

CHALLENGES OF GYNAECOLOGICAL RADIOTHERAPY SKIN REACTIONS

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Grateful thanks to the patient who kindly consented to the images being used for publication and to be used to inform the learning/development of healthcare professionals.

INTRODUCTION

There are various factors which affect severity of radiotherapy skin reactions including area of the body treated, dose of radiotherapy, number of fractions of radiotherapy delivered, concomitant treatment (chemotherapy), age and any co-morbidity the patient has. An intrinsic and challenging part of the nurses’ role in caring for such clients is to reduce further skin damage where possible and encourage successful healing of tissue (NHS QIS, 2010). As the market for wound healing products is constantly evolving, it is challenging to keep abreast of products available and evaluate which are compatible for use in radiotherapy skin reactions. As a nurse, we are bound by the Nursing and Midwifery Council’s Code of Conduct (2008), which states:

“You must deliver care based on the best available evidence or best practice”

It is therefore the duty of all nursing staff to provide the best care possible while constantly striving to improve care.

METHOD

To illustrate the care and management of a particular patients’ radiotherapy skin reaction a case study approach has been used. Physiological parameters which may have affected the manifestation of the radiotherapy skin reaction are referred to and discussed in more detail and the impact of the skin reaction experienced by the patient in relation to her Quality of life (QOL) during the trajectory of the treatment reaction. The aim of the case study is to evaluate the benefits and efficacy of applying PolyMem® when moist desquamation of the skin reaction occurred. The RTOG Skin Assessment Tool is used as the method of grading the skin reaction which is recommended by NHS QIS (2010).

Table 1

RTOG SKIN ASSESSMENT TOOL	
GRADE	DESCRIPTION
RTOG 0	No visible change.
RTOG 1	Faint or dull erythema.
RTOG 2a	Tender or bright erythema with / without dry desquamation.
RTOG 2b	Patchy moist desquamation; moderate oedema.
RTOG 3	Confluent moist desquamation; pitting oedema.

BACKGROUND

PolyMem® is a relatively new dressing to the market. It consists of a hydrophilic pink polyurethane foam sheet bonded to a semi-permeable polyurethane film. The foam contains a non-ionic surfactant which is activated by moisture and claimed to facilitate wound cleansing, a humectant (glycerol) which prevents the dressing drying out and adhering to the wound bed, and a starch copolymer to enhance the fluid handling properties of the foam. It has been evaluated for use in other tumour site specific areas within the cancer centre with favourable results. Consequently, it is now being explored as a potentially useful product for use in patients with Gynaecological Cancer undergoing radiotherapy treatment and who frequently experience radiotherapy reactions at a RTOG 2b and 3 stages. The product characteristics were considered to conform to current recommendation for radiotherapy skin reactions according to NHS QIS (2010) and met with the approval of the Consultant Clinical Oncologist responsible for the care and management of the patient.

The patient selected for the case study had a gynaecological carcinoma and was planned to receive a course of radical radiotherapy. The patient agreed and consented to images being taken by the Medical Photographer to enable the nursing and medical team to have a visual record of the grade and clinical manifestation of the skin reaction experienced at each stage of the reaction; the skin care intervention used and evidence of the effect of the intervention in relation to wound cleansing and healing and pain score experienced.

It has to be acknowledged that the particular patient chosen for the case study had additional intrinsic (patient-related) risk factors which are explained in the ‘Best Practice Statement for ‘Skincare of Patients Receiving Radiotherapy’ (NHS QIS, 2010) which could have influenced the severity of the skin reaction experienced. These are demonstrated in the table below.

Table 2

RISK FACTORS FOR RADIOTHERAPY SKIN REACTIONS IN RELATION TO THE CASE STUDY	
FACTOR	RISK
Middle Aged	Epidermal turnover decreases with age resulting in extended healing times, and ageing results in atrophy of the dermis.
Nutritional status – a healthy diet was not always adhered to.	The intake of adequate nutrients is required for optimum repair of tissue damage.
Mechanical irritants - the patient wore an incontinence pad for 24hrs each day to absorb any leakage.	Friction can increase skin reactions and cause delayed healing.
Smoking – the patient continued to smoke throughout the radiotherapy treatment	Inhaling nicotine through smoking can impair the body’s response to infection and healing. It also limits the oxygen-carrying capacity by replacing oxygen with carbon monoxide.

The patient was prescribed a total radiotherapy dose of 5040 cGy divided into 28 daily fractionated doses of 180 cGy. These were delivered daily Monday to Friday with a break at weekends to allow body cells to regenerate and aid physical convalescence.

The skin reaction and pain score were assessed on average four times a day with dressing changes taking place as required. The patient was asked at each stage to clarify their pain score and give an indication of how comfortable the PolyMem® dressing was.

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RESULTS

Over the treatment period, the skin reaction ranged from RTOG 0 to RTOG 3. The results of the case study are presented below in chronological order of the treatment and reaction trajectory with a visual record of the skin reaction which presented; the grade of the reaction; clinical symptoms experienced by the patient and the intervention used to promote wound healing and comfort.

Week 1

- RTOG 0 to RTOG 1 - dull erythema.
- Aqueous cream was applied to areas of erythema 2 – 4 times / day.



6/28 # of RXT

Week 2

- RTOG 2a - bright erythema.
- Morphine in Intrasisite Gel was applied up to four times daily.
- Pain score 10/10.
- Following review by the Clinical Oncologist morphine in intrasisite gel was discontinued and PolyMem® dressings were commenced.



9/28 # of RXT

Week 3

- RTOG 2b - patchy, moist desquamation with moderate oedema.
- Pain score 10/10.
- P o l y M e m ® commenced.
- Vulval Area was swollen and the patient had difficulty with mobility.



13/28 # of RXT

24 hours post application of PolyMem® it was noted that the swelling had reduced, mobility was improved and patient stated she felt more comfortable.



14/28 # of RXT

Week 4

- RTOG 2b - patchy, moist desquamation with moderate oedema.
- Pain score 4/10.
- Less swollen and erythema was observed.
- Mobility further improved.



16/28 # of RXT

Weeks 5 & 6

- RTOG 3 - confluent, moist desquamation.
- Pain score ranging from 3/10 to 8/10.
- Requiring Oramorph 20mg prior to dressing change.
- Blisters to groin area & buttocks.



22/28 # of RXT



28/28 # of RXT

A review by the Tissue Viability Nurse Specialist concurred that PolyMem® was the appropriate dressing choice for the stage of skin reaction. Patient stated she still found PolyMem® comfortable to wear and wished to continue with this she declined a urinary catheter and was managing to pass urine with ease and was fully ambulant.

POST-TREATMENT

Following completion of radiotherapy treatment, assessment of the skin reaction and application of PolyMem® continued. The patient remained as an in-patient for approximately 5 days post treatment. Thereafter, the patient was able to be discharged to the Community District Nursing Services and attended the ward twice weekly before reducing to weekly reviews of the skin reaction. The Consultant Clinical Oncologist in charge of the patient reviewed her in the first week post treatment and was both pleased and surprised at rate of wound healing achieved.



5 Days post-treatment



11 Days post-treatment



13 Days post-treatment



17 Days post-treatment



24 Days post-treatment

DISCUSSION

Many studies and much literature are written on QOL issues in relation to Gynaecological Malignancies (King & Hinds, 2003). Aside from the actual disease itself, the treatment of radiotherapy often carries significant risk factors which can impact upon QOL. These include pain/discomfort; delayed wound healing; scarring; immobility; fatigue; incontinence/difficulty with micturition; vaginal wall atrophy; altered bowel habit; decreased sexual appetite and psychological issues (Faithfull & Wells, 2004). It is impossible to predict whether patients will develop all or some of these side effects therefore nursing staff has a professional responsibility to be aware of all possible side effects and deal with them accordingly. Not only does this provide great comfort to the patient but it can also be comforting to the nurse thus inevitably aiding the nurse/patient relationship.

In this case study, there were intrinsic risk factors such as age and exposure to mechanical irritants which required to be taken cognisance of. The patient had to wear incontinence pads due to frequent leakage of discharge and the friction of this although detrimental to wound healing was simply unavoidable. As treatment progressed there was a greater need for the use of incontinence pads due to the development of urinary incontinence and as clarified above, the patient did not wish insertion of a urinary catheter. The patient was also a smoker but had no desire to stop smoking and no desire to change her eating habits either. She preferred to continue with a high fat, low nutrition diet.

This case study has been helpful to demonstrate to nursing staff their responsibility to identify and address intrinsic risk factors which can be reduced and / or eradicated prior to treatment commencing. It also demonstrates the necessity of nursing staff to identify patients who are potentially more susceptible to severe reactions and who will require more frequent skin assessment and intervention. It is perhaps also a lesson for nursing staff that patients such as in this case study need assessed much earlier in the radiotherapy treatment phase than patients with less or no risk factors. There is also an important opportunity for staff to instigate at an early stage, counseling and education that patients may need regarding risk factors as many patients may not be aware of how these can impact upon their skin reactions.

It is not unusual for patients to need a urinary catheter as they experience difficulty voiding urine, secondary to pain or urinary retention as a consequence of the skin reaction. In addition to this, difficulty mobilising is often a significant issue. The patient in this case study seemed to be exempt from both these issues and was able to void urine comfortably, with some dribbling incontinence and she was fully ambulant throughout treatment.

What is interesting to note is the degree of pain experienced and the pain score which the patient gave? The highest pain score did not necessarily correlate with the severity of the skin reaction. While this has been noted – further experience with future case studies will be required to evaluate if PolyMem® has a direct impact on the degree of pain experienced.

CONCLUSION

In conclusion the results of this case study demonstrate the benefits, efficacy and tolerance of the product used and the level of comfort achieved when PolyMem® was introduced as the wound care intervention both from a wound care perspective of wound healing achieved and the benefits of comfort to the patient. It appears that the use of Morphine in Intrasisite Gel in this case may not have been of benefit at the skin reaction stage it was used, either for pain relief or the promotion of comfort. It is therefore recommended that further case studies pursue the use of PolyMem® for the treatment of radiotherapy skin reactions in gynaecological cancers when the skin reaction reaches the RTOG 2b – 3 stages. It is hypothesized that the skin reaction experienced by the patient in this case study would have reached RTOG 3 at a much earlier stage had PolyMem® not been used. However, more research and evaluation is required with this product to build an evidence base of the benefits to be achieved when used for radiotherapy skin reactions.

REFERENCES

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