



Denying the Obvious: Four Extreme Cases of Neglected Tumors

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Background: Little is known about the relatively common phenomenon of patients neglecting tumors as part of a denial mechanism to presumably cope with the obvious, outward and clearly visible signs of cancer. As a result of this tumor neglect, disease progression continues unchecked, resulting in excessive tumor growth, invasion of nearby structures, (often) metastatic spread, and significant disfigurement.

Methods: In this case series, we present 4 extreme cases of neglected tumors that posed significant reconstructive challenges and explore the biopsychosocial components of tumor neglect.

Results: In this series, we present 4 cases representing various cases of extreme tumor neglect. These 4 cases required multidisciplinary efforts involved in tumor resection, adjuvant treatments and the complex reconstructive efforts after tumor extirpation.

Conclusions: The tumor neglect phenomenon is of broad interest to the field of plastic and reconstructive surgery. Given the complex patient factors that contribute to the extreme state of disease progress upon presentation, all cases required extensive extirpative efforts with complex and challenging reconstructive solutions. Cases of extreme tumor neglect provide insight into the biopsychosocial underpinnings of this specific patient population and have implications for a further understanding of the potential immunoprotective effect of these large, longstanding, and often nonmetastatic tumors. (*Plast Reconstr Surg Glob Open* 2015;3:e571; doi: 10.1097/GOX.0000000000000541; Published online 23 November 2015.)

Delay in cancer treatment has been a topic of numerous studies.¹⁻³ Despite the efforts represented by these studies, patients continue to neglect seeking timely treatment and suffer signifi-

cant consequences for this neglect.⁴⁻⁶ For example, approximately one-third of women experiencing breast symptoms delay more than 3 months before seeking medical help.⁷ In another study, patient neglect was found to cause one-third of giant basal cell carcinomas.⁸ The trend of individuals neglecting treatment for their cancers is correlated with the lack of sufficient understanding of this behavior. Although there were an estimated 1,660,290 new cancer cases in the United States in 2013, it is unknown how many patients delayed seeking medical help and for what reasons.⁹

The consequences of neglected cancer are excessive tumor growth, invasion of nearby structures, metastatic spread, and significant disfigurement. Treatment of the neglected tumor is thus compli-

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cated, requiring advanced skills in resection and reconstruction, a multidisciplinary approach to treatment, and frequently, referral to a tertiary care facility. In this report, we present 4 cases representing tumors at an extreme state of neglect, and we discuss patient characteristics, clinical presentations, and treatments.

METHODS

Case 1

Patient 1 is a 62-year-old woman with a 12-year history of a scalp malignancy. Biopsy result of the tumor revealed

invasive squamous cell carcinoma, and computed tomography (CT) scan revealed a large mass eroding into the skull with lymph node involvement. Positron emission tomography (PET) scan showed no sign of metastases. Physical examination revealed a foul-smelling, fungating, 30×30 cm bleeding mass, covering the entire calvaria (Fig. 1). The patient underwent margin-free en bloc resection including parasagittal vertex craniectomy and reconstruction with latissimus dorsi free tissue transfer and split-thickness skin grafting. Regional lymph node biopsy was negative for malignancy. The patient received postoperative radiotherapy. The patient remains without recurrent or metastatic disease at 2 years.



Fig. 1. Sixty-two-year-old woman with squamous cell carcinoma of scalp. Neglected treatment for 12 years.

Case 2

Patient 2 is a 55-year-old woman with a 10-year history of a vertex scalp lesion that had progressive growth and ulceration (Fig. 2). The biopsy result revealed basal cell carcinoma. Imaging showed invasion of the calvaria. A wide soft tissue resection was performed (14×12 cm) with simultaneous craniotomy and calvarial resection. A latissimus dorsi free tissue transfer and split-thickness skin graft were performed. The patient remains without recurrent disease at 5 years.

Case 3

Patient 3 is a 51-year-old woman with a 5-year history of recurrent breast invasive ductal carcinoma. Her original breast cancer was treated with lumpectomy and radiation. After her initial treatment, she was lost to follow-up. She presented to the emergency room because of pain and immobility caused by a fungating, foul-smelling tumor in her right axilla (Fig. 3). PET scan demonstrated pulmonary involvement with lung nodules and hilar adenopathy. The results of biopsy showed recurrent invasive ductal carcinoma. After neoadjuvant chemotherapy, she underwent radical mastectomy including resection of the pectoralis muscles and reconstruction with a pedicled latissimus dorsi myocutaneous flap and split-thickness skin graft. In follow-up visits, her flap and skin graft demonstrated adequate viability. She is currently undergoing oncologic treatment for her metastatic disease.

Case 4

Patient 4 is a 64-year-old man with a 5-year history of a progressively ulcerated lesion of the right chest, extend-



Fig. 2. Fifty-five-year-old woman with basal cell carcinoma of scalp. Neglected treatment for 10 years.



Fig. 3. Fifty-one-year-old woman with invasive ductal carcinoma of the breast. Neglected treatment for 5 years.

ing from the clavicle to the costal margin and from the right mid-axillary line to the left costal cartilages (Fig. 4). Biopsy result demonstrated squamous cell carcinoma. A preoperative work-up revealed no metastatic disease. A wide resection was performed en bloc from clavicle to the seventh rib and right axillary ribs to the left costal cartilages including the sternum. Reconstruction was performed with left latissimus and serratus muscle flaps, right deltoid muscle flap, right external oblique myocutaneous flap, and split-thickness skin grafts. After 2 months, the patient was decannulated and breathing without support. One local recurrence was resected at 1 year post-operation. The patient remains without further recurrent disease at 3 years.

DISCUSSION

Denial is a normal human response to adversity that enables individuals to adapt to a stressful situation by lessening a “threatening portion of reality.”¹⁰ This common and well-described coping mechanism allows patients to navigate overwhelming medical information during their diagnosis, treatment, and recovery.¹¹ However, denial can be maladaptive and even dysfunctional if it leads to behaviors that are detrimental to their care. As demonstrated by this case series, patients sometimes neglect medical care even though symptoms of true malignancy are shockingly evident. In essence, they deny the obvious.

Many psychosocial, physiological, and demographic factors have been found to be associated with patients who display maladaptive and unhealthy denial.¹² For example, poor medical knowledge, socioeconomic stresses, and tumors that grow slowly are factors strongly linked to these patients.¹³ Delay in medical care is also found to be correlated with patients’ mistrust in medicine that arise from their prior experiences of cancer diagnosis and treatment.¹⁴ Findings from these studies indicate that patients are more or less aware of the growing tumors, but because of complex psychosocioeconomic



Fig. 4. Sixty-four-year-old man with squamous cell carcinoma of chest. Neglected treatment for 5 years.

factors, some patients deny the significance of large and slowly growing tumors more than do others.

After a protracted delay in seeking help, patients ultimately seek medical care, most often driven by external factors. For example, a sudden change in the lesion (eg, aggressive growth, pain, or bleeding) or a friend or family member who actively urges the patient to seek medical care are factors that prompt patients to finally receive care.^{15,16}

Extreme neglect of cancer results in advanced growth and requires treatment that involves multidisciplinary planning. First, careful physical examination should be followed by histological characterization of tumor and radiological staging with CT and PET scans. Metastatic cancer may require chemotherapy and/or radiation. Because of the involvement of other vital organs, such as lung, calvaria, and axillary lymph nodes, collaboration with an expert thoracic surgeon, neurosurgeon, or general surgeon is often warranted.

Surgical procedures require 2 steps: resection of tumor and reconstruction of resultant defects. Resection of a large tumor with negative margin is essential to control local recurrence.¹⁷ If dural invasion is suspected in the head and neck tumor, contrast CT and magnetic resonance imaging are necessary to provide accurate anatomy for surgical planning.¹⁸ Furthermore, computer planning and intraoperative navigation can provide essential tools to obtain margin clearance.¹⁹ Each case provides unique anatomical challenges and defects of various sizes. Although large neglected tumors have been reported as occurring on all regions of the body, the most common sites of reported longstanding neglected tumors seem to be the head and neck.^{12,13,17-22} These tumors are usually basal cell carcinoma or squamous cell carcinoma, and although not always confirmed on histology, massively neglected tumors also seem to be slow growing and of a less aggressive subtype.^{12,13} Furthermore, there is the unanswered question of whether these extremely

large tumors exert an immunoprotective effect, which precludes distant metastasis.

Choice of flap reconstruction should be based on clinical judgment, anatomical presentation, and a plastic surgeon's experience.¹⁷ Given the size and location of locally advanced neglected tumors, local tissue rearrangement is often unavailable. Therefore, it becomes necessary to use large and sometimes multiple regional flaps as described in case 4, or more often, large muscle flaps for free tissue transfer as described in cases 1, 2, and 3. The latissimus dorsi is one of the most frequently used free muscle flaps for this type of reconstruction given its size and its long and reliable pedicle.^{21,22} If even larger surface area is needed, a chimeric flap of combined latissimus dorsi and serratus can be harvested.

In conclusion, each reported case demonstrates a story of extreme neglect despite visible signs of malignancy that were apparent to both patient and family members. Although challenges still lie ahead in understanding the various and interrelated factors that lead to delay in medical care by these patients, a better biologic understanding of the apparent immunoprotective effect of these large and longstanding tumors could provide significant new strategies for the treatment of all malignant neoplasms.

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PATIENT CONSENT

Patients provided written consent for the use of their images.

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