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Quality Assurance of Non-Operative Diagnosis of Invasive Breast Cancer by Ultrasound-guided Biopsy

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Introduction

According to Quality Assurance Guidelines for Breast Cancer Screening Radiology, Second Edition, NHSBSP Publication No 59 March 2011, it is recommended that at least 90% of women should have a non-operative diagnosis of invasive cancer by needle histology after a maximum of two attempts. A definitive diagnosis should be achieved in the least number of visits as it enables early patient counselling and treatment. Unnecessary anxiety related to repeated attendances for assessment can also be minimized.

Objectives

The objective of this study is to compare the performance of a regional center to that of published recommendations as part of a quality assurance programme.

Methodology

A retrospective review of all consecutive ultrasound-guided core needle biopsy procedures of 197 breast lesions performed in a regional hospital in the year 2014 was conducted. A total of 34 cases with final definitive operative diagnosis of invasive cancers were identified and included for analysis. The number of times of previous needle biopsy and the corresponding needle histology results were recorded.

Result

There were 34 invasive cancers diagnosed definitively upon surgical excision among the lesions which were examined by needle biopsy. The mean age was 57 years (range 26-93). A non-operative diagnosis of invasive cancer was achieved by needle histology after one single needle biopsy attempt in 91.2% (31/34) and in 94.1% (32/34) after a maximum of two attempts. Excision for the two remaining lesions was performed only after a single biopsy attempt: one was a lesion which was excised during the same operative session as the incision and drainage of a large associated abscess, and the other one was excised only after one negative needle biopsy attempt due to patient's preference. Our non-operative diagnosis rate surpasses the minimum standard quoted by the aforementioned Guidelines that at least 90% of invasive cancers should be diagnosed non-operatively within a maximum of two

attempts, and is close to the suggested achievable standard of $\geq 95\%$. Further improvement may be achieved by means of enhancing awareness of potential technical pitfalls, and technique optimization e.g. sonographic orthogonal confirmation of needle position and mobilization of deep seated lesions with local anesthetic infiltration. Continuous quality assurance programmes and multidisciplinary team involvement are also of vital importance to ensure timely and appropriate patient care in breast cancer.