Impact of age extension to include 47–49 year old women on the workload of the surgical department of a single Breast Cancer Screening Unit – The first non-randomized experience in UK

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ABSTRACT

Introduction: The aim of this study was to assess the impact on the surgical unit of the first year (prevalence screening) of non-randomized invitations to 47–49 year old women for breast screening, from a single breast screening unit.

Methods: All women undergoing surgery in the age group 47–49 years, referred via screening were identified and the increased workload analysed.

Results: 4250 (76%) women were screened of the 5624 invited. 396 women were recalled, of whom 88 (22%) underwent a core biopsy. 32 patients required surgical intervention. 20 patients (62.5%) were confirmed to have either DCIS (6 patients) or invasive malignancy (14 patients). They required 37 theatres attendances requiring 42 operations. 16 wire guided wide local excisions (14 with sentinel node biopsy), 7 mastectomies (2 with sentinel node biopsy; 1 with axillary clearance), 6 margin re-excisions, 1 tissue expander insertion and removal, 3 Latissimus Dorsi with implant and 2 TRAM reconstructions. Other cases include haematoma drainage, scar revisions and nipple reconstructions. This group generated 100 NHS surgical outpatient consultations (78 breast and 22 plastic surgery).

12 patients (37.5%) underwent surgery for a B3 vacuum result; 10 underwent wire guided and 1 ultrasound guided skin marked excision biopsy. 1 patient was treated privately. This group generated 25 NHS surgical outpatients consultations.

Conclusions: This study highlights the impact of the 47–49 year age extension within the breast screening programme on the workload of the surgical department of a UK Breast Cancer Screening Unit offering non-randomized invitations. The study will inform other surgical units of expected workload when age extension is fully implemented.

1. Introduction

Breast cancer is the second most common cause of cancer death in women after lung cancer. The publication of The Forrest Report in 1986 led to the implementation of the NHS Breast Screening Programme (NHSBSP) in 1988. The current programme screens 1.6 million women per year. UK National initiative to extend the age range of women eligible for breast screening to ages 47–73, from the current range of 50–70, was proposed in 2007 by The Cancer Reform Strategy. This age extension was started in 2010 and expected to be nationally implemented by 2016.

Initial pilot studies assessed and confirmed the feasibility and acceptability of randomizing the phased introduction of this age extension. The North & East Devon Breast Screening Unit (BSU) is the first unit to invite young women in the age group of 47–49, without randomization. The aim of this study was to assess the increased impact on the surgical unit due to the prevalence (first) screening round for this lower age extension group.

2. Method

2.1. Screening unit

InHealth Group Ltd operates the stand alone North & East Devon BSU. It operates both static and mobile digital mammography units with facilities for ultrasound and stereotactic biopsies. The total screening population served is 80,000.
2.2. Surgical unit

The Royal Devon and Exeter NHS Foundation Trust, a medium sized teaching hospital based in Exeter, Devon, England contains the Surgical Breast Unit and receives almost all the surgical referrals generated by the North & East Devon Breast Screening Unit. The Surgical Breast Unit consists of 3 consultant breast surgeons of whom one is involved in oncoplastic work with the rest of the reconstructions supported by the plastic surgery department.

2.3. Data

Retrospective data was collected of all women invited to the screening programme between the ages 47–49, since the implementation of non-randomized screening for this group in January 2011. The patients who did not accept the invitation or who were investigated and discharged back to the national screening programme with no requirement for surgical intervention were then excluded. The remaining patients’ information was obtained from the electronic record from the BSU, patients’ notes, histology reports, operation notes and outpatient clinic letters. The data was analysed on an Excel worksheet.

3. Results

A total of 4250 (76%) women accepted the invitation of the 5624 invited. This lead to initial recall of 396 women of whom 88 (22%) underwent an ultrasound or stereotactic core biopsy. 32 patients subsequently underwent surgical intervention. (Fig. 1).

Group A consists of 20 patients (62.5%) undergoing surgery for confirmed either DCIS only (6 patients) or invasive malignancy with or without DCIS (14 patients). These patients required 37 theatres attendances, requiring 42 operations. (Fig. 2) There were 16 wire guided wide local excisions (14 with sentinel node biopsy), 7 mastectomies (2 with sentinel node biopsy; 1 with axillary clearance) and 6 cavity re-excisions. The remaining operations were due to immediate reconstruction procedures of 3 Latissimus Dorsi with implant reconstruction and 2 free TRAM reconstructions. The rest of the cases were due to insertion and subsequent removal of a tissue expander insertion, drainage of haematoma, scar revision and nipple reconstructions. This group generated a total of 100 surgical outpatient consultations. 78 of these 100 outpatients were with a breast surgeon (21 pre-operative and the remaining 57 post-operative/follow up) and the remaining 22 were for consultations with the plastic surgery team.

In the remaining group, Group B, of 12 patients (37.5%) underwent surgery for an indeterminate (B3) result on vacuum aspiration. (Fig. 1)

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**Fig. 1.** Flowchart of women in the age group 47–49 who were invited, screened, recalled and further investigated.
biopsy. 10 underwent wire guided excision biopsy of the lesion. Of the remaining patients, 1 underwent an ultrasound guided skin marked excision biopsy and the other underwent surgery in the private sector. This group generated 25 surgical outpatients consultations.

4. Discussion

This study presents the data from a single UK BSU to invite, without randomization, all women in the age group of 47–49 for breast screening. In the UK, the NHS Breast Screening Programme stipulates a minimum detection rate of invasive tumours of 3.6 per 1000, with an average age at prevalence screen of 51 years.4,5 This is comparable to the rate of 3.3 per 1000 in our younger population of women at the prevalence screen.

The impact of this on the surgical department resulted in 125 surgical outpatients consultations and 53 operations. Majority of the operations are for impalpable lesions detected on this prevalence screen, hence the most common type of surgery in the Group A was wire guide wide local excision with/without sentinel node biopsy dependent on the histology of the breast lesion (n = 17) and wire guided excision biopsy for Group B patients (n = 10).

Mastectomy was performed in 35% (n = 7) in Group A patients, either as primary operation (n = 3) or secondary to a wide local excision (n = 4). All women undergoing mastectomy (100%) underwent or awaiting a reconstruction (Fig. 2). This is expected as the younger women are more likely to be medically fit to undergo reconstruction and more likely to choose this option.

This study examines the increased workload resulting from extending the prevalence screen to include younger women (aged 47–49) in the NHS Breast Screening Programme, but the existing resources in the surgical departments absorbed this extra work. The discussion of the increased financial impact for the health service is more complicated. Even though the increased initial workload undoubtedly will lead to increase in the cost implication, the screening of younger women will lead to lesions being detected early and hence more amenable to breast conserving surgery. Therefore the increased financial impact may prove to be beneficial and more cost effective for the screening programme during the later incidence screens.

This study is aimed to help other surgical department attached to BSU in the UK to help prepare in the increased resource demand due to the implementation of new guidelines for the NHS Breast Screening Programme.

Ethical approval

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Authors’ contribution

AVA, JMD & RC: designed the study.
JMD, MJC, DJF: revised the manuscript.
AVA: Collected the data & wrote the article.

Conflict of interests

None declared.

References