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Palliative radiotherapy for treating fungating breast cancer - A powerful treatment modality

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CASE STUDY

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ABSTRACT

Although early detection of breast cancer has increased over many decades, locally advanced breast cancers still occur, and they present a difficult clinical condition to manage. They often have significant associated symptoms, such as bleeding, pain and malodour, which can impact on quality of life. Unfortunately, there are often few curative options for their management.

We describe the case of a patient with a fungating breast cancer managed with high dose palliative radiotherapy, achieving good, durable local control and symptomatic relief. This case report highlights the effectiveness of a treatment often underutilised.

Key Words
Palliative radiotherapy, locally advanced breast cancer, fungating breast lesion

Implications for Practice:

1. What is known about this subject?

Breast cancer presents with ulceration of the primary in 6-15 per cent of cases and 7 per cent of the time in metastatic cases.

2. What new information is offered in this case study?

This case highlights a little recognised role of radiation in controlling local breast cancer symptoms for patients who are non-operable candidates due to extensive local disease or metastatic spread.

3. What are the implications for research, policy, or practice?

Primary care physicians should be aware of the importance of durable symptom control and improved quality of life, and the role radiation can play to achieve this.

Background

Locally advanced and inflammatory primary breast cancer represents approximately 6-15 per cent of all breast cancer diagnosis. Seven per cent of patients diagnosed with de novo metastatic disease will also have locally advanced breast primaries.[1,2] The locoregional treatment for these cancers is more difficult as breast conserving therapy or mastectomy is often not achievable.[3] Neoadjuvant chemotherapy or hormonal treatment can be used to down stage the primary but in some circumstances, it will remain unresectable.[1]

Left without local treatment, these breast cancers can cause significant discomfort through invasion of local structures and skin. Depending on the site and extent of the primary and regional lymphadenopathy, patients may develop significant pain, arm weakness, dyspnoea or dysphagia.[4,5] They can fungate and bleed, causing malodour and difficulty with nursing cares. The emotional and social impact from these complications can contribute to overall distress for

the patient and their families and are often underestimated.[5]

When these complications are likely to occur, or are already present, radiotherapy can be used to control or reverse the local complications through the shrinkage of the tumour.[6] The treatment can be delivered on an outpatient basis, has minimal morbidity and is well tolerated by the vast majority of patients. A variety of dosage schedules are used depending on the goals of therapy as well as the age and prognosis of the patient. Most patients are treated with shorter courses of moderately high dose radiation, given as outpatient treatment daily for three to four weeks. Frail patients can be offered short courses of radiation over a week or alternate schedules of radiation treatment twice a week for three weeks, minimising travel and time away from home.

Case details

A 63-year-old lady presented to clinic with a new diagnosis of metastatic breast cancer with a locally advanced, fungating primary.

She had recently presented to the emergency department with bleeding from an ulcerating mass in her left breast. The mass had slowly developed over a three-year period prior to presentation, but only recently began bleeding. There were no other symptoms related to the primary or disseminated disease.

Her medical history included a mild form of osteogenesis imperfecta, hypertension and a previous ORIF of her left elbow.

At the time of presentation, she underwent investigation with a CT of her chest abdomen and pelvis. This showed a 7X12cm left breast mass invading her pectoralis muscle and fungating through the skin of her medial breast. Suspicious axillary lymph nodes were evident bilaterally, but there was no evidence of visceral metastatic disease. Biopsy of the breast lesion confirmed an infiltrating ductal carcinoma that was oestrogen and progesterone receptor positive and HER 2 negative. Subsequent FNA of the suspicious lymph nodes confirmed metastatic breast cancer involving bilateral axillae. This staged the patient as T4cN1cM1 – Stage IV, due to the contralateral axillary nodes. The contralateral axillary lymphnodes being a marker for systemic disease.

The patient was discussed in a multidisciplinary setting and referred to medical oncology. A decision was made to initiate palliative intent systemic treatment with Letrozole in combination with Ribociclib (CDK4/6 inhibitor). Two weeks into treatment she developed a QTc prolongation and Ribociclib was withheld. The patient had ongoing bleeding and malodour of the primary without improvement and treatment of the primary was then considered for symptom control. As the primary invaded pectoralis major and was involving skin, it was deemed unresectable, and she was referred to radiation oncology for treatment.

At the time of consultation with radiation oncology, she had ongoing minor bleeding from the exophytic lesion with associated malodour but no discomfort. Examination revealed a large exophytic lesion in the left breast measuring 15×10cm with some bleeding. No obvious regional lymphadenopathy was palpable. The patient was having daily dressings done by domiciliary nurses.

The patient agreed to undergo radiation for local control to improve her symptoms and received 50 Gy in 20 fractions over four weeks to the left breast and ipsilateral axillary nodes. A conformal radiation technique was used, and bolus was placed on her chest wall to bring the dose up to the skin.

During the four-week treatment she was seen weekly and an obvious response in the primary was noted in consecutive examinations. She also developed a brisk dermatitis that required daily skin cares by the radiation oncology nursing staff.

At the end of treatment, the patient had confluent desquamation over the primary tumour and surrounding skin. This required adequate pain relief using simple analgesia and oral opioids titrated to needs. She also had an obvious decrease in the size of the primary with only a small palpable mass remaining and the exophytic mass having regressed.

Post treatment she had her skin examined once weekly by nursing staff in the radiation oncology clinic, until the open wound had closed over. Post treatment, daily dressings were performed by the patient under the guidance of nursing staff. The chest wound was dressed in simple absorbent, non-adherent dressings and the surrounding intact skin was moisturised daily. As the wound was malodorous, topical metronidazole was placed on the wound before dressing, with good decrease in odour. Her analgesia was then titrated downwards as the wound

healed and her pain eased.

At clinic assessment six months post treatment the acute radiation dermatitis had resolved and there was no longer an open wound. A significant reduction in the primary was also noted with only a small (2–3cm) palpable mass remaining. By eleven months her breast ulcer had healed with no palpable tumour.

Discussion

In localised breast cancers, surgery followed by adjuvant radiation is the main stay of curative treatment and represents the vast majority of clinical cases in Australia. Once metastatic, a patient's prognosis is determined by their response to systemic therapy and local treatments are only aimed at symptom control.

Advances in screening and treatment have reduced the number of presentations of locally advanced breast cancer, but there is still a proportion of patients that will present with this clinically difficult condition.[7]

Traditionally the prognosis for these patients tended to be poor and they would often have symptoms negatively affecting function and psychological wellbeing.[4,8] With new systemic treatments, the survival of these patients is extending and every effort should be made to ensure durable local control that can help control the patient's symptoms and improve their quality of life.

Various surgeries from debulking to toilet mastectomy may be used, and other local therapies such as tumour embolization or nerve block may be considered.[3,9]

One of the most important modalities in these situations is radiotherapy, as it can provide pain relief, cease bleeding and improve open malignant wounds.[10,11] It can be given on an outpatient basis and has manageable acute toxicity associated with it. The exact dosages and treatment schedules can be tailored to the patient and their circumstances, making it effective in many different clinical situations.[12]

As well as local treatment, these patients require optimal pharmacological analgesia in the interim and comprehensive nursing to care for both the malignant fungating wound and the toxicity of treatment until resolved.[13] Dressings to decrease the exudative output and to protect the surrounding healthy skin are required. Creative dressings with antibiotics or charcoal can be used to decrease the bacterial load in the wound, reducing malodour.

The use of radiation to palliate primary breast malignancies is poorly reported in the literature, although it is commonly performed. This case should highlight the excellent outcomes that can be achieved when palliative radiotherapy is used in locally advanced breast cancers.

Conclusion

Locally advanced breast cancers are difficult cases to manage appropriately. There are multiple treatment options that need to be individualised to the patient. These patients are best managed in a multidisciplinary setting to achieve the best outcomes for them. In view of the advanced nature of the cancers these patients need psychological support and referral to other allied health workers. Palliative radiotherapy is one of the main modalities of treatment that can provide great symptom control and improve quality of life.

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PEER REVIEW

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CONFLICTS OF INTEREST

The authors declare that they have no competing interests.

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PATIENT CONSENT

The authors, Williams CP, Harvey JA, declare that:

1. They have obtained written, informed consent for the publication of the details relating to the patient(s) in this report.
2. All possible steps have been taken to safeguard the identity of the patient(s).
3. This submission is compliant with the requirements of local research ethics committees.

Figure 1: Locally advanced breast cancer at diagnosis

Figure 2: Eleven months post treatment