Quality of Life in Gynecologic Cancer Survivors

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Cancer survivorship is a process with both positive and negative aspects. Although much is known about survival rates and complications of therapy for gynecologic cancers, the issue of quality of life has been addressed only recently. The results of preliminary studies only prove how complex the issues are and how difficult they are to quantify.

Quality of life is a concept that is at once obvious and ephemeral. There are as many definitions as there are observers. Factors contributing to a quality life also vary across the lifetime of an individual and take into account various physical, intellectual, and economic opportunities and limitations. Quality of life is influenced by outside forces and intrinsic capabilities. Human beings are enormously adaptable. An individual given major changes in life circumstances finds that what was once unacceptable becomes manageable and what was unappreciated takes on new meaning. That incredible ability to adapt is what makes life so precious and measuring its quality so difficult.

Measurement Tools

The experience of cancer dramatically changes an individual’s major concerns in a unique way. Measurement tools must reflect this changed perspective. General population measures are simply not adequate to assess important aspects of quality of life for cancer patients. In addition, different cancers affecting different organ systems produce different symptoms at different stages in the disease. Individual treatment modalities may require specific modification of quality-of-life instruments. The need to focus on the individual meaning of quality of life introduces many variables and makes empiric investigation difficult.

Somewhere between the extremes of food, clothing, and shelter and a uniquely individual definition of quality of life are broad general categories of qualities that are desirable in life. Hornquist described a construct based on human needs satisfaction and identified the following six spheres, or domains, of importance: physical, psychological, social, activity, marital, and political (involving dealings with justice and authorities).

Berg and colleagues asked 150 well health workers the relative importance that they, in a position of health, placed on 50 abilities or functions. Respondents rated cognitive, emotional, and social functions highest. They placed the highest values on being able to think clearly, to see, to love and be loved, to make decisions for oneself, to maintain contact with family and friends, to live at home, and to walk.

These are qualities desired from a perspective of health, however. When health begins to deteriorate or when a life-threatening situation occurs, evaluation criteria alter dramatically. Where one lives becomes relatively less important than how one lives or, more particularly,
how comfortably and how long one lives.

The working definition of quality of life for cancer patients described by Cella and Cherin\(^3\) is the patients’ appraisal of and satisfaction with their current level of functioning as compared with what they perceive to be possible or ideal. Thus, the issues assessed must be those that are important to cancer survivors. General quality-of-life measures are not applicable. Existential issues may assume greater importance and other factors may recede.\(^4\) The meaning of life and the value of each day may supersede other, now trivial aspects of daily living. Both general and specific measures are needed. Many publications in the field have been based on personal experience, not on careful scientific analysis.

An ideal quality-of-life instrument addresses all of the major domains (physical, psychological, social, spiritual, and global) and positive influences. Psychometric testing must show reliability and validity. The instrument should be broad, representative enough to detect changes important to the patient, and based on patient-generated questions that the patient asks herself through self-administration. To be acceptable to patients, providers, and researchers, a quality-of-life instrument must have a short completion time and be easy to score. Few instruments for assessing quality of life in cancer patients satisfy all of these criteria. Cella et al\(^5\) have noted that few available measures were developed with careful attention to principles of test construction and evaluation. His group developed the functional assessment of cancer therapy scale and refined it for evaluation of patients with gynecologic cancer.

**Impact of Cancer Diagnosis and Treatment**

In most studies of gynecologic cancer, survival without major morbidity has been the primary outcome measure. Complications of disease and treatment can be negative influences on quality of life. Yet little is known about how survivors adapt to these side effects. With the refinement of treatment techniques and the development of equally curative alternatives, attention is now focusing on refining outcome measures as well. The corresponding development of quality-of-life measures now enables health professionals to look at the effects of diagnosis and treatment on specific aspects of an individual’s life. Once these effects are identified, better decisions for treatment and recommendations for assistance can follow.

Gynecologic cancers are the fourth most common cancers in American women.\(^6\) Some gynecologic cancers are common diseases with high survival rates, such as cancers of the cervix and endometrium. Some are rare diseases with high survival rates, such as cancer of the vulva, gestational trophoblastic disease, and germ cell tumors of the ovary. Some are uncommon cancers with low survival rates, such as epithelial ovarian cancers. Each year 33,000 cases of endometrial cancer, 15,000 cases of cervical cancer, and 26,000 cases of ovarian cancer are diagnosed in the United States; overall survival rates are 82%, 68%, and 44%, respectively. Thus, approximately 49,000 women who will be long-term survivors of gynecologic cancers are added to the population each year. If only a small percentage of these survivors suffer morbidity, the result can be a major cost to society in human suffering, loss of productivity, and health care expenditure.

All cancer survivors face the issues of uncertainty, reestablishment of life roles in the family and workplace, financial and insurance problems, short-term and long-term physical disabilities, possible development of second malignancies, and reestablishment of autonomy. In addition to these general issues, gynecologic cancer survivors must face sexual and fertility issues and body image changes that may be less obvious than those in
breast cancer patients. Variables such as age at diagnosis and treatment, treatment type, time since treatment, and associated conditions that add comorbidity also influence quality of life.

**Age at Diagnosis and Treatment**

The impact of cancer diagnosis and treatment varies with the age of the patient. Adolescents treated for germ cell tumors of the ovary with surgery and chemotherapy have been dealt both educational and developmental setbacks. Limited surgery allows retention of ovarian hormonal and fertility functions, but chemotherapy may have side effects detrimental to both sexual function and fertility. Self-image problems from hair loss are temporary and resolve after the completion of treatment. Long-term energy deficits may be the most limiting disability for these young women. Studies of long-term follow-up show excellent cure rates, but little information is available about quality of life in these individuals.

Women in the reproductive years treated for cervical cancers are most affected by fertility and hormonal issues. Either radiation or surgery results in loss of childbearing capacity. Ovaries may be retained after radical hysterectomy as a source of ova for in vitro fertilization, making surrogate parenting a possibility, but it is usually an unrealistic option for most women. Retaining hope for such a possibility may be comforting. Retained ovaries may continue hormonal function, but a high incidence of premature ovarian failure has been observed. Radiation therapy results in almost immediate ovarian failure. Attempts to transpose ovaries out of the radiation field have not been successful in providing high rates of long-term ovarian function and can lead to formation of painful cysts or to additional surgery for complications.

Women in the middle years are strongly affected by concerns about sexual function; provision for family needs; employment and professional development; and the reestablishment of family, work, and community relationships.

Postmenopausal women affected by endometrial, ovarian, cervical, and vulvar cancers face long-term disability secondary to treatment that often enhances or exaggerates the decline in abilities associated with normal aging.

**Associated Conditions**

The threat of second malignancies and genetic implications for family members may cloud an otherwise optimistic future for many gynecologic cancer survivors. Familial patterns of ovarian and endometrial cancer may place individuals at increased risk for breast and bowel cancers. Body habitus patterns that contributed to the development of endometrial cancers may also confer risk for other diseases. Behaviors such as smoking may increase the risk of the survivor of cervical or vulvar cancer for other genital cancers or other smoking-related cancers and disabilities.

**Type of Treatment**

The type of treatment used also influences the issues facing the long-term survivor of gynecologic cancer. Surgery results in missing organs with physical and psychological consequences. Hysterectomy is accompanied by loss of menstrual function, infertility, and possibly sexual dysfunction. The emotional impact of this may vary from positive to negative. Gender identity issues and body image changes are generated by the loss of the organ and the external scars. Vulvectomy is more physically deforming and leads to evident dysfunction in sexuality, urination, and even sitting.

The most extreme alteration of body function and body image results from enterectomy with urinary and fecal diversions. Stoma management and stocking of necessary supplies, management of output from either continent or noncontinent stomas, accidental leakage, skin and odor problems, retraction of stomas with
weight gain, peristomal hernias, electrolyte imbalance, and alteration of sexual and recreational activities are but a few of the time-consuming lifelong daily demands on these patients. Vaginal reconstruction may help overcome some sexual dysfunction but can also add scars and body image concerns that can detract from quality of life.9

Radiation therapy is especially associated with long-term side effects and alterations of bodily function. Fibrosis and atrophy are permanent tissue changes that affect tissue tolerance of ultraviolet radiation, hypotension, and trauma and infection. Dietary limitations are often imposed on patients with lactose and roughage intolerance. Diarrhea may limit the individual’s freedom of movement or lead to complicated travel rituals. Fistulas are rare but cause a major disruption of daily life when they occur. Vaginal drying, atrophy, and contraction lead to sexual dysfunction. A contracted bladder may also severely limit mobility. Loss of ovarian function leads not only to infertility but also to loss of hormone function with the attendant increased risks of osteoporosis and cardiovascular disease. Chemotherapy also has an impact on ovarian function, and the effect is greater with advancing age. Long-term effects on energy levels and on renal, neurologic, marrow, and cardiac function are only now beginning to be appreciated. Secondary leukemia, which can be life-threatening, is a real risk after some chemotherapy regimens.

Measurement of Treatment Effects

As we begin to gather data about the effects on quality of life of both the diagnosis and the treatment of gynecologic cancers, we must look at all relevant issues with instruments developed specifically for our patient population. Although anecdotal or individual case reports are useful, they do not give a broad enough picture. Some studies have reported no greater psychopathologic distress in cancer patients than in the general population.10 Like their healthy counterparts, most cancer survivors adapt to their limitations and live fulfilling lives.

A significant percentage of cancer survivors may exist, however, who do report major dysfunction.10 In addition to depression and anxiety, the emotional distress can consist of intrusive thoughts about cancer and symptoms that may be similar to the distress seen in post-traumatic stress disorder. Predictors of post-traumatic symptoms are now being researched in breast cancer and bone marrow transplant patients, but little is known about such symptoms in gynecologic cancer patients. The ability to identify individuals at high risk for chronic distress or post-traumatic symptoms would be a major contribution. It is possible that patients who refuse to participate in quality-of-life studies may be the most distressed, both physically and emotionally.

Women with Survivable Gynecologic Cancers

To date, the effects of cancer diagnosis and treatment on women with survivable gynecologic cancers have been evaluated in only one longitudinal prospective study, which looked at the incidence and cause of major life difficulties for gynecologic cancer survivors.11 In this study the cancer patients had recently diagnosed, but as yet untreated, gynecologic cancers in either stage I or stage II. Two clinical groups were studied for comparison. The first consisted of women undergoing treatment for disruptive but benign gynecologic disease, most of whom were about to have surgery for uterine leiomyomas or stress incontinence. The second control group consisted of healthy women scheduled for routine gynecologic examinations who provided a baseline, or normative estimate, for the samples.

All patients were assessed at intake and at 4, 8, and 12 months after treatment. The cancer subjects underwent intake assessment during the metastatic work-up,
roughly 1 to 2 weeks after the patient learned of the diagnosis from the referring physician and before she received any treatment. The benign gynecologic disease subjects were assessed initially at the preoperative visit 1 week before the surgical admission. The healthy subjects were assessed the day they came in for their routine gynecologic checkups.

At initial pretreatment assessment significant differences were found among all three groups in the level of total mood disturbance reported. The cancer patients were significantly more distressed than were the women with benign disease, who, in turn, were significantly more distressed than were the healthy women.

The origin of the distress appeared to be a combination of fatigue, anxiety, and confusion. Fatigue levels reflected the overall group differences between women who are healthy and those with disease, whether malignant or benign. Cancer patients had levels of anxiety comparable to those of the individuals anticipating surgery for noncancerous conditions, and both groups were significantly more anxious than were the healthy controls. Cancer patients reported significantly more depression than did either comparison group. The benign disease group was more depressed than the healthy group but less depressed than the cancer group.

Another interesting finding was the significantly greater confusion of the cancer group. A quality often noted in cancer patients, and as yet not quantified, is their sense of generalized confusion and inability to concentrate, as evidenced in their not remembering information told them repeatedly. Clinicians often attribute this confusion to anxiety, depression, or denial, and it may relate to all three qualities. In this study, however, those in the benign disease group did not report high levels of confusion despite their comparable level of anxiety and some depression. This suggests that for the gynecologic cancer patient, confusion may be a separate measure of emotional disturbance, not simply the result of anxiety or depression. Women directly questioned about the source of their acknowledged confusion often report that they no longer know how to interpret body symptoms and have difficulty understanding how their bodies work. Essentially, it appears that the mind must re-stock experience, akin to learning to walk again after a stroke. By identifying this component of mood disturbance, we may be able to resolve it with information and education. Because chemotherapy and radiation treatments may cause many new side effects, the need for education is ongoing. A decrease in confusion over time as the learning process progresses would support this assumption. In fact, follow-up assessment showed exactly that. At 4 months after treatment, overall mood improved significantly in the two disease groups compared with their initial assessments; further decrease to the baseline levels of the healthy group occurred by 12 months.

Social adjustment measures showed no differences in familial or social relationships or activities among the three groups or across time. Marital adjustment was also similar across all groups and across time, with equal rates of marital breakups or problems. Employment status and occupation were also similar among groups and across time. Understandably, women in the two disease groups spent less time “on the job” during recovery, but they returned to pretreatment levels by the 12-month follow-up. These data suggest that the stresses of the diagnostic and treatment phases are time-limited and lend support to the idea that a crisis response to cancer diagnosis and treatment occurs and that distress dissipates with recovery. We should remember that this was a study of early stage, potentially curable cancers with a limited prescribed treatment. Cancers requiring more prolonged treatment and less certain outcome will inevitably result in more complex patterns of re-
response. The reactions of patients with chronic illness and fatal disease may be altogether different.

**SEXUAL DYSFUNCTION**

Sexual dysfunction has received more extensive attention from researchers than has any other aspect of quality of life. As might be expected because of the organs involved, a high degree of sexual dysfunction is reported among gynecologic cancer survivors, with estimates ranging from 20% to 100%. The variability of these estimates reflects the lack of uniformity in the groups studied, whose treatments ranged from exenteration to vulvectomy to simple hysterectomy and from surgery to radiation therapy. The degree and nature of sexual dysfunction vary according to the type, length, and intensity of treatment. Vulvectomy and exenteration introduce the most dramatic and anatomically obvious changes. Radiation therapy has long-term sequelae for vaginal function. Therapy-induced menopause aggravates any other anatomic changes.

Most studies of sexual dysfunction in gynecologic cancer have assessed women at some time after treatment. Andersen and colleagues’ prospective longitudinal study assessed pretreatment status and compared changes over time, using groups with no gynecologic problems and those undergoing benign gynecologic surgery to control for the influence of both surgery and the cancer diagnosis itself.

Cancer patients report premorbid patterns of sexual activity and responsiveness similar to those of healthy women, with similar rates of inhibited desire, excitement, or orgasm in both groups. With the appearance of cancer signs and symptoms, cancer patients report experiencing significant symptoms of dysfunction, including inhibited sexual desire and loss of desire for intercourse. Little loss of desire for nonsexual affectionate behavior such as kissing was reported. Among women who had no sexual dysfunction before the diagnosis and treatment of cancer, approximately 50% eventually were diagnosed with at least one dysfunction during the year after treatment. Although some improved, others worsened, and by 12 months after treatment approximately 30% of cancer patients were suffering from some sexual dysfunction. An important element to remember in assessing sexual function is partner dysfunction. In Andersen’s study the two disease groups had equal rates of partner dysfunction, and both had significantly increased frequencies of partner dysfunction compared with the healthy group.

Signs and symptoms of estrogen deficiency were significant in both disease groups at 4 and 8 months; at 12 months these signs and symptoms resolved for the benign disease group but persisted for the cancer patients. Thus, menopausal symptoms and signs were induced temporarily for the benign group and continuously for the cancer group. Even in women who have undergone surgical management of early cervical cancer with or without transposition of retained ovaries, a very high percentage suffer from premature ovarian failure. These women will suffer from osteoporosis, cardiovascular disease, and genitourinary atrophy, any of which can negatively affect quality of life.

**Quality of Life**

The long-term survival of one-half to two-thirds of all gynecologic cancer patients means that many women require assistance in returning to normal psychosocial functioning. We know next to nothing about their quality of life. We can theorize that these women are more anxious about body symptoms and dysfunction and that they may have residual limitations from the toxicity of the treatment they have undergone. They will also meet with institutional and societal prejudices about the “possibly cured”
cancer patient and may have difficulty in employment and insurability.

Although little information exists about gynecologic cancer patients, findings in the nongynecologic cancer literature may be helpful in establishing research directions. At the termination of active cancer treatment, a marked increase in depression, death anxiety, and anger have been reported,\(^1\) accompanied by an increased need for reassurance.\(^1\) Along with the loss of a treatment perceived as actively fighting the cancer, patients also lose the immediate social and informational support of the medical staff.\(^1\)\(^5\)\(^2\)

In addition, numerous social and role issues arise when women reenter the family and work environment, including expectations for resumption of "normal" activities during a time of continued low energy and recovery.\(^2\)\(^1\)\(^2\)\(^5\)\(^2\)\(^6\)\(^2\)\(^7\) Although some studies have reported a normalization of mood by 1 year after breast cancer treatment,\(^2\)\(^2\)\(^2\)\(^5\)\(^2\)\(^6\)\(^2\)\(^7\)\(^8\)\(^9\)\(^1\)\(^0\) particularly in patients with less severe disease,\(^2\)\(^6\)\(^2\)\(^7\) long-term residual disturbances have also been noted, including difficulties with depression, energy level, occupational functioning, relationships, sense of well-being, and fear of recurrence.\(^2\)\(^6\)\(^2\)\(^5\)\(^1\)\(^1\)\(^2\)\(^1\)\(^3\)\(^1\)\(^4\)\(^1\)\(^5\)\(^1\) These continuing issues are thought to be related to psychological sequelae from the trauma of diagnosis, treatment, and threat of death and continuing confrontation with cancer-related physical changes and losses.\(^2\)\(^2\)

Auchincloss\(^3\)\(^3\) has reviewed psychosocial issues observed in gynecologic cancer survivors and emphasizes the difficulty such women have in forming support groups to help in dealing with survivor problems and stresses. This difficulty may be in part the result of the relative rarity of each individual disease with its specific constellation of disease- and treatment-related characteristics and problems. She points out that intervention studies are the next focus of research efforts.

Andersen\(^4\)\(^4\) has called for studies assessing predictors of risk for psychological morbidity in cancer survivors, emphasizing the importance of psychiatric comorbidity, illness comorbidity, social support, and demographic status as factors identifiable at the time of diagnosis. A model is proposed combining the following factors: the extent of disease and treatment, the occurrence of new health problems in the cancer survivor, and coping style. The purpose of the model is to identify individuals in low-risk, moderate-risk, and high-risk groups for psychological and behavioral morbidity. Such a model provides a construct for future research.

Another question that needs more attention is that of the positive gains of having been treated for cancer and having survived. In addition to survival, appreciation of life and reorientation of priorities may greatly add to quality of life.

**Conclusion**

We are entering an era of intense effort to develop specific quality-of-life measurement tools for gynecologic cancer patients and survivors and to refine our ability to assess the impact on the patient of disease and treatment. The results of this effort should enable us to develop better management protocols, to give patients more information with which to make decisions regarding the conduct of their lives, and to allocate better increasingly scarce resources.

Schipper et al\(^3\)\(^5\) point out that "quality of life studies will force us to come out from the comfort of technological medicine into a world that is less concrete and less controllable, but more human. Out of it we will be better physicians, more sensitive to the vigor, complexity, and adaptability of the human soul.”

Understanding the stresses faced by our patients can enable us as caregivers to ease emotional and physical pain. At the very least, we can sustain the patient
through an arduous course of treatment and a prolonged and uncertain follow-up. At best, she can grow to a new and deeper level of understanding and awareness that can enhance her life immeasurably and can be inspirational to those around her, including family and medical personnel.

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