Sensitivity analysis, restricting definition of occult invasive carcinoma is identified, it is recommended that the patient undergo sentinel lymph node (SLN) surgery to adequately stage the disease.

There are two distinct approaches adopted by surgeons regarding SLN surgery in patients undergoing PM:
- Routine SLN
- No SLN

In routine SLN, the majority of patients are unnecessarily subjected to the morbidity of SLN surgery.

If no SLN surgery is performed and final pathology shows invasive cancer, patients are usually recommended to return to the operating room for a second procedure for axillary staging of their malignancy.

May subject patients to ALND rather than SLN surgery due to recent mastectomy.

At our institution, we perform routine intraoperative pathological analysis of all breast specimens to guide the surgical decision regarding resection of SLNs.

We sought to evaluate our experience in using intraoperative pathological analysis on all patients undergoing PM to help further characterize its role in directing SLN surgery in PM.

Methods

After IRB approval, we identified all women ≥ 18 years of age who underwent PM for breast cancer risk reduction at our institution from 1/1/2008 – 7/1/2016 from an institutional prospectively maintained breast surgery database.

In our high volume tertiary academic medical center clinical practice, most patients undergoing PM have preoperative radiocolloid injection in the PM side.

Patients with a history of cancer on the prophylactic side were excluded.

Each breast was counted as one case.

We evaluated the frequency of SLN resection and rate of occult breast cancer (DCIS or invasive disease) identified in the PM specimens.

Tumor size seen on intraoperative pathology was compared to those identified only on final pathology using an unequal variance t-test.

In the remaining 8 cases, cancer was identified intraoperatively but SLN was not resected.

We used the following definitions:
- Over-treatment - SLN surgery in patients without cancer
- Under-treatment - no SLN surgery in patients with cancer
- Appropriate treatment - no SLN surgery in patients without cancer or SLN surgery in patients with cancer

We identified 2,390 patients who underwent 1,900 PMs:
- BPMs: 1,410 (74.2%)
- CPMs: 490 (25.8%)

Overall, SLN surgery guided by intraoperative pathology resulted in:
- Appropriate treatment of 1,778 (94.1%) cases:
  - BPMs: 1,319 (93.5%) cases:
  - CPMs: 459 (92.9%) cases:
- Over-treatment of 99 (5.2%) cases:
  - BPMs: 79 (4.5%) cases:
  - CPMs: 20 (4.1%) cases:
- Under-treatment of 14 (0.7%) cases:
  - BPMs: 12 (0.8%) cases:
  - CPMs: 2 (0.4%) cases:

Intraoperative pathology to direct SLN surgery in patients undergoing prophylactic mastectomy allowed the vast majority of patients to have appropriate SLN staging in one operation.

This approach minimizes over-treatment from routine SLN at time of PM and minimizes under-treatment by performing SLN in PM for cases where malignancy is identified.

References


Conclusions

In the 32 cases with occult invasive disease found in the PM, invasive disease found on intraoperative pathology (n=25) was larger at 6.4mm (range 1.5mm - 8mm) than that seen only on final pathology (n=7) 3.8mm (range 1.0mm - 13mm), p<0.05.

Oncologic Results

Cancer was identified in 58 (3.0%) cases:
- 32 invasive disease and 26 DCIS

Concurrent SLN surgery was performed in 44 of these cases (75.9%)
- Directed by intraoperative pathology in 43 (cancer found in 39 and atypia in 4)
- In one case intraoperative pathology did not identify cancer; however a SLN was resected from the axillary tail of the breast.

Four (9.1%) patients had a positive SLN and 2 of these proceeded to a completion axillary dissection (ALND) performed at the same operation.

In 6 cases, intraoperative pathology did not identify either cancer or atypia and malignancy was found on final pathology.
- Invasive disease in 3 and DCIS in 3

In the remaining 8 cases, cancer was identified intraoperatively but SLN was not resected.
- 4 did not have preop radiocolloid injection, 1 declined SLN prep, 3 reason unknown

Sensitivity analysis, restricting definition of cancer to invasive disease patients only, showed similar results with appropriate treatment rates of 1,775/1,900 (93.4%), over-treatment in 118/1,900 (6.2%) and under-treatment in 7/1,900 (0.4%)