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BACKGROUND

- Fear of subsequent breast procedures impacts patient decision-making when considering breast-conserving surgery (BCS) versus mastectomy for treatment of breast cancer
- The incidence and outcomes of breast biopsy during surveillance following BCS for breast cancer are not well-characterized

OBJECTIVES

1. To identify frequency and predictors of breast biopsy during surveillance of early-breast cancer patients treated with BCS
2. To determine the benign-to-malignant biopsy ratio and rates of subsequent breast surgery in this population

METHODS

- We used a population-based prospective surgical database to identify 2,065 patients treated with BCS for screen-detected invasive breast cancer or DCIS in Alberta, Canada from 2010-2014
- Post-treatment breast biopsy and subsequent breast surgery were abstracted from physician claims data and medical chart review
- Multivariable (MV) analysis excluding those with missing adjuvant data was performed to identify factors associated with breast biopsy

RESULTS

Patient characteristics (Table 1)

- Median age was 62 years and median follow-up was 4.0 years; most had DCIS (n=426, 21%) or stage I disease (n=1,385, 67%)
- Adjuvant therapy data was available for 1,855 (90%) patients; 1,686 (91%) completed whole breast irradiation (WBI); 993 (48.1%) received endocrine therapy and 316 (17%) chemotherapy

RESULTS

Rates of breast biopsy (Figure 1)

- 304 (14.7%) patients had core biopsy and 16 (0.8%) patients had excisional biopsy

- The benign-to-malignant ratio was 3.3 to 1

Factors associated with breast biopsy

- Young age, longer follow-up and positive margin status were associated with breast biopsy (all p<0.05), with a trend seen for driving time ≥3h to cancer center (p=0.09)
- Institution initially demonstrated a significant association, but this effect was lost when those with no breast imaging tests during surveillance were excluded
- Charlson Comorbidity Index, stage, grade, and receptor status of index cancer, use of adjuvant WBI, endocrine therapy and chemotherapy had no effect (all p>0.05)

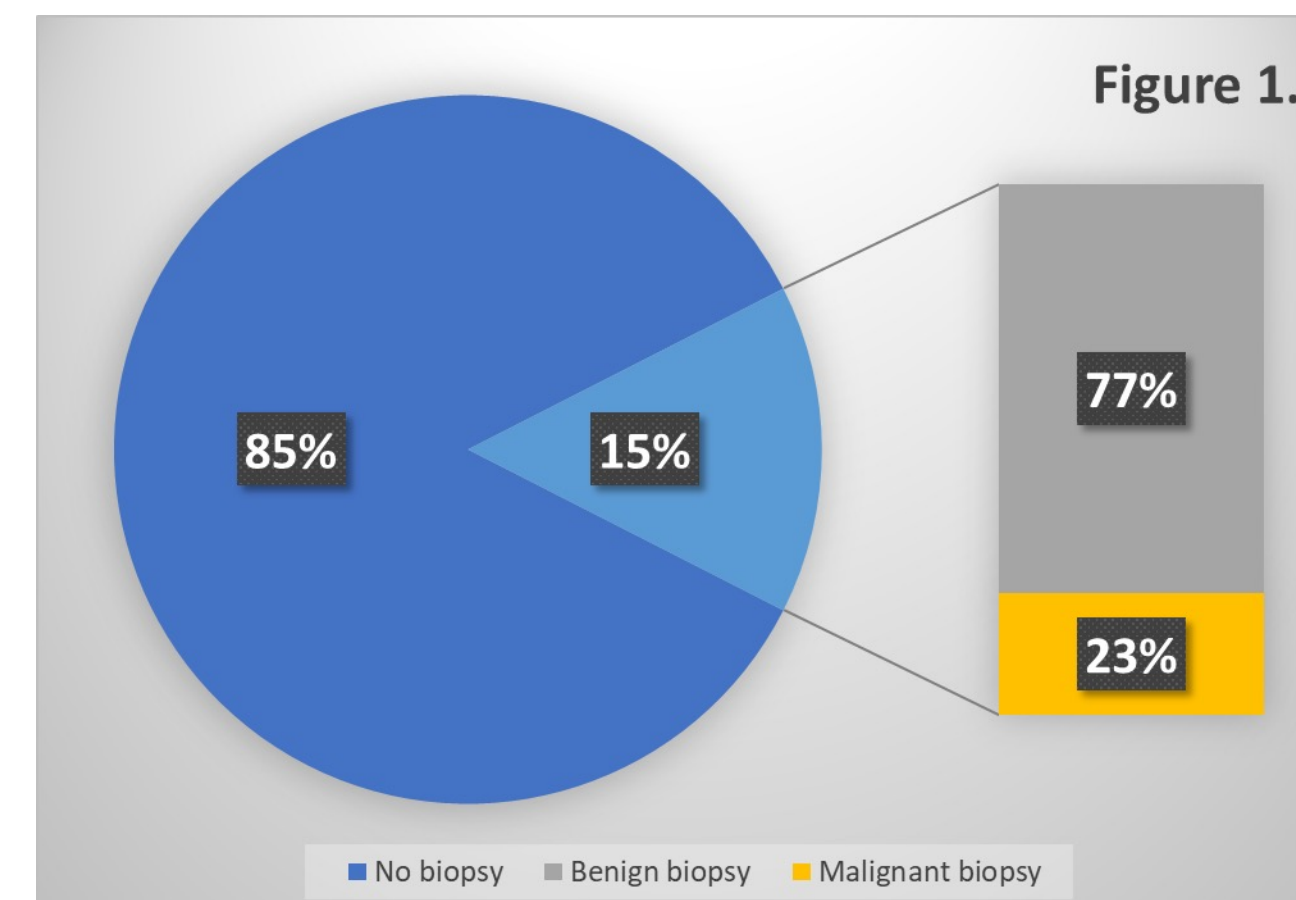


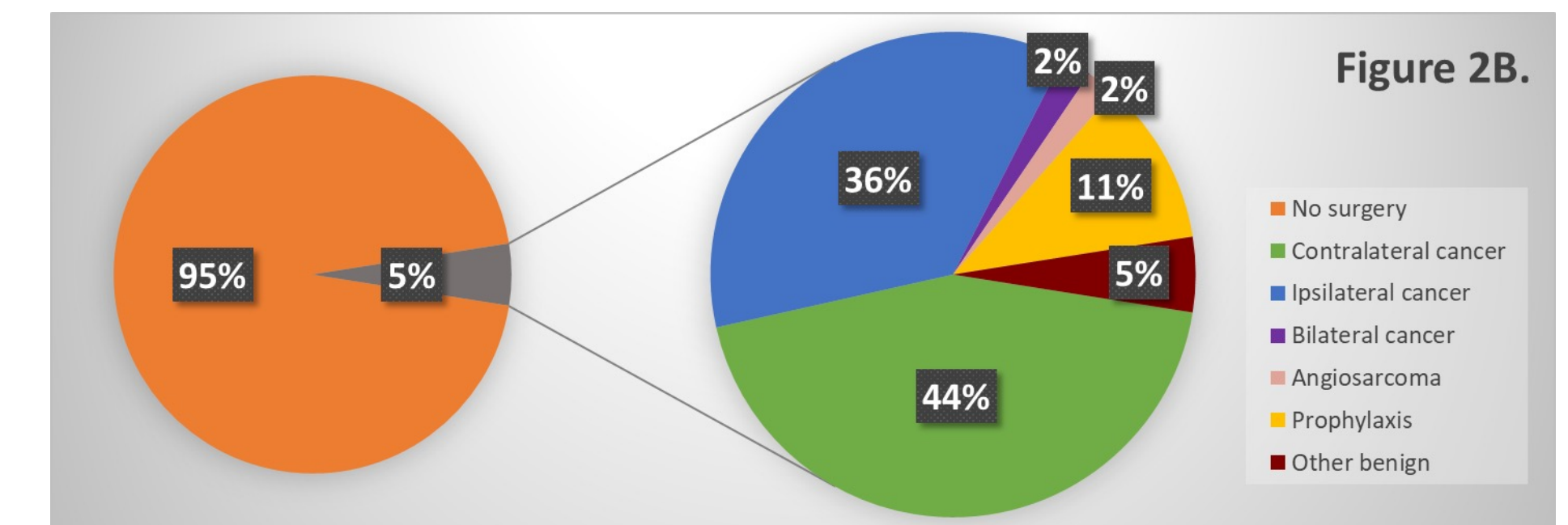
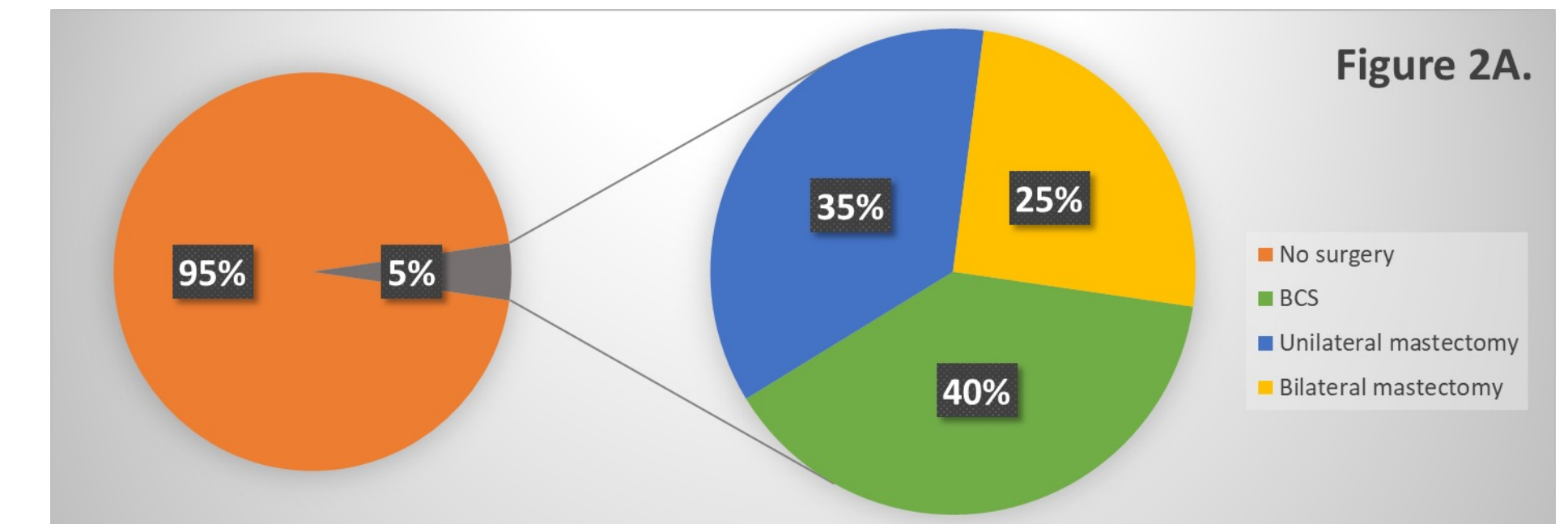
Table 1. Baseline characteristics of 2,065 patients treated with BCS for early-breast cancer

Age (yrs, median)	62 [35-93]
Follow-up (yrs, median)	4.0 [0.25-7.6]
Stage	
0 (DCIS)	426 (20.6%)
I	1,385 (67.1%)
II/III	254 (12.3%)
Grade	
Low/intermediate	1,463 (70.1%)
High	555 (26.9%)
Estrogen receptor	
Positive	1,724 (83.5%)
Negative	132 (6.4%)
Unknown	209 (10.1%)
HER2 receptor	
Positive	118 (5.7%)
Negative	1,334 (64.6%)
Unknown	613 (29.7%)
Final margin status	
Positive	238 (11.5%)
Negative	1,827 (88.5%)
Adjuvant therapy	
WBI	1,686 (81.6%)
Endocrine	993 (48.1%)
Chemotherapy	316 (15.3%)
Unknown	210 (10.2%)
Institution type	
Academic	7,765 (85.5%)
Community	300 (14.5%)
Any breast imaging during surveillance	
Yes	1,918 (92.9%)
No	147 (7.1%)

Rates of subsequent breast surgery (Figure 2A-2B)

- Additional surgery was performed in 95 (4.6%) patients
- A malignancy was the indication for surgery in 80 (3.9%) patients

RESULTS



CONCLUSIONS

- In a modern, population-based cohort of women treated with BCS for early breast cancers, breast biopsy was performed in 15% after a median 4.0 years of surveillance
- The observed benign-to-malignant biopsy ratio was 3.3 to 1, and less than 5% of patients required subsequent breast surgery, demonstrating the excellent long-term outcomes achieved with BCS
- While breast biopsy is anxiety-provoking, patients can be reassured that only a minority will require this, with most yielding benign results
- Further study is needed investigating the impact of differing surveillance regimens, as well as the possible effect of regional variation in the use of surveillance imaging and geographic access to cancer control services within the province