The Red Breast

Beth McLellan, M.D.
Assistant Professor
Division of Dermatology
Albert Einstein College of Medicine
Montefiore Medical Center
Jacobi Medical Center
Case 1

• 48 year old radiation oncologist
• History of Hodgkin lymphoma at age 20 treated with radiation
• Lymphoma recurrence at age 38 treated with chemotherapy
• Invasive ductal carcinoma ER+, PR/Her2- breast and lymph nodes
Case 1

- Bilateral mastectomy
- Immediate reconstruction with right TRAM and left DIEP flap
- POD8 plastic surgeon notes “epidermolysis” and purulent discharge
  - Debridement
  - Cultures
  - Keflex
  - Silvadene
Case 1

• POD11 prescribed Medrol dose pack
• POD14
  – Sharp debridement
  – 0.75mg/kg/day prednisone
  – Wet to dry dressings
  – Referred to dermatology
Case 1

• POD14 – Derm visit
  – Punch biopsies for H & E and tissue cultures
    • Neutrophil-rich dermatitis
    • Cultures negative
  – Change dressings to Xeroform and petrolatum
  – Continue prednisone 50mg daily
Post-Operative Pyoderma Gangrenosum

Pyoderma Gangrenosum

- Most common in women 20-50
- 50% with underlying systemic disease (IBD, arthritis, IgA monoclonal gammopathy, AML)
- Pathergy is seen in 20-30% of patients
- Often presents with small pustule that rapidly enlarges
- Look for violaceous, undermined border
- Rule out infection
Postoperative Pyoderma Gangrenosum

- Presents with wound breakdown within 21 days post-operatively
- 47% involve chest wall

• Usually bilateral and involving abdominal wounds if present
• Nipples usually spared
• Fever present in 55%
• Elevated WBC in 48%
• Debridement in 67%
• Successful treatment with steroids and cyclosporine
Postoperative Pyoderma Gangrenosum

Bologna
Postoperative Pyoderma Gangrenosum Treatment

- Topical, intralesional, and systemic corticosteroids
- Topical calcineurin inhibitors
- Antibiotics
- Good wound care
- Do not debride!
- Colchicine, dapsone, thalidomide, mycophenolate mofetil anti-TNF agents, cyclosporine, IVIG, cyclophosphamide...
Postoperative Pyoderma Gangrenosum

Table I.
Summary of patients with postoperative pyoderma gangrenosum

<table>
<thead>
<tr>
<th>Variable</th>
<th>No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total patients</td>
<td>87</td>
</tr>
<tr>
<td>Prior pyoderma gangrenosum (PG)</td>
<td>19 (21)</td>
</tr>
<tr>
<td>Postoperative</td>
<td>12</td>
</tr>
<tr>
<td>Spontaneous</td>
<td>5</td>
</tr>
<tr>
<td>Traumatic</td>
<td>2</td>
</tr>
<tr>
<td>Prior surgeries without PG</td>
<td>14 (16)</td>
</tr>
<tr>
<td>Days to onset after surgery</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>7</td>
</tr>
<tr>
<td>Range</td>
<td>1-21</td>
</tr>
<tr>
<td>Procedures after postoperative PG</td>
<td>19 (21)</td>
</tr>
<tr>
<td>Skin grafts</td>
<td>14</td>
</tr>
<tr>
<td>Recurrence of PG</td>
<td>0</td>
</tr>
<tr>
<td>Other*</td>
<td>5</td>
</tr>
<tr>
<td>Recurrence of PG</td>
<td>4</td>
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</tbody>
</table>

Post-Operative Pyoderma Gangrenosum

Pearls

• Have a high suspicion and educate your surgery and oncology colleagues
• Treat aggressively to prevent delays in cancer care
• Patients typically do well with prednisone and wound care
Case 2

- A 62-year-old woman with stage IIA, lymph node negative infiltrating ductal carcinoma
- She was treated with a left breast partial mastectomy, RT, chemotherapy (AC-T)
- 3 weeks after radiation - redness and swelling of the left breast
- 3 courses of Keflex without improvement
Case 2

- Multiple skin biopsies showing radiation changes and fibrosis
- Diagnosis: post-irradiation morphea
- Improved with pentoxyfylline and vitamin E
Post-Irradiation Morphea

- Variable onset – weeks to years
- Often mistaken for mastitis
- 20-30% spread beyond radiation field
Morphea - Treatment

• Topical and intralesional corticosteroids
• Methotrexate
• Pentoxyfylline + Vitamin E
• Phototherapy – UVA1 or narrowband UVB
• Surgical excision
• Physical therapy
Post-Irradiation Morphea Pearls

• Consider in patients with “mastitis” not responding to antibiotics
• May need several biopsies
• Always rule out metastases
• Consider phototherapy, pentoxifylline + vitamin E, intralesional kenalog
Case 3

- 61 year old woman with history of invasive ductal carcinoma and psoriasis
- s/p R mastectomy with implant reconstruction and axillary dissection
- Chemotherapy, radiation therapy, anastrozole
- 7 day history of itchy rash in radiation field and extending to neck
Eosinophilic Polymorphic and Pruritic Eruption of Radiotherapy

- Most common after cervical and breast cancer
- Can mimic bullous pemphigoid and dermatitis herpetiformis
- Often present outside of radiated areas
- Risk appears dose dependent (mean 30Gy)
Eosinophilic Polymorphic and Pruritic Eruption of Radiotherapy

Pearls

• Consider this diagnosis in a patient with a widespread eruption and a history of radiation therapy

• Consider treating with phototherapy, topical steroids, systemic steroids
Case 4

- 45 year old woman with a history of left breast cancer
- Neoadjuvant chemotherapy
- S/P bilateral mastectomy with tissue expander placement, adjuvant radiation, tamoxifen
- 6 months after surgery referred for an asymptomatic rash on the right lateral breast
- Previously no responsive to emollients or trimethoprim-sulfamethoxazole
Nummular Dermatitis of the Reconstructed Breast

- 48/1662 (2.89%) patients developed
- Variable timing
- Periwound – 41.7%, nonperiwound – 66.7%
- Only reviewed cases with breast implantation

Iwahira Y et al. Plast Surg Int 2015; Published online 2015 August 24.
Nummular Dermatitis of the Reconstructed Breast

Pearls

- Not always itchy
- Not always after reconstruction
- Biopsy to rule out cutaneous metastases
- Scrape to rule out fungus
- Usually respond to topical steroids
Case 5

- 50-year-old female patient with multicentric stage III ductal and lobular left breast cancer treated with chemotherapy, bilateral simple mastectomies, tissue expander reconstruction with human acellular dermal matrix, and postop radiation of the left breast.

- 9 months post-op developed painful erythema of right breast.

- Developed fevers, night sweats, pruritus, and erythema with no response to multiple antibiotics.
Case 5

Ganske I. Ann Plast Surg 2014; 73; S139-43.
Case 5

• Skin biopsy showed delayed hypersensitivity reaction
• Patient elected for bilateral removal of the tissue expanders, capsules, and ADM
• Resolution of erythema and other symptoms
Red Breast Syndrome

• Incidence is unknown (as high as 7.6% with AlloDerm)

• Theories for pathogenesis:
  – Foreign body reaction
  – Dependent erythema
  – Hyperemia secondary to neovascularization and graft incorporation
  – Lymphatic obstruction
  – Delayed type hypersensitivity reaction
Red Breast Syndrome – Contact Hypersensitivity?

• Similar to contact dermatitis described from orthopedic surgery?

...Or Reticular Telangiectatic Erythema?

- Patch testing negative
- Reported after implantable cardiac devices with electronic components, articular prosthesis, and sternal wires
- Due to foreign body?

Thank you!

E-mail: bethnmclellan@gmail.com
Cell: (248) 921-7504

Dermatopathologists:
Bijal Amin, MD
Bonnie Lee, MD
Mark Jacobson, MD