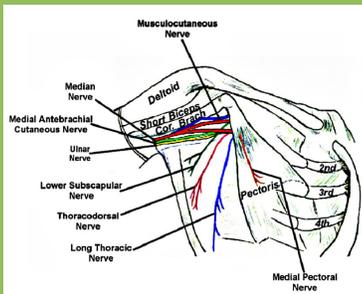


UPPER THORACIC NERVES



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INTRODUCTION

Post Breast Therapy Pain Syndrome (PBTPS) is a complex constellation of symptoms. PBTPS can be defined as persistent neuropathic pain, and is often associated with symptoms of numbness, dysesthesia, edema, and allodynia located in the chest wall, axilla, arm, or shoulder of the surgical side. The old term, Post-Mastectomy (after breast amputation) Syndrome, is not sufficiently descriptive with breast-preserving therapy. Recent research suggests that newer approaches to the surgical treatment and staging of breast cancer, such as sentinel lymph node biopsy (SLNB), may significantly decrease the incidence of PBTPS.

PBTPS may result from neuropathic changes associated with surgery, chemotherapy, radiation therapy, and hormonal therapy. Chemotherapy drugs commonly associated with peripheral neuropathy include vincristine, viblastine, vinorelbine, cisplatin, paclitaxel, docitaxel, carboplatin, oxaliplatin, cisplatin, etoposide, tenoposide, thalidomide, bortezomib and interferon. Any breast-associated surgery (e.g., mastectomy, lumpectomy, lymph node biopsy, breast implant placement, and breast augmentation or other types of breast reconstruction) may result in the development of PBTPS. Scar tissue that forms after surgery is not as elastic as healthy skin, and may entrap nerve fibers as the incision heals. Any healing complications such as an infection may further increase the risk of PBTPS. Abnormalities in the healing of divided sensory nerve fibers (e.g., neuromas) may also lead to chronic pain in or near incisions.

Chronic upper extremity swelling, or lymphedema, may also adversely affect breast cancer survivors with short-term or long-term discomfort, chronic pain, debility, and loss of function in the affected limb. Edema adds weight to the limb, causing a sensation of heaviness. Severe lymphedema may, in some cases, put pressure on major motor and sensory nerves causing varying degrees of paresthesia and paralysis. Lymphedema, which may occur in 5 to 15% of patients following breast cancer surgery, is a chronic problem that may lead to distress, pain, and loss of function, anxiety, as well as serving as a daily reminder of a patient's prior treatment for cancer. Another specific area of PBTPS-related functional impairment is the inability to comfortably use a computer which, in the Information Era, may result in significant professional and personal challenges to affected patients.

Complications of breast cancer therapy, and lymphedema and PBTPS in particular, can result in a significantly adverse impact on quality of life (QOL) for millions of breast cancer patients. Current standard clinical management approaches are often ad hoc in nature, in the absence of well-defined and evidence-based clinical practice guidelines. Chronic symptoms associated with breast cancer therapy often lead to daily challenges at home and at work, with attendant anxiety and depression for many patients.

In post-surgery follow-up visits, patients may report mild postoperative pain symptoms, however the symptoms of PBTPS, when it does arise, may not manifest as an ongoing chronic problem until 30 to 90 days after surgery, or in some cases, even many years later. Over 50% of patients diagnosed with PBTPS unexpectedly experience chronic pain and other serious sensory disturbances. They report increased pain with movement, leading to clinically significant arm and shoulder restriction of motion. PBTPS discomfort interferes with active daily living and sleep and impairs overall quality of life.

PBTPS remains under-reported, and when it occurs, it may be a debilitating repercussion of breast cancer therapy. Because PBTPS is not well understood by many physicians, breast cancer patients are often not advised about this risk prior to surgery, or the risk may be otherwise minimized. Clinical standard management approaches are not well delineated, resulting in considerable confusion and frustration for patients. Many patients are oftentimes advised to seek psychiatric care by well-intentioned physicians who are unfamiliar with PBTPS. In some patients, PBTPS may leads to fears of cancer recurrence, resulting in additional anxiety, and for some patients, depression.

PBTPS is best treated as early as possible, because it may become chronic and more resistant to effective treatment if diagnosis and initiation of therapy is delayed. The timely diagnosis and treatment of PBTPS requires that both physicians and patients have a clear understanding about this syndrome, and that appropriate referrals to experienced pain management specialists are made in a timely fashion.

Patients undergoing therapy for breast cancer should, therefore, be fully counseled, prior to treatment, as to the potential short-term and long-term risks associated with breast cancer therapy. Evidence-based treatment guidelines should be developed, and integrated into breast cancer clinical pathway algorithms.

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