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Original Article

Are improvements needed in the management of severe acute skin reactions following completion of breast radiotherapy? A discussion of some possible service options

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Abstract

Radiotherapy is a critical component for many patients undergoing treatment for breast cancer. Most patients develop some degree of acute radiation skin reaction as a result of the treatment. Acute skin reactions range from faint erythema to moist desquamation and often peak within 1 month after completion of treatment.

The emphasis of radiotherapy skincare advice is often during treatment with less attention paid to post-radiotherapy skincare. This article highlights this gap in service provision at one radiotherapy centre and demonstrates the difficulties encountered when there is an inadequate support system. Possible options are discussed for the management of skin reactions after radiotherapy and the potential implications of adopting these strategies. The pragmatic solution introduced to Addenbrookes' Hospital was to amend patient information providing a supplementary section for health-care professionals overseeing patient care after completion of treatment. This has gone some way to addressing this issue but still has limitations.

Provision of timely and consistent skincare advice and support is vital to provide high-quality patient care. This article emphasises the importance of standardisation of radiotherapy skincare and providing an effective support network for patients after completion of radiotherapy.

Keywords

Acute skin reactions; skincare; breast cancer; radiotherapy

INTRODUCTION

Radiotherapy is a critical component in the treatment of breast cancer, and accounts for a substantial proportion of all radiotherapy that is undertaken.[1] Breast irradiation uses ~30% of radiotherapy resources in the United Kingdom.[2] When delivering radical doses of radiotherapy, radiation skin reactions are a common consequence; up to an estimated 90% of patients treated with radiotherapy for breast cancer will develop a degree of radiation-induced dermatitis.[1] Reactions can range from faint erythema to painful skin breakdown. These effects can impact quality of life, if they become a source of significant pain or discomfort or limit daily

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activities, and can impact survival outcomes, if they cause interruptions in treatment.[3]

As part of patient care, it is important to ensure the risk of skin damage is minimised as far as possible. Radiation-induced skin reactions cannot be prevented so the aim must be to delay onset and minimise factors that exacerbate the inevitable radiation damage and in turn promote comfort for the patient for as long as possible.[4] An essential part of achieving this is providing patients with accurate and appropriate advice and support regarding the management of skin changes in a timely manner from the outset of treatment.

Skincare for radiotherapy patients can be a controversial subject because practices differ considerably between institutions and often also between individual practitioners,[5] as demonstrated by several surveys.[6–8] There is a wide range of literature available on this issue, but as yet there appears not to be full agreement on best practice.[9] More work is needed to fill the knowledge gap in this area and to develop strategies for standardisation of care and the use of clinical practice based on evidence. Work in this field is currently being undertaken through the Academic Clinical Oncology and Radiobiology Research Network (ACORRN), by a joint collaboration between the Research Radiographer and Nurses in Radiotherapy Working Groups.

For patients with breast cancer, the problem occurs in that often skin reactions reach a peak after the end of radiotherapy and begin to subside 2–3 weeks after therapy is completed.[4] It is at this time some patients may need support and expert advice. Unfortunately, there is no national recommendation for timescales for when to review patients after completion of radiotherapy and many centres, including our own, do not provide review and after care services after completion of radiotherapy. At the time when skin reactions peak, some patients may not be having the optimal management of their skin reactions.

At Addenbrookes Hospital in Cambridge, reviews are currently carried out by a trained review radiographer in week two of treatment. General advice and support is offered, including management of radiation-induced skin reactions. The breast review radiographer also operates as a point of contact for patients encountering problems with skin reactions after completion of treatment. Previously, patient's post-treatment review was clinician-led at 8–12 weeks after completion of radiotherapy. This local change in practice highlighted a gap in service provision for patients suffering from a severe skin reaction during the time between completion of radiotherapy and the start of any formal patient follow-up. This article outlines some of the problems associated with offering radiographer-led early post-treatment review and discusses options for providing a cost-effective skincare management service for patients undergoing breast radiotherapy. It is recognised any further development of this service needs to be evidence-based and therefore future audit is essential.

BACKGROUND

The current radiographer-led review for breast cancer patients was established within the Addenbrookes radiotherapy department in 2005. The practice instigated routine review of patients having adjuvant external beam radiotherapy to the breast by the designated radiographer during week two of the course. Patients are subsequently seen by a clinician towards the end of treatment.

During the radiographer review, on-treatment skincare advice is reiterated and post-radiotherapy skincare advice discussed. When the service was initially set up, patients were advised to phone the breast review radiographer if they encounter any skin problems after completion of treatment. There was no time allocated to manage the calls and consequently the arrangement began to impact on the radiographers scheduled workload. As there was no system in place for patients to return to the department if they require further care, only telephone consultation was possible. The breast review radiographer triaged the telephone consultations and liaised with a clinician where additional advice was needed before contacting the patient again to impart the

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necessary information. Patients were always advised to contact their own general practitioner (GP) to receive the relevant care.

Issues with existing system

Unfortunately this proved to be an unsatisfactory pathway. Several of these patients subsequently contacted the department seeking further advice for post-radiotherapy skin reactions after attending their GP, as they did not feel their skin reactions were being adequately managed. On two occasions the advice that had been given verbally to the patient was either not relayed correctly by the patient to the GP, or the GP/practice nurse gave advice contrary to the departments skincare guidelines in place at the time. On both occasions patients were given 1% hydrocortisone cream for moist desquamation. Steroid creams, though useful for itching, may mask superficial infection so should be used with caution.[9] This presented a dilemma. It was clear that there was a need for advice and support to be given to patients in this situation. The *ad hoc* telephone contact service seemed to be inadequate. It became evident that a suitable and cost-effective pathway needed to be established.

In trying to assess the numbers of patients that would need an additional post-radiotherapy support service, a literature review was conducted. Much of the literature reviewed highlights the lack of consistency in skincare management and a need for standardisation but little to suggest solutions to these issues or the impact on patients.[7,10,11] Research literature supports an approximate incidence of erythematous reactions in 80–90% of patients, and a relatively low incidence of moist desquamation at around 10–15%; however, it is difficult to estimate with any confidence the number of individuals who will experience moist desquamation, as this information is rarely collected systematically.[9] The majority of patients completes treatment and requires no further assistance in the management of skin reactions. The questions needed to be asked as to whether the current practice of telephone review should be continued or be abolished given the potentially low percentage of patients who would benefit or whether other changes to practice would be justified.

Possible service pathways for management of skin reactions

Various solutions were discussed. Options included:

- Continuation of radiographer-led telephone follow-up.
- Introducing radiographer-led follow-up clinics at approximately 1–2 weeks after completion of radiotherapy.
- Improving information provision for GPs, community carers and patients.

All potential solutions had resource and financial implications for the department.

Radiographer-led telephone follow-up

Some of the arguments against telephone follow-up have been described above, demonstrating issues with staff resourcing and cost-effectiveness of such a service as well as problems with ensuring the compliance of side-effect management by community health-care professionals, but there are additional considerations. Telephone follow-ups may appear to be less labour intensive than a face-to-face clinic but could introduce other problems such as the validity of remote side-effect assessment. To assess fully the severity of a skin reaction, it needs to be seen. The patient's description may give a distorted view of what is really going on. A patient's idea of a 'severe skin reaction' may be very different from how a health-care professional would interpret it. This could potentially lead to inappropriate advice being given. There is already a level of subjectivity for health-care professionals interpreting skin reactions without introducing another variable.

Radiographer-led follow-up clinic (patient attendance)

On the surface, radiographer-led follow-up clinics at 1–2 weeks after radiotherapy could appear to be a good option. All patients could be seen, their reactions assessed and the appropriate advice and medication given. There are, however, several drawbacks to the implementation of such practice. It is probable that the majority of patients would return unnecessarily as their symptoms would have either subsided or been adequately controlled. It is difficult to

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estimate the true incidence of skin reactions without systematically recording the occurrence or severity of skin reactions. Perhaps this is an aspect that needs to be recorded to use in assessing future service needs.

Implementation of an additional clinic would inevitably place a strain on often already stretched resources. Support would be needed from other staff groups; clerical staff is needed to schedule appointments and gather notes for the clinic; some degree of medical cover would be essential (unless radiographer prescribing is extended); and many patients would not be able to attend without the provision provided by hospital transport, stretching an already busy service even further. These types of clinics may not prove to be cost-effective as the staff time needed may be high but the number of patients that may benefit could be low. For some patients, possibly the majority, this may be an unnecessary inconvenience. Though it is generally only a one-off appointment for many patients, it could take up a large part of a day. This in turn may impact on their daily routine, for instance work or child care and for many patients it would not be advantageous to attend.

The challenge is to identify those patients that may present with ongoing problems. Introducing any service that tries to predict high-risk patients has draw backs. In many cases it is possible to make an educated guess, based on an understanding of risk factors for radiation skin reactions,[9] but it is not fail safe. This could lead to some patients' reactions being missed.

Information provision for community health-care professionals

It has become increasingly important to ensure communication between sectors and professionals is robust to support patients and processes along the patient's journey. As health care becomes increasingly complicated, co-ordination and communication between all care providers is critical in the delivery of high-quality care.[12] Education is essential to provide appropriate care for patients.

For patients to maintain their confidence in all health-care professionals involved in care of skin reactions, advice must be standardised. The best method for dissemination of standardised guidelines is debateable. It is the responsibility of each individual health-care professional to ensure their own continued professional development but it is equally as important to ensure guidelines are readily available.

Providing GPs and community carers with information through the hospital Website would provide direct and easily accessible advice. This would ensure uniformity of care across the network. Open days held within the radiotherapy department could highlight the issues of skincare, though the success of this form of education relies on attendance. Achieving 100% attendance is unlikely and so gaps in the support services would persist. Dissemination of skincare literature/guidelines via GP mail shot could be an alternative but would incur a cost-and be labour-intensive option.

All methods of education rely on standardisation of guidelines and ensuring that the information is both current and consistent.

OPTION CHOSEN

The pragmatic solution chosen at Addenbrookes was to modify the existing breast skincare information leaflet to include relevant advice for those patients that may encounter further problems after the end of treatment. The original leaflet only outlined basic skincare advice aimed at minimising radiation-induced skin reactions; therefore, the leaflet was modified to incorporate an additional section outlining departmental procedure for treating moist desquamation and advising patients to take the leaflet to the GP/practice nurse for further skin management.

Future audit is essential to evaluate this change in service and the impact on patients and resources and is currently scheduled.

DISCUSSION

Skincare for radiotherapy patients appears to be widely recognised as an important issue, but interestingly much of the available literature

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appears to be inconclusive and often contradictory.[7,9–11] Boot-Vickers recognised that there is a need for skincare management policies to be readily available.[6]. Authors have highlighted that there is little evidence in support of many interventions and products in use in clinical settings and that much of the research available focused on prevention rather than management.[1,4,10] It is important to have strategies in place for prevention and management of skin reactions. Additional research is required to develop supportive care strategies for prevention and management of radiation-induced skin reactions.[10]

Management of skin reactions during and after radiotherapy needs to be consistent, to avoid causing patients confusion and anxiety. NHS Quality Improvement Scotland[13] has, in an effort to address this issue, produced comprehensive radiotherapy skincare guidelines, but it is recognised that future development needs to be evidence-based.[14]

It is important that all health-care professionals who are responsible for providing ongoing skincare, including those in the community setting, have access to current evidenced-based guidelines.[11,15] Breakthrough Breast Cancer has highlighted that patients expect a greater emphasis to be placed on providing more 'patient centred care' so that the whole person is treated not simply the disease.[16] This is only achieved if the system does not fail the patient when the course of radiotherapy treatment is completed.

Within the oncology department at Addenbrookes, it was noted that a small percentage of patients with breast cancer experienced significant skin reactions within the first month after completion of radiotherapy treatment and required additional advice or treatment. Measures have now been put in place to address this issue, modifying patient information to incorporate advice for both patient and community-based health-care providers in the management of more severe acute reactions.

Perhaps it would be of benefit to provide GP practices with a named point of contact within the Radiotherapy department. It would not necessarily need to be a medical doctor. Potentially a breast specialist radiographer could fulfil this role. If a suitable system is put in place it could provide a very useful service. It is widely accepted that a multi-disciplinary approach is key within health care and should cross inter-professional boundaries between hospital and community. If communication pathways were better between the department and the community, it could improve the management of acute skin reactions. It is crucial to have two-way communication pathways in place to deliver the best quality of care for patients who undergo radiotherapy.

NICE recognised the importance of effective communication between professionals, and between primary, secondary and tertiary sectors of care.[17] Currently the link between health-care professionals in the hospital and those in the community are often tenuous. Ultimately improving communication between all health-care professionals involved in the management of skin reactions and development of standardised guidelines is paramount to providing a supportive and effective service for the patients. To fulfil our duty to the patient adequately, it is essential that these issues are addressed.

The steps that have been put in place have gone some way towards providing patients with necessary support. All patients are given the information leaflet and advised to take it along to the GP/practice nurse if they experience problems. At present there is no certainty that the system is working as intended; it is not currently assessed but audit programmes are being created. Anecdotally the number of patients calling the department after completion of treatment has dropped. The hope is that this is due to the modification of the current information and not due to the fact that patients are no longer actively encouraged to phone if they require assistance. Audit and evaluation is essential to establish the full requirements for this service and the impact on patients and resources.

CONCLUSION

The management of radiation-induced skin reactions is both complex and controversial.[18]

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It is vital that standardised radiotherapy skincare advice is available to provide the patients with the best possible care. While undergoing treatment, it is possible to monitor reactions closely and act accordingly. It is more difficult to know what is happening to these patients after completion of treatment.

Modification of existing skincare information within the department has gone some way in addressing this problem. It does, however, rely on the fact that patients retain the information then pass it onto the GP/nurses, who in turn implement the advised care. Involvement and education of community-based health-care professionals is however essential in maintaining consistency of care across the cancer pathway to ensure the patient remains the focus.

It is not enough to assume that this happens. To prove whether the measures put in place are effective, an audit of the process is essential and will be undertaken.

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