The Development of Mammography Service in Central Provinceof Sri Lanka.

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ABSTRACT

Breast carcinoma is a leading cause of death in women in all over the world.Mammography is the primary effective detection technique to reduce breast cancer mortality.**The objectives** of the study were to describe how the mammography service was established and evolved in Central province,the quality of the service and the experiences of the mammographers who were providing the service.**Method:** A cross-sectional descriptive study using a self administered structured questionnaire.The results were comparatively discussed with the existing literature& Mammography Quality Standard Act. **Results andConclusion:** The mammography service in Central province is still in primitive stage. Poor developments can see in the fields of technology, education of the mammographers and screening programs.

INTRODUCTION

Breast cancer is the leading cancer in women in all over the world as well as in Sri Lanka[1]According to the national statistics;the annual age standardized rate is 18.3 per 100,000 populations[2].Mammography, a breast x-ray examination is the primary, most effective tool for the early detection of breast cancers. Diagnostic mammography performed on patients with symptoms. Asymptomatic with risk group patients undergo a screening test. The benefit of mammography for the early detection and treatment of breast cancer outweighs the minimal risk of radiation received during mammography [3]. Mammography service is defined as the operation of equipment to produce a quality mammogram with correct interpretation and good patient care. Quality improvement is the processes used in fulfilling each element of a quality service. Goal of a good health service is to decrease complication rate, morbidity, mortality and cost of care[4]. At Central province in year 2001, the number of women subjected to breast examination were 257 per year .Out of them, if 100 women were examined an incidence of 2.1 breast abnormalities were detected[5]. All the personal involved in the service should have the correct knowledge and experience to render a good quality service according to the demand. This study describes how the mammography service was established and evolved in Central province (from the aspect of mammographers), the experiences of the mammographers who are providing mammography services in Central province and how the quality assurance program is carried out in places where the study had been done.

MATERIALS AND METHODS

A retrospective cross sectional descriptive study. All qualified radiographers who were performing mammography in government and private hospitals in Central province participated in the study (The total population and all the pioneers were included).Written consent was taken and a self administrated structured questionnaire was used. All the data were collected from the beginning of the service. The categorical variables which measured were: Number of hospitals where mammography facility was available, Details of the available units, Number of patients for mammograms from 2005 to 2010, Patient waiting time, Number of mammographers, Availability of screening facility, Protection methods, Quality assurance and cleanliness programs, Survey and medical audit programs, Ethical concern, The education, training and the experience of each mammographer. Qualitative data were categorized to emerge the major themes(development, quality of the mammography service and the experience of the mammographers).The analysis of the quantitative data was done by using Microsoft excel software. Then the results were comparatively discussed with the foreign literature and mammography quality standard act (MQSA) which was published by U.S. Department of Health & Human Services, in year 1994 and April 28, 1999[6].

RESULTS

There were seven subjects and all of them were females. First unit in the province was installed in year 1995. There were 03 mammography units; all were installed in the Kandy district. One mammography machine was commissioned 13 years back and other two units were commissioned 7 years and 5 years back. All these three units have been functioning to date and only plain x-ray mammography systems were available. No unit has xero-mammography or mammography guided (stereotactic) biopsy or digital system. A total of 443 patients had undergone mammography in year 2005; this had increased to 1957 in year 2010. Hospital 1 (government) has increased the patient waiting time from 14 days to 20days during last 5 years. Hospital 3(private) has no patient waiting time at all from the beginning. Number of mammographers in the hospital 1 increased from 2 to 4 but in the private sector, there were no improvement of the number of mammographers.

Ratio of the number of patients: Number of Mammographers

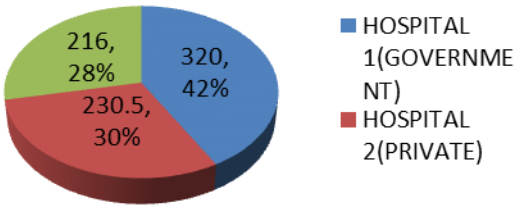
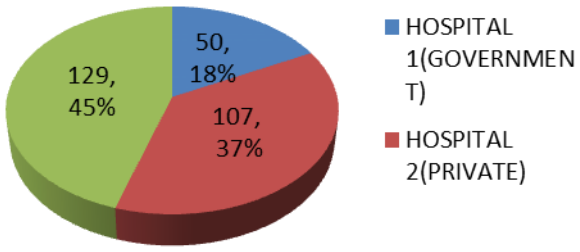


Fig 1-2005



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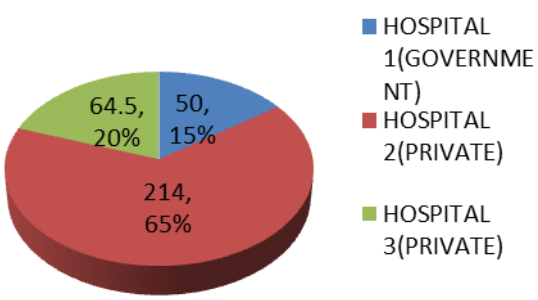
Ratio of the number of patients : number of radiologists who were involved in reporting



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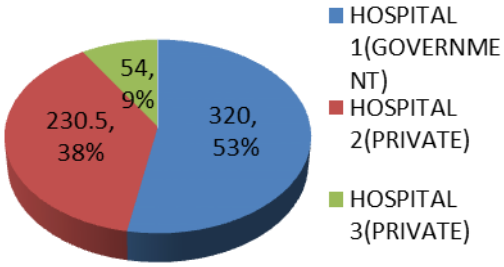

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Screening facility was not available in the government hospital. All the mammographers were following the radiation protection methods such as careful techniques, Lead apron for abdomen, correct positioning, correct equipment, correct exposure factors and well explanations.The frequency in quality control program in the government hospital was higher than private hospitals. It was once in 12 months. One hospital had no survey or a medical outcome audit system or a consumer complaint mechanism. All the mammographers got theoretical knowledge in anatomy, physiology and general- accessory equipments during their radiography training, but they had not participated in any practical or clinical experience in mammography. But all of them were licensed and had the diploma in radiography, when they started their carrier as a mammographer.

DISCUSSION

First mammography unit was installed in 1995 at a private medical institute in Central province. From then until today, there had been a gradual increase in the provision of mammography service but took many years for expansion. The rate was 3per 10 years. These results disagreed with the Buttimer and McInerney[7]who showed expansion rate was 4 per year.This could be due to developing economy of Sri Lanka and lack of the service awareness. All units were more than 7 years old, it had plain X-ray systems and confined to one town. It was not same as the previous study but it was in agreement with Buttimer[7]regarding digital mammography and conventional film/screen system. It revealed digital system was not available in current practice and from the beginning up to date all units had same conventional film/screen system and basic technology. It could directly influence early and accurate diagnosis of the diseases and the radiation protection aspects of the patients. Also it could affect quick transformation of data between the stations and Medical Professionals and due to this delay, the patients had a lesser chance to get the further consultations quickly.

The study explored that although the number of mammographers and radiologists increased gradually, the mammography units have not increased according to the demand, it could be the

reason for higher waiting time in the government hospital. It was the only place where the patients could reach the mammography examination free of charge. This was similar with previous study done by Carl D'Orsi[8]in USA, their patient waiting times for diagnostic mammography ranged from 1 week to 4 weeks.Screening facility was not available in the government hospital. It could be a major disadvantage to the patients, the staff and the radiation workers for early diagnosis of the breast diseases and it might cause the improvement of the number of the breast cancers in the province. Although two private hospitals had provided the service it was not effective due to cost, service curtailments which contributed to make it more difficult for women to obtain the procedure within a reasonable amount of time.The results of this study was concurrent with the previous study, also, it revealed Ireland had a breast screening programme which was in the planning stage[8].When compared with the literature, all the hospitals were concerned and used all the required radiation protection methods from the beginning until now. According to the MQSA regulations[6] each facility should establish and maintain a quality assurance program. In this study, it was explored that the frequency in quality control program in the government hospital was higher than the private hospitals. It was once per year, but in private hospitals it was scheduled once in 2 years and hospital 3 was not performing even once. This could be due to availability of poor facilities in the hospitals and lack of knowledge of the mammographers. Even one hospital had no survey system or a medical outcome audit system. Information on the outcome from mammography including biopsy rate and cancer detection rate was not routinely available at all three hospitals. These findings were in line with Buttimers´ study [7].All the mammographers fulfilled the theory knowledge, according to the MQSA but they had not participated in any practical and clinical experience satisfactorily. According to the MQSA at least six of continuing education programs were required which was related to each mammographic modality used by the mammographer. Before a mammographer might begin independently performing mammographic examinations using a mammographic modality, the mammographer should have had at least 8 hours of continuing education units in the new modality[8]. But the study explored except three mammographers none of other mammographers had never participated in any in–service or continuing education programs during their work periods.

CONCLUSIONS

When comparing with international level and MQSA,Central province mammography service is still in the primitive stage.

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