RADIATION THERAPY: A BREAST CANCER CASE STUDY

Lorraine Drapek DNP FNP-BC AOCNP
Boston Oncology Nursing Society
Ldrapek@mgh.Harvard.edu

RADIATION THERAPY

- Has been in use since late 19th century
- Used widely for a variety of tumor types
- Used in all oncology settings
  - Curative
  - Adjuvant & Neoadjuvant
  - Palliative
- Radiation treatment related effects are site specific except for Fatigue

TYPES OF RADIATION THERAPY

External Beam

- Variety of delivery methods:
  - IMRT, VMAT, SBRT
- Broad- use across disease types
- Affects normal tissue (passes through to reach target)

Brachytherapy

- Also called “local” or “internal”
- Radioactive devices are delivered or implanted directly to tumor site or tumor bed.
- Allows for treatment with higher doses with less effect to nearby tissue.

CASE STUDY :RADIATION DERMATITIS AND FATIGUE

- Incidence of radiation dermatitis is 90 to 95% of patients receiving radiation.
- Incidence of fatigue is 80 to 100%

CASE STUDY

- Mrs. S is a 50 year old patient who is receiving radiation for an early stage breast cancer to her right breast. She is premenopausal and will start Tamoxifen post radiation.
- She is at week five of a total of six weeks of radiation.
- She asks to be seen one morning because the skin under her right breast is “stinging” and she is unable to wear her bra.
- Mrs. S has a BMI of 30 and a history of Type II Diabetes. She also has a history of smoking cigarettes.

CASE STUDY – ASSESSMENT AND EVALUATION

- Upon assessment you note her right breast is erythematous below the nipple and there is an open area in the right inframammary fold that appears moist.
- It is very tender to touch and is in a area of friction, where a bra may be rubbing against it.

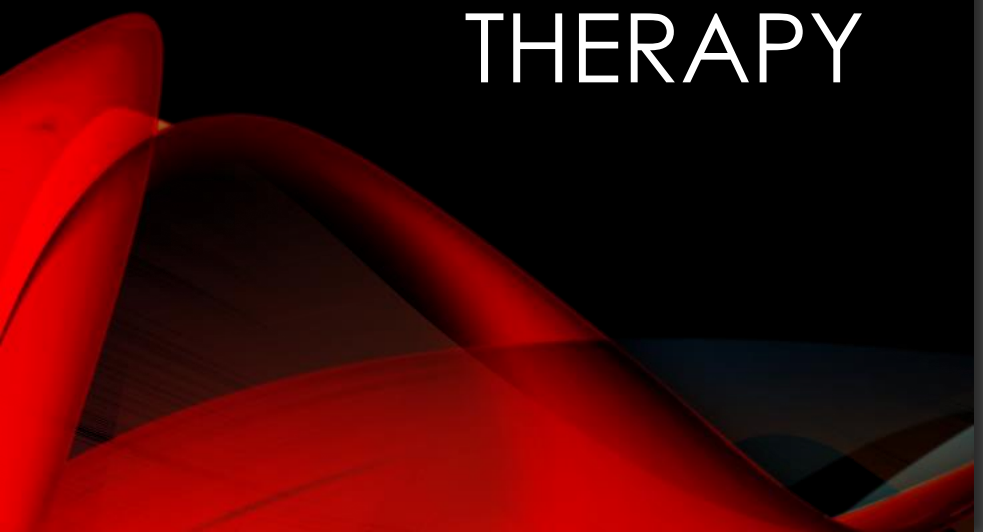
RADIATION TOXICITY

1. Side effects related to the specific area being treated

2. Acute effects: occur during or immediately following a course of radiation therapy.

3. Late effects: occur from 2 months to years following completion of treatment and are usually the result of damage to the microcirculation.

RADIATION DERMATITIS: SKIN REACTION FROM RADIATION THERAPY



- 1. Faint Erythema/dry desquamation
- 2. Moderate or brisk erythema/patchy moist desquamation confined to the skin folds and creases. Moderate edema
- 3. Moist desquamation other than skin folds or creases. Bleeding with minor trauma
- 4. Skin necrosis or ulceration of full thickness dermis, spontaneous bleeding from the affected site, skin graft indicated, life threatening consequences.
- 5. Death

- CTCAE 5.0

GRADE 1 RADIATION DERMATITIS

GRADE 2 RADIATION DERMATITIS

GRADE 3 RADIATION DERMATITIS

RISK FACTORS FOR RADIATION DERMATITIS

- Older age
- Malnutrition
- Chronic sun exposure
- Breast Size
- Smoking history
- Comorbidities
  - Diabetes
  - Metabolic Syndrome

RADIAION DERMATITIS TREATMENT RELATED FACTORS

- Cumulative dose
- Location of treatment field
- Fraction size and schedule
- Larger treatment field
- Duration of treatment
- Techniques employed
- Use of bolus material

PRACTICE QUESTION

Upon assessment you note her right breast is erythematous below the nipple and there is an open area in the right inframammary fold that appears moist.

What Grade Radiation Dermatitis does Mrs. S. have?

Grade 2

PRACTICE QUESTION

What are comorbidities that may contribute to the risk and severity of Mrs. S's radiation dermatitis:

Diabetes

Smoking

High BMI

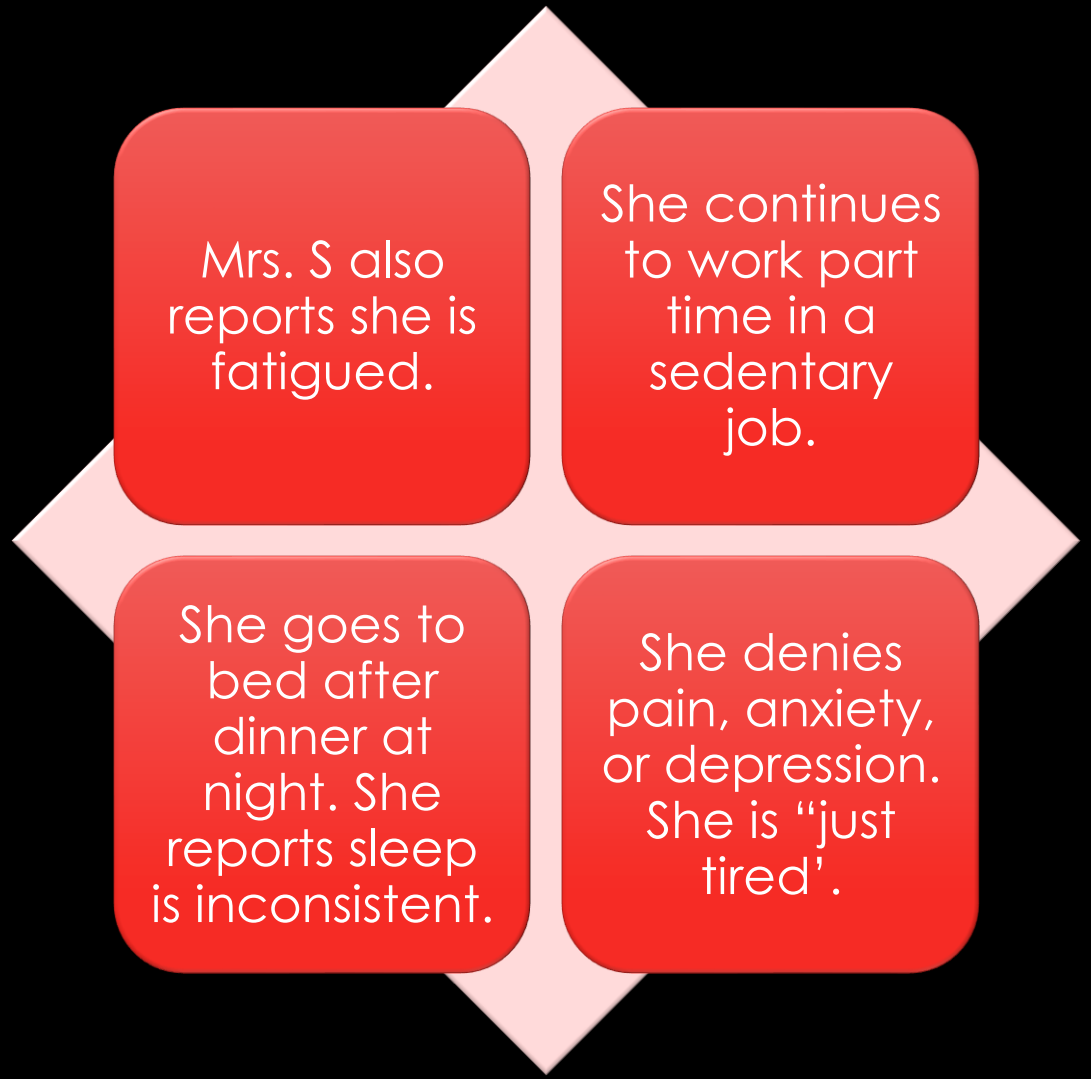
SKIN CARE DURING RADIATION THERAPY

- Wash with a mild moisturizing soap
- Loose comfortable clothing
- Wearing antiperspirant is okay
- Intensity modulated radiation therapy
  - Wong (2013), ONS PEP

SKIN CARE DURING RADIATION THERAPY

- Likely to be effective (ONS PEP)
  - Topical steroids
  - Calendula
  - Silver sulfadiazine

CASE STUDY


Mrs. S also reports she is fatigued.
She continues to work part time in a sedentary job.
She goes to bed after dinner at night. She reports sleep is inconsistent.
She denies pain, anxiety, or depression. She is "just tired'.

FATIGUE

- Cancer related fatigue : distressing, persistent, and subjective sense of tiredness, or exhaustion, that is not proportional to activity and interferes with usual function.

- 80% to 100% of patients with cancer experience fatigue.
    - ONS PEP

FATIGUE – GRADING

Fatigue	Grade 1: fatigue relieved by rest
Fatigue	Grade 2: fatigue not relieved by rest, limiting instrumental ADL
Fatigue	Grade 3: fatigue not relieved by rest, limiting self care ADL

PRACTICE QUESTION

What Grade is Mrs. S's fatigue??

Grade 2

FATIGUE MANAGEMENT

- ONS PEP
  - Recommended for practice: exercise
  - Likely to be effective:
    - Cognitive behavioral interventions/approach for sleep
    - Energy conservation/activity management
    - Ginseng
    - Management of concurrent symptoms

FATIGUE MANAGEMENT

- ONS PEP - Likely to be effective
  - Massage/aromatherapy massage
  - Mindfulness based stress reduction
  - Multicomponent rehabilitative intervention
  - Psychoeducation/psychoeducational interventions
  - Yoga

FATIGUE MANAGEMENT

- ONS PEP - Benefits balance with harm
  - Systemic corticosteroids
  - Erythropoiesis Stimulating Factors
- Effectiveness unlikely
  - Modafinil

QUESTION & ANSWER

- 1. You can type your questions into the Chat.

- 2. You can raise your hand.