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Large-Gauge Needle Biopsy in Diagnosing Malignant Breast Neoplasia

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A B S T R A C T

This paper is concerned with large-gauge needle biopsies of suspicious breast neoplasia performed within a three-year period (22nd June 1999 through 21st December 2001). Within that time 262 large-gauge needle biopsies as well as cytological punctions were performed with the aim of diagnosing benign and malignant neoplasia. In the same three-year period 29 malignant breast tumors were diagnosed. In one of the patients a clinically and PHD verified alteration was found which pointed to Mb. Padget, while in another patient an atypical ductal hyperplasia was confirmed by a pathohistological test.

***Key words**: breast cancer, large-gauge needle biopsy*

Introduction

Breast cancer holds the first position among malignant neoplasia as a cause of death in women. This statement is true for the Republic of Croatia as well as for most countries in the world[1,2]. Over the last thirty years or so there has been a constant increase in the occurrence of breast cancer and in the death rate due to this illness. Thus in 1970 there were 681 newly established cases of breast cancer in women (rate 14.3 per 100,000) and in the same year 327 women died of breast

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cancer (rate 14.3 per 100,000). Ten years later, in 1980, there were 1,127 newly established cases of breast cancer (rate 47.5 per 100,000), and in the same year 456 women died from the same cause (19.1/ 100,000). Indications of a constant increase were recorded ten years later, so in 1990 there were 1,461 newly diagnosed patients with breast cancer (59.3/100,000), and in the same year 710 women died of it (29.9/100,000). The latest evidence concerning the occurrence of breast cancer according to the Cancer Register of the Republic of Croatia shows that in 1995 the number was that far the highest ever: 1,779 cases (72.2/100,000) and that in the same year 768 women died of that cause (31.2/ 100,000). The latest evidence bearing on the death rate due to breast cancer in women dates from 1998 when, according to the Cancer Register for the Republic of Croatia, 794 women died of that illness (32.2/100,000)[1,2].

Based on the afore-mentioned data concerning the increase of occurrence of breast cancer and the death rate of breast cancer patients it becomes obvious that between 1970 and 1996 the incidence of the illness increased by 242% and the death rate by 218%[1,2].

Compared to other countries of the world the Republic of Croatia shows a medium incidence of breast cancer, and within its boundaries the front position is held by Istria, Primorsko-Goranska county and Zagreb. The highest incidence of breast cancer in the world has been recorded in the developed countries of North America and Europe, whereas the lowest incidence has been found in some Asian and African countries[1,2].

In 5% of newly diagnosed patients with breast cancer in the Republic of Croatia the tumor has spread regionally, whereas in 26% it shows distant metastases. This fact affects the possibilities, the results and the success of treatment as well as the future prospects which are much poorer if patients with breast cancer have started treatment at an advanced stage of illness i.e. after the tumor has spread (which is the most common case)[1–5].

The risk of breast cancer occurrence grows with age and is greater for women with personal and family history including breast cancer cases. The following factors are also indications of a higher risk of breast cancer occurrence: early menarche, late menopause, prolonged application of oral contraceptives, prolonged use of estrogen in the postmenopausal period, nulliparity, first childbirth after 30 years of age, higher educational level, higher socioeconomic status and atypical breast hyperplasia confirmed by biopsy. Among the factors suspected to affect breast cancer but still lacking scientific confirmation are the following: ethnical differences influencing differences in diet (specifically fat intake), the influence of pesticides, alcohol consumption, obesity, induced breech of pregnancy and physical inactivity[2,4–12]. Large-gauge needle biopsy of malignant breast neoplasia has nowadays proved to be a choice method, particularly if it is ultrasound- guided and not random[13–18].

Materials and Methods

This paper deals with large-gauge needle biopsies of suspicious breast neoplasia performed in the Division for Breast Diseases of the Department for Gynecology and Obstetrics of the General Hospital »Zabok»in Zabok within a three-year period (22nd June 1999 through 21st December 2001). Within that time 262 large -gauge needle biopsies as well as cytological punctions were performed with the aim of diagnosing benign and malignant breast neoplasia. Thirty large-gauge needle biopsies of breast neoplasia found suspicious in previous ultrasound and mammographic tests were carried out. Large -gauge needle biopsies were ultrasound

-guided which resulted in a high level of accuracy of the diagnostic test. A precondition for executing large-gauge needle biopsies in case of suspicious neoplasm was a previous mam- mographic test and a detailed ultrasound breast examination enabling us to locate suspicious growths with a high level of precision and to increase the accuracy of the subsequent biopsy. For the purpose of carrying out large -gauge needle biopsies of potentially malignant breast neoplasia an automatic »pistol« BARD-MAGNUM with thick needles (18–14 Gauge diameter which equals 1.7–2.1 mm) was applied. We averagely used 4 cylinders of tissue obtained by large-gauge needle biopsy, which was later processed in the Department for Pathology of our hospital, and this procedure has resulted in a very accurate pathohistological diagnosis.

Results and Discussion

In the afore-mentioned three-year period 29 patients with a malignant breast neoplasia were diagnosed (by exact PHD verification of samples obtained through large-gauge needle biopsy). In one patient a clinically confirmed alteration pointed to Mb. Padget. The age evaluation of examinees falls within the 95% reliability interval, which in this case amounts to 46.8 to 52.4 years of age. Their span extends from 31 to a maximum of 82 years of age with a standard deviation of 9.63 years. The number of childbirths ranges from 0 to 9 with a standard deviation of 1.96. There were 47.22% of women with 2 childbirths and 34.24% of women with only one childbirth. The pathohistological findings of 29 patients pointed to a ductal invasive breast cancer. In one patient Mb. Padget was confirmed and in another patient an atypical ductal hyperplasia was found. It was proved that for the whole group of 30 patients with a suspicious ultrasound or mammographic finding pointing to malignant breast neoplasia, the pathohistological diagnosis correlated in 96.66%, while only in one patient an atypical ductal hyperplasia was verified (3.33%). The average size of tumors was 18 mm. In analyzing the interrelationship of pathohistological findings in samples obtained by large-gauge needle biopsy and the diagnostic methods pointing to suspicious malignant breast neoplasia there is low probability that these two methods could be independent, because of $p<0.1$ which points to the acceptability of the hypothesis about a high correlation between an accurate mammographic and ultrasound diagnosis and its pathohistological verification.

Conclusion

The results that have been obtained prove the acceptability of ultrasound-guided large-gauge needle biopsy in detecting malignant breast neoplasia. We have shown that by means of the above-described method very reliable results have been obtained as well as a rather accurate pathological verification of malignant breast neoplasia without causing serious trauma to the patients. The advantage of teamwork between the gynecologist, the radiologist, the pathologist, the cytologist and the surgeon should be emphasized as particularly important because it guarantees good results in treating patients affected by malignant breast neoplasia. In our hospital such a team is in charge of the whole diagnostic and therapeutic procedure including the surgery.

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ŠIROKOIGLENA BIOPSIJA U DIJAGNOSTICI ZLOĆUDNIH NOVOTVORINA DOJKE

SAŽETAK

U ovom radu izvršili smo prikaz učinjenih širokoiglenih biopsija u suspektnih novotvorina dojke u trogodišnjem razdoblju (od 22.06.1999. do 31.12.2001. godine). U tom vremenu učinili smo 262 širokoiglene biopsija te citoloških punkcija u dijagnostici dobroćudnih i zloćudnih novotvorina dojki. U navedenom trogodišnjem razdoblju dijagnosticirali smo u 29 bolesnika zloćudnu novotvorinu dojki. U jedne bolesnice radilo se o klinički i PHD-om verificiranoj promjeni koja je govorila za Mb. Padget, dok se u jedne bolesnice patohistološkim nalazom verificiralo atipičnu duktalnu hiperplaziju.