

Overview Of Early Clinical Implementation Of Digital Breast Tomosynthesis: A Single Centre Experience

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OBJECTIVE:

This study aimed to evaluate the impact of performance of mammographic study before and after the introduction of digital breast tomosynthesis (DBT) into the clinical practice in University of Malaya Medical Centre (UMMC).

METHODS:

A retrospective study was conducted on patients who underwent breast biopsy in UMMC 6 months before and after the introduction of DBT. The patients were divided into two groups: FFDM (n = 1250) and FFDM + DBT (n = 2174). Histopathological examination results were the gold standard of the study. The patient's flow was demonstrated in Figure 1. The biopsy rate, cancer detection rate, sensitivity and positive prediction values (PPV) were calculated and compared between the groups. All the analysis was done using SPSS version 22.0 and a p-value <0.05 was considered as statistical significant different.

RESULTS:

The combination of FFDM and DBT resulted in significant reduction of biopsy rate from 9.8% to 7.7% (p = 0.03). The cancer detection rates were not statistically significant different between FFDM and FFDM + DBMT groups (43% versus 36%, p = 0.275). Not significant difference (p = 0.326) was found between BIRADS scoring (1-3 considered as benign; 4-5 considered as malignant) and histopathological results for the FFDM + DBT group. However, statistical significant difference (p = 0.001) was found between BIRADS scoring and histopathological results for the FFDM group. The sensitivity and PPV were 90% and 36% for FFDM group; and 92% and 38% for FFDM + DBT group, respectively.

CONCLUSION:

The combination of FFDM and DBT significantly reduced biopsy rate compared to FFDM alone. The sensitivity and PPV were also increased from 90% to 92% and 36% to 38%, respectively, indicating that incorporation of DBT in mammographic examinations increased the number of true positive cases. A larger cohort study is needed to verify these findings.