Sexual dysfunction after breast cancer: A review of treatments and strategies

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Abstract

Background: Sexual dysfunction is an extremely common event affecting the wellbeing of women with breast cancer. It includes physical and psychological factors that may occur during early treatment and extend into the years following diagnosis. Without appropriate recognition and management, quality of life may be significantly reduced to a point where treatment compliance is impacted.

Aim: To assist healthcare workers to identify and manage sexual dysfunction in patients with breast cancer.

Methods: This article reviews both physical and psychological aspects of sexual dysfunction, together with the potential impact that breast cancer treatments will have on sexuality; additionally strategies for management are described.

Conclusion: Strategies to improve the recognition of sexuality issues together with approaches to management that are acceptable for the patient while not increasing breast cancer recurrence risk are vital.

Sexual dysfunction is one of the most prevalent issues among women with breast cancer, affecting women during their initial treatment and well into their survivorship years. It is categorised into three main domains; lack of sexual interest/arousal, inability to achieve orgasm and genito-pelvic pain.1 The prevalence of sexual dysfunction in women with breast cancer was highlighted in a report on sexual wellbeing commissioned by the Breast Cancer Network Australia.2 In this study, up to 89% of women surveyed reported significant changes in their sexual wellbeing. Failure to appropriately identify and manage these symptoms resulted in overall poor quality of life.2 This review will focus on understanding the impact that breast cancer treatments have on sexual dysfunction and an approach to its management.

Screening and identifying sexual dysfunction

Screening and evaluating for sexual dysfunction should be part of routine care for breast cancer patients. Common barriers in doing so include limited time for patient assessment, perceived higher priority issues for the appointment and/or clinician or patient embarrassment or discomfort.3 It is estimated that less than 20% of breast cancer survivors seek medical help for sexual issues.4 The challenges to sexual functioning for women who have been treated for cancer are numerous. Women report reductions in multiple sexual domains including frequency of sex, arousal, interest, pleasure, satisfaction and intimacy. It is likely that these issues relate to multiple treatment effects including fatigue, pain, psychological distress, body image concerns and medically-induced menopausal changes (e.g. vaginal dryness, hot flushes and weight gain).5 Given the rapid and life-threatening nature of cancer, women have little time to adjust to symptoms such as reduced sexual desire, lack of sensation and difficulties with orgasm.6

Women undergoing surgery for breast cancer face the loss of a ‘signifier of feminine sexuality’ and a ‘source of erotic pleasure’ either in losing their breast or having it surgically altered.6,7 Feeling less feminine, and maimed and mutilated due to loss of the breast and scarring, are among the many body image concerns of breast cancer patients which challenge self-confidence, leading to worry about desirability and rejection.5,8 Studies comparing surgical interventions have produced inconsistent results. The greatest impact on sexual life appears to be with mastectomy alone, followed by breast conserving surgery, with the least impact occurring for women who underwent mastectomy with...
delayed reconstruction. In a study comparing delayed implant breast reconstruction and deep inferior epigastric artery perforator flap, no difference was found on improvement to body image or on sexual satisfaction.

Radiotherapy brings its own challenges that are likely to impact on sexual functioning, albeit usually temporary, apart from chronic fibrotic changes which might impact on positioning during intercourse. Women complain of pain or discomfort from skin toxicity, breast edema and sensory changes as well as changes to the appearance of the breast such as redness and peeling which can range from mild to severe. Women also report difficulties with sleeping, fatigue, worrying and drowsiness. Threats to body image and sexual functioning are well conveyed by women who express avoidance of being naked and being touched due to disfigurement arising from radiotherapy.

Increasingly, based on improved cancer outcomes, aromatase inhibitors (AIs), are being recommended as adjuvant therapy for the management of breast cancer either as a single agent in post-menopausal women or in combination with GnRH agonists (goserelin) for premenopausal women. In contrast to selective estrogen receptor modulators (e.g. tamoxifen), which acts as an estrogen agonist in some tissues (for example, bone or endometrium) and an antagonist in others (for example, breast), AIs produce profound suppression of estrogen in all tissues. Vaginal bleeding and discharge is more common with tamoxifen, however there is more reported vaginal dryness, painful intercourse (dyspareunia), and loss of sexual interest with AI use.

The most significant predictors of sexual difficulties include vaginal dryness and lower perceived sexual attractiveness. Lubrication difficulties as well as problems with desire and arousal appear to be prevalent among young women treated for breast cancer. Sexual pain arising from vaginal dryness is commonly reported by women who have been treated for breast cancer. The changes arising from the sudden onset of menopause (either via surgical or medical induction) can be particularly traumatic for women who were not anticipating this alteration to their sexual self at this stage of their lives.

Management of sexual dysfunction after breast cancer

The multifactorial nature of sexual dysfunction in the context of a breast cancer diagnosis generally defies a ‘quick fix’; with each issue (psychologic, interpersonal, and physiologic) often requiring an individual approach to management. Available modalities range from education, counselling, and lifestyle interventions to mechanical devices, pelvic floor exercises, and pharmacotherapies. This section will focus on evidence-based strategies for sexual dysfunction in three domains; genito-pelvic pain, lack of sexual interest/arousal and inability to achieve orgasm.

An initial assessment of sexual complaints includes a history of active medical co-morbidities (including a detailed oncological, surgical, gynaecological history) together with sexual history. It is important to remember that sexuality encompasses more than genital functioning. The additional impact of a non-cancer-related chronic illness, fatigue, bladder and/or bowel dysfunction, changes to genital sensation, altered or decreased mobility, use of medications other than those for cancer together with sexual self-image and self-esteem all affect the sense of sexual self and sexual functioning.

Clinicians are advised to enquire about vaginal dryness and sexual functioning at regular intervals during the patient’s longer term follow up. Use of a sexual symptom checklist, such as the Female Sexual Function Index; a validated questionnaire designed to assess key domains of sexual function including desire/arousal, lubrication, orgasm, satisfaction and pain, is also advocated. While designed for use in clinical trials, the Female Sexual Function Index is brief and can be used as a bedside primary screening tool.

Psychosocial factors

Partner support is critical to sexual adjustment following treatment for breast cancer. Women worry about the impact of sexual changes on their intimate relationship. One study identified lack of partner understanding feelings being associated with greater sexual problems. Notably the quality of the partner relationship may have an even greater impact on sexual functioning than the chemical and physical damage arising from cancer treatment. It would appear women's positive feelings about their relationship, about being cared for and understood, along with the capacity for communicating...
about concerns and working together toward solutions may reduce the likelihood of sexual dysfunction. A partner's unconditional acceptance can be profoundly healing, restoring a woman's sense of femininity and desirability.

Partner communication is among the most common psychosocial concerns identified by women who have been diagnosed with cancer. Sexuality concerns are also among the most avoided topics discussed between breast cancer-affected women and their partners and perceived avoidance of these topics is associated with poorer coping and mental health. Health professionals are ideally placed to model that it is healthy and normal to talk about sexual functioning and that sexual functioning is an important quality of life issue.

A useful model for discussing sexual concerns is the PLISSIT model which outlines four levels of increasing intervention depending on what the patient is seeking and their comfort in discussing sexual concerns. Briefly, the first level Permission is about seeking and giving permission to voice sexual concerns. Statements such as; "It is not uncommon for women to experience challenges to sexual functioning when they undergo treatment for breast cancer; is it ok with you if we talk about how your cancer treatment may have impacted on your sex life?" might be an introduction for the patient to discuss issues. The second level Limited Information pertains to the provision of brief information and correction of any myths regarding the patient's sexual concern. The third level, Specific Suggestions, utilises a problem solving approach to each of the patient's specific sexual concerns after exploration of each issue, its meaning for the patient; how is it impacting on her relationship, sense of self, and quality of life; and what strategies she previously tried to resolve the issue. The fourth level Intensive Therapy is where we might refer our patient to another healthcare provider (e.g. psychologist, psychiatrist, sex therapist, physiotherapist, gynaecologist or other relevant medical specialist) for more specialised therapy.

Therapy for women experiencing sexual difficulties following breast cancer treatment can be sourced from a number of professional bodies. Medicare rebates are available for patients with sexual disorders to be treated by a psychologist under the Better Access initiative. The Australian Psychological Society referral service or their online 'Find a Psychologist' search engine can direct people to psychologists who indicate that they work with sexual difficulties. It is also possible to specify 'cancer support' to locate a psychologist who specifically works with these patient groups. The Royal Australian & New Zealand College of Psychiatrists also offers a search engine to locate psychiatrists who work with cancer patients and/or sexual disorders. The Society of Australian Sexologists represents health and allied health professionals working in the area of sexual health and can direct people to accredited psychosexual therapists in their state. The Australian Society of Sex Educators Researchers and Therapists, is a further multi-disciplinary professional organisation that can direct people to accredited sex therapists. Some couples might also benefit from relationship counseling particularly if there were problems in the couple's relationship prior to, or in addition to the sexual dysfunction. Sex therapy is not likely to be helpful if a couple have lost the capacity to speak constructively to each other; couples need to feel safe in their communication with each other before they can begin to talk about sex (www.relationships.org.au).

Genito-pelvic pain (dyspareunia and vulvovaginal atrophy)
Reduced levels of oestrogen from menopause or endocrine therapy can result in vaginal atrophy and dryness. These changes to the vaginal epithelium can cause dyspareunia resulting in loss of sexual arousal and desire. Inflammation of the vaginal epithelium and changes in vaginal pH and vaginal flora may additionally contribute to urinary symptoms and recurrent infections. Management of vulvovaginal atrophy and dyspareunia includes lifestyle measures, non-hormone and hormone treatments.

Signs of vaginal atrophy include dryness, pallor, and tissue fragility, erythematous change denotes inflammation. The Vaginal Health Index is a clinician assessment tool that evaluates the appearance of vaginal mucosa (elasticity, paleness, vaginal discharge, mucosal integrity, moisture) and vaginal pH. Each factor is scored on a scale of 1 to 5 and then summed up to provide the Vaginal Health Index score. A score of less than 14 indicates vaginal atrophy.

Lifestyle modifications
Irritants such as perfumed or dyed toilet paper; tight-fitting clothing; use of soaps, detergents, or fabric softeners; talcum powder; hygiene sprays; deodorant pads; rubber or latex products, including
diaphragms or condoms are increase the risk of dermatitis and inflammation. Simple lifestyle modifications include avoidance of soap and other irritants together with use of soap-free washes to reduce further vaginal dryness. Regular vaginal sexual activity increases the blood circulation to the pelvic organs and in itself may help to reduce the symptoms of vulvovaginal atrophy. Unfortunately, these measures alone are usually insufficient to significantly improve symptoms in breast cancer survivors.

Vaginal lubricants and moisturisers

Topical non-hormonal therapies include vaginal lubricants and moisturisers. The effects of these products are temporary and do not reverse the underlying atrophic process. Repeat topical application is usually required. Vaginal lubricants and moisturisers are applied to the external genitalia, vaginal introitus, and vaginal mucosa during sexual activity to reduce irritation and friction. Vaginal lubricants are short-acting and have no effect on vaginal pH or underlying moisture content. Examples of vaginal lubricants include KY jelly® and Astroglide®.

One randomised controlled study compared the efficacy of water-based and silicone-based lubricant in reducing discomfort during sexual activity in postmenopausal breast cancer patients. There was no statistically significant difference in efficacy between the two types of lubricants (difference 0.7, 95% confidence interval (CI) 0–1.4, \( p = 0.06 \)). Silicone-based lubricant did improve pain/discomfort during penetration compared to water-based lubricants in a post hoc analysis (odds ratio 5.4, 95% CI 1.3–22.1, \( p = 0.02 \)). Patient preference was for silicone-based lubricants. However, despite these findings, 88% of patients continued to report clinically significant sexually-related distress with use of either lubricant.

Vaginal moisturisers such as Replens® contain polycarbophil, an acidic bioadhesive polymer that binds to the vaginal mucosa and releases water and electrolytes to induce vasodilation. This results in improved vaginal mucosal hydration and pH. Replens® was evaluated in a phase III study in women with breast cancer with four weeks of Replens® use, followed by a one week washout period followed by four weeks of placebo lubricating product, or the reverse order. Reduction in average vaginal dryness was similar between the two groups (64% Replens-placebo vs 62% placebo-Replens, \( p = 0.3 \)). Improved dyspareunia scores were detected in the Replens-placebo group compared to the reverse order (60% vs 41%, \( p = 0.05 \)). Symptom improvement occurred predominantly within the first two weeks regardless of type of lubricant and remained constant thereafter.

The use of a vaginal suppository containing vitamins A and E together with hyaluronic acid may also increase vaginal lubrication and alleviate irritation from atrophic and other forms of vaginitis. Patients reported a significant improvement in symptoms and in general compliance was high.

Fractional microablative CO\(_2\) laser therapy

Fractional microablative CO\(_2\) laser represents a novel, non-hormone based approach in treatment of vaginitis. This intervention is advantageous over topical treatments with its potential for longer-term efficacy. Laser therapy applied to the vaginal mucosa aims to improve microcirculation below the level of the mucosa resulting in formation of new collagen on atrophic tissue. Use of fractional microablative CO\(_2\) laser therapy in women with breast cancer has only been evaluated in a small pilot study involving 50 post-menopausal patients. Following three treatment sessions, there was significant improvement in dyspareunia evaluated using a visual analog scale. This pilot study indicated the intervention has a high rate of patient satisfaction with minimal adverse effects. More work is required to specially evaluate use of laser therapy in women on aromatase-inhibitors and assess degree of improvement compared to other interventions.

Topical oestrogens

In one observational study, women with recurrent breast cancer on endocrine therapy were evaluated for the risk of recurrence based on whether or not they had been additionally prescribed vaginal estrogen therapy. There was no association between recurrence risk and vaginal oestrogen use (RR 0.78, 95% CI, 0.48–1.25). Another cohort study addressing a similar question involved 1472 patients with a history of breast cancer with use of topical oestrogen treatments occurring in only 69 of these women. Although the numbers were small, use of topical oestrogens was not associated with worse disease-free survival. However without randomised data, the safety of topical oestrogen remains unclear.
Hormone replacement therapy

Use of systemic hormone replacement therapy (HRT) in a general population of women may alleviate symptoms of vaginal atrophy. There is conflicting data with regards to the use of HRT in women with a history of hormone-positive breast cancer. With the end point of any new breast cancer event, the HABITS trial randomised women with previous breast cancer to HRT or best treatment without hormone replacement. The study closed early after 434 women and 2.1 years of follow up citing an unacceptable risk for women exposed to HRT after breast cancer. During this time, 26 women in the HRT group had a new breast cancer event compared to seven in the non-HRT group. The Stockholm trial randomised 378 women to HRT or non-hormonal therapy. Despite no excess risk after four years of follow-up, this trial closed early when the HABITS trial reported increased breast cancer recurrence with HRT exposure. Results after 10.8 years of follow-up have been published with no difference found in new breast cancer events; 60 in the HRT group vs 48 among non-HRT group (hazard ratio 1.3, 90% CI 0.9-1.9). As the trial closed prematurely, the data does not allow well-founded conclusions regarding the safety of HRT. At present HRT is considered contraindicated in many consensus guidelines.

Androgen therapy

Testosterone has been hypothesised to induce vaginal epithelial proliferation as an alternative to oestrogen therapy. Use of topical testosterone has been evaluated in one small phase I/II study of postmenopausal breast cancer patients on AI therapy. Daily application of topical testosterone at 300mcg (n=10) or 150mcg (n=10) was prescribed for 28 days. Estradiol levels, testosterone levels, symptoms of vaginal atrophy, vaginal pH and vaginal cytology were compared before and after therapy. At 28 days, topical testosterone at both doses was associated with improved symptoms of dyspareunia (p=0.0014) and vaginal dryness (p<0.001) with raising estradiol levels. Only the 300mcg dose resulted in reduction in vaginal pH and improved the vaginal maturation index. Findings from this trial require reproducible results in controlled studies before clinical recommendations can be regarding testosterone.

Two studies using intravaginal dehydroepiandrosterone have evaluated the treatment of vaginal atrophy and dyspareunia including one with patients with a history of breast cancer. Use resulted in decreased pain from sexual activity (p=0.0002), reduction in vaginal dryness (p=0.004) and vaginal pH (p<0.0001). In 441 postmenopausal women with a previous breast or gynecologic cancer, an improvement in the most ‘bothersome’ symptom was demonstrated with a statically significant improvement in sexual function at 12 weeks compared bioadhesive moisturiser alone.

Conclusion

The diagnosis and management of breast cancer result in sexual dysfunction in the majority of patients, both in the short and long term and as such, can impact on quality of life in breast cancer survivors. Symptoms of sexual dysfunction, include psychological and physiological factors and if left undocumented and untreated may lead to non-compliance or discontinuation of longer term therapies in particular. Optimising strategies to improve the recognition of sexuality issues together with approaches to management that are acceptable for the patient while not increasing breast cancer recurrence risk are vital.

References

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