



Breast Complications

Infections, Edema and Flap Necrosis



Seroma

Reported incidence varies - up to 35%

- 20-25% after MRM
- 10% after WLE
- If severe may result in skin flap necrosis, infection, lymphedema, wound dehiscence



Seroma Formation

- Woodworth et al, *Am Surg* May2000, Vol66,pp.444-51
- Retrospective review 252 pts
- Incidence - overall 39/252 (15.5%)
- MRM 29/148 (19.6%)
- WLE 9/64 (14.1%)
- MRM+IR 1/40 (2.5%)
- Not related to age, wt, BMI, specimen size, tumor size, # LN, # pos LN



Techniques to Minimize Seroma Formation

- External compression
- Arm immobilization
- Flap tacking sutures
- Avoidance electrocautery
- Fibrin sealants
- Drains

Use of Drains and Fibrin Sealants

Jain et al Brit J Surg 2004; 91: 54-60

| | Drain | No Drain | |
|------------|------------|-----------|-----------|
| | | Fibrin | No Fibrin |
| All Pts | 58 | 29 | 29 |
| Seroma | 15 (25.9%) | 10 (34.5) | 12 (41.4) |
| Volume(ml) | 140 | 165 | 300 |
| Mastectomy | 36 | 19 | 12 |
| Seroma | 9 (25%) | 8 (42.1) | 10 (83.3) |
| Volume(ml) | 150 | 190 | 395 |
| WLE&Ax | 22 | 10 | 17 |
| Seroma | 6 (27.3%) | 2 (20) | 2 (11.7) |
| Volume(ml) | 140 | 115 | 160 |

Breast Edema

- Mimics cellulitis but no fever, normal WBC and doesn't respond to antibiotics
- May present before radiation
- Treatment - MLD -good result - post massage binding unnecessary

Breast Edema

- Pezner et al.* 15% - Cup A or B
- 48% - Cup C, D, DD
- Axillary dissection
- Goffman et al** - 9.8% risk overall
- UOQ lesion -16%
- Increased BMI

- *Int.J.Radiat Oncol Biol Phys, 1985 Oct: Vol 11(10), pp.1765-8
- **Breast J, 2004 Sep-Oct; Vol 10 (5),pp.405-11

Wound Infection

- Incidence 8 - 10%
- Cellulitis or tissue suppuration
- Presents 5 -12 days post-op
- Most common organism - Staph aureus

Likely Factors Associated with Increased Risk of Wound Infection

- Prior open biopsy
- Pre-op radiation
- Reconstructive surgery
- Obesity
- Compromised lymphatic drainage
 - -thin skin flaps
 - -axillary dissection

Possible Factors Associated with Increased Risk of Wound Infection

- FNA or Core Needle biopsy
- Radiologically or image guided biopsy
- Prolonged wound drainage

Antibiotic Prophylaxis

- **Tran et al** *Am Surg*, 2003 Oct; Vol.69 (10), pp.852-6
- Retrospective review 320 pts
- Overall incidence wound infection 6.1%
- Initial procedure 1.6%
- Subsequent procedure 9.4%
- Subsequent procedure if initial proc involved LN 22%
- Prophylactic antibiotics reduced wound inf in reop setting

Antibiotic Prophylaxis

- **Gupta et al**, *Eur J Surg Oncol*, 2000 Jun; Vol.26 (4) pp.363-6
- Prospective, randomized, observer blind, placebo controlled study
- 334 pts; single dose antibiotic prophylaxis
- MRM and WLE +/- Ax Clearance
- No difference WI 17.4% with prophylaxis
- 18.8% without

Breast Abscess

- Incidence 6%
- Unique to WLE & RT
- Occurs median 5 mo. (range 1.5 - 8 mo)
- Sonographic findings: interstitial fluid
- hypoechoic wall
- ?Axillary clearance predisposing factor

Breast Abscess

- Keiden et al, *Am Surg*, 1990 Jul; Vol.56 (7), pp.440-4
- 112 Pts with WLE+Rad
- 7 (6%) developed abscess
- 6/7 grew Staph
- 3 no obvious predisposing conditions; 1 skin necrosis, 2 repeated seroma aspirations, 1 prev bx site infection
- Factors not assoc.-prophylactic antibiotics, post-op chemo, primary vs reexcision

Flap Necrosis

- Most perilous complication
- Incidence - 10 - 30%
- some degree of visible necrosis - 20%
- full thickness - 8 %
- Prevention - gentle handling
- -atraumatic retraction
- -flap thickness
- -careful use of cautery
- -keep flaps moist

Skin Sparing Mastectomy

- Local recurrence not compromised - 3-4%
- Native skin flap necrosis 10%
- Reduces surgery on opposite breast

SSM –Associated with Reconstruction

- Hultman et al, *Ann Plast Surg*, 2003 Mar; Vol. 50 (3)
- Flap complications 24%
- Predisposing factors – prev irradiation
 - -diabetes
 - -elevated BMI
- Factors not assoc with flap necrosis – age, smoking, previous breast cancer, type of reconstruction

Conclusions

- WLE +AxDissect – drains do not prevent seroma
- May be a role for fibrin sealants to reduce seroma formation in MRM
- Breast Edema- Pts at risk; UOQ lesion, Increased BMI/large breast, (role of Axillary dissection)
- Prophylactic Antibiotics- consider in; previous wound infection, previous radiation, reconstructive surgery, reop when previous procedure involved LN, ? Obesity
- SSM-results excellent without increased morbidity