lubricants wash away more easily

Avoid petroleum-based lubricants; they do not wash away easily, do not allow skin to breathe, and can increase the risk of infection

Use caution with perfumed or flavored lubricants; they may irritate or be atrophic to delicate tissues

Common brand names or types of lubricants can be found in drugstore chains, but online web sites and sexual boutiques can offer greater variety

Saliva is a natural lubricant

When a woman has cancer treatment that results in premature menopause or increased menopausal symptoms, the vagina can become dry and lose its elasticity. Simple strategies can help to improve the moisturization in the vagina and its ability to stretch without discomfort.

Clinical case examples**Case example 1—Mariel, a 28-year-old non-Hodgkin lymphoma survivor****Medical history**

Mariel was diagnosed with diffuse large cell non-Hodgkin lymphoma at the age of 14 after presenting with a neck mass. She experienced a long course of treatment which included focal radiation and multi-agent chemotherapy. Unfortunately, Mariel relapsed at age 16, and required a stem-cell transplant with additional chemotherapy and total body radiation. Thus, Mariel was in and out of cancer treatment for most of her high school years.

Sexual health challenges

While in college, Mariel began noticing that she was behind her peers in terms of her social development. Despite being an excellent student academically, Mariel started to become aware that her friends were choosing to spend more time

with their boyfriends, rather than with her. She wants to start dating more regularly, but does not feel comfortable in this domain. She has sexual desire, but has felt awkward during previous sexual interactions. Mariel says: *“I was not really depressed or anything during my treatment, I was a pretty happy person no matter how bad things felt. When I got sick and left school everyone was starting to date, and when I got better and came back it was like everyone was just having sex—I couldn’t figure out what I missed and didn’t know what I was supposed to do about even talking to a guy without feeling uncomfortable. Socially it has been a total disaster. I went from being in a protective bubble to being dropped in a huge college campus that was like one big party. I feel so out of place sometimes.”*

Considerations for the primary health care physician

This patient faces issues that are common among childhood cancer survivors. While cancer treatment may have untoward effects on physical function that can lead to sexual problems, this case highlights the psychosocial late

effects for this vulnerable population. Despite coping very well with the immediate stressors of her cancer treatment, Mariel's social and psychological development was dramatically interrupted during her adolescence. Losing out on opportunities to be a "normal" teenager can make sexual milestones (e.g., dating, physical intimacy etc.) seem more intimidating especially if the survivor is aware that he/she is "behind". Despite presentation of overall robust health, the PCP needs to be aware that childhood cancer treatment often results in psychosexual developmental delays. Especially because young adults may not be comfortable initiating this conversation, the PCP's inquiry signifies an important first step to helping young adult survivors begin to readjust their expectations and return to normative function. The PCP can play an important role in encouraging that the childhood cancer survivor seek active psychotherapy, or to consider connecting with other childhood cancer survivors both in-person and via the internet in order to normalize their experiences.

Case example 2—Carson, a 62-year-old prostate cancer survivor

Medical history

Carson is a 62-year-old semi-retired, married attorney who was diagnosed 18 months earlier with high-risk prostate cancer. He underwent nerve-sparing radical prostatectomy, external beam radiation and was placed on androgen-deprivation therapy for 18 months. Carson has been on this therapy for 6 months now.

Sexual health challenges

Carson initially presented to his PCP for consultation about difficulty with his sleep. Secondary to this, he casually reported to his PCP that he had been experiencing low mood, lack of energy and erectile dysfunction for several months now. Upon further inquiry, Carson recalled that although desire is diminished, it is not absent and that his lack of sexual function is primarily related to impaired erectile function. He is otherwise healthy and is not taking any medications. He reports to be happily married with a supportive wife.

Considerations for the primary health care physician

Often, patients will present to their PCP with health-related concerns that are not directly tied to their sexual health. As discussed previously, patients are often reticent to speak about their sexual dysfunction for a variety of reasons.

It will be important for a PCP to be mindful of potential opportunities for further evaluation related to sexual health concerns. In Carson's case, erectile dysfunction may be a side effect of his surgery and/or radiation therapy (due to local damage to the nerves and/or blood vessels). While this may be long-lasting for some patients, many can recover their erectile function to a certain extent. Androgen deprivation may further result in erectile dysfunction due to depletion of testosterone. In addition, anxiety and depression may also play a role. Carson's case presents an excellent opportunity for the PCP to collaborate with a multi-disciplinary team in order to help Carson effectively manage his dysfunction. In addition to communicating with his oncologist, it may be helpful to connect with a urologist who specializes in men's sexual health, and a clinical psychologist who can help him and his wife navigate his adjustment to post-cancer sexual functioning.

Case example 3—Mackenzie, a 47-year-old breast cancer survivor

Medical history

Mackenzie is a 47-year-old female breast cancer survivor who has come for her yearly physical. She was diagnosed with ER + PR + HER2 breast cancer at age 45 and was treated with unilateral mastectomy, radiation therapy and chemotherapy including doxorubicin, cyclophosphamide and trastuzumab. She is currently taking tamoxifen. Mackenzie stopped menstruating during her active therapy and has since not resumed her menses.

Sexual health challenges

Mackenzie has been married for 15 years, and has two school-age children with her husband. She works full-time as a pharmacist, and often comes home tired after a long day at work. She notes that sex is very painful despite copious use of lubricants. Because of this discomfort, she has stopped having regular sexual activity with her husband. She is concerned about the pain and remarks that since ending her treatment the situation with her sex life has not improved. As a result of the cessation of regular sexual activity, she has noticed a decline in the quality of her marital relationship.

Considerations for the primary health care physician

Sexual health concerns can often be the tip of the iceberg for a PCP, as sexual dysfunction can be associated with work-life distress, as well as marital dysfunction. Strictly from a sexual health perspective, Mackenzie is likely suffering from

pain during intercourse due to vaginal dryness and vaginal atrophy. This is likely related to cessation of menses/early menopause (typically with cyclophosphamide) leading to loss of lubrication and/or as a side effect of the ongoing treatment with tamoxifen. Consequently, addressing this issue through the use of non-hormonal moisturizers, local topical estrogen use, and/or vaginal dilators with the assistance of a gynecologist and/or pelvic floor physical therapists could be beneficial for the patient. Also important for Mackenzie are the relationship sequelae of this dysfunction. The PCP is in an ideal situation to recommend that Mackenzie explore marital therapy in order to address the discord that resulted from her sexual dysfunction, and to help her understand that relationship function and sexual satisfaction are highly correlated.

Conclusions

Parallel to rapid advances in care, the number of long-term cancer survivors worldwide continues to grow at a significant pace. Consequently, these survivors bring a range of long-term side effects to their PCPs that need to address. As data demonstrate, PCPs want to provide excellent survivorship care yet often feel unprepared to do so. It is imperative that PCPs received straightforward recommendations and strategies to help their patients. Fortunately, the issue of sexuality after cancer is garnering greater attention and there are now more resources available for both professionals and patients than ever before. It is our hope that when PCPs appreciate the multifactorial etiologies for sexual symptoms in cancer survivors, have straightforward language and confidence to inquire about such symptoms, and have the tools to address and manage them and/or have readily available resources to call upon for additional evaluation, that they will feel more encouraged and empowered to not only assess patient function as it relates to sexuality post-cancer, but to also directly address sexual problems with patients as they are presented.

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