

## Mastectomy is an over-treatment in patients with occult breast cancer

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*Background.* In patients presenting with metastases of adenocarcinoma in axillary lymph nodes, and no evidence of primary cancer on physical and radiological examination, the most probable source of metastases is an undetected microfocus of breast cancer. Therefore, in such patients, "occult" breast cancer is diagnosed.

*Objective.* Is mastectomy justified in such patients?

*Material and methods.* Twenty two patients with diagnosis of occult breast cancer operated on from January 1982 to December 2002 in our Clinic composed the studied group. In 8 cases (36.4%) mastectomy was performed without the diagnosis of primary focus in the breast. In one case surgical biopsy of the upper-outer quadrant of the breast revealed the presence of cancer – the only case in the presented material of mastectomy performed after breast cancer diagnosis. Altogether, mastectomy was performed in 9 women. In the remaining 13 cases, mastectomy was not performed.

*Results.* In 63.5% of women (5/8) who underwent mastectomy despite the lack of evidence of breast cancer, pathologic examination did not reveal the presence of cancer. In 53.8% (7/13) of women in whom mastectomy was not performed, the primary focus was identified in the breast during follow-up. Altogether, ipsilateral breast was identified as the source of axillary metastases in 50.0% of women from the studied group. In 45.5% of women the primary focus remained undetected. In one patient (4.5%), the primary focus of cancer was found 9 months after mastectomy in the ipsilateral kidney.

*Conclusions.* In patients presenting with metastatic axillary lymphadenopathy and no evidence of breast cancer on physical and radiological examination, mastectomy is a gross over-treatment.

### Amputacja piersi u chorych na raka ukrytego piersi jest postępowaniem zbyt rozległym

*Wstęp.* U chorych z przerzutami raka gruczołowego do węzłów chłonnych pachowych, u których nie stwierdzono raka na drodze badania fizykalnego ani badań obrazowych, najbardziej prawdopodobnym źródłem tych przerzutów jest niewykryte mikroognisko raka piersi. Dlatego też, u takich chorych rozpoznaje się raka "ukrytego" piersi.

*Cel.* Czy wykonywanie amputacji piersi u takich chorych jest uzasadnione?

*Materiał i metody.* Grupę badaną stanowiły 22 kobiety, u których rozpoznano raka „ukrytego” piersi, operowane w Klinice od stycznia 1982 roku do grudnia 2002 roku. W 8 przypadkach (36,4%) wykonano amputację piersi, choć nie znaleziono przedoperacyjnie w piersi ogniska raka. U jednej chorej wykryto raka w piersi, wykonując biopsję kwadrantu górno-bocznego piersi. Był to jedyny przypadek, w którym pierś amputowano, posiadając rozpoznanie raka. Łącznie amputację piersi wykonano u 9 kobiet. U pozostałych 13 kobiet amputacji piersi nie wykonano.

*Wyniki.* U 63,5% kobiet (5/8) poddanych amputacji, pomimo braku rozpoznania raka, nie stwierdzono ogniska raka w materiale pooperacyjnym. U 53,8% (7/13) kobiet, u których amputacji nie wykonano, ognisko pierwotne ujawniło się w piersi w okresie obserwacji. Łącznie, rak piersi był potwierdzonym źródłem przerzutów u 50,0% kobiet z grupy badanej. U 45,5% kobiet ognisko pierwotne nie zostało zidentyfikowane. U jednej chorej (4,5%) ognisko pierwotne ujawniło się w nerce, 9 miesięcy po amputacji piersi.

*Wnioski.* U chorych z przerzutami raka gruczołowego do węzłów chłonnych pachowych, u których nie stwierdza się raka na drodze badania fizykalnego ani badań obrazowych, amputacja piersi wydaje się postępowaniem zbyt rozległym.

**Key words:** breast cancer, occult, axillary lymphadenopathy

**Słowa kluczowe:** rak piersi, ukryty, limfadenopatia pachowa

## Introduction

In patients presenting with metastases of adenocarcinoma in the axillary lymph nodes, and with no evidence of primary cancer on physical and radiological examination, the most probable source of metastases is an undetected microfocus of breast cancer [1-3]. In such cases "occult" breast cancer is diagnosed. The incidence of the entity ranges from 0.3% to 1.0% of all breast cancers [2, 4-7]. However, the diagnosis of occult breast cancer does not necessarily mean that the primary focus lies in the ipsilateral breast. Literature reports indicate that lung, thyroid, gastric, colorectal, pancreatic, kidney or ovarian adenocarcinoma may be sources of axillary metastases [7-10]. The primary focus may also be located in the contralateral breast [11].

In patients with cytologically confirmed metastatic axillary lymphadenopathy and no palpable tumor in the breast, mammography and ultrasonography constitute the first step of diagnostic workup. If no suspicious lesion is depicted on mammography and sonography, a gross therapeutic dilemma appears: should mastectomy be performed or should the breast be spared? Axillary lymphadenectomy may be performed as the next diagnostic, and also the first therapeutic, procedure [3, 4, 12, 13]. The results of pathologic examination of removed lymph nodes may indicate the breast as the most probable source of metastases, however such a suggestion does not resolve the problem. Currently, magnetic resonance imaging is very helpful in the identification of otherwise undetected breast cancers [8, 14-17]. However, the method is quite new and not widely available in Poland. Moreover, even magnetic resonance imaging does not reveal the primary focus in every case of occult breast cancer.

We have decided to present our experience with occult breast cancer patients, in whom MRI was not performed, in order to discuss the necessity of performing mastectomy in such cases.

## Objective

Is mastectomy justified in patients presenting with metastatic axillary lymphadenopathy and with no evidence of breast cancer on physical examination, mammography and sonography?

## Material and methods

The study group consisted of patients with the diagnosis of occult breast cancer operated between January 1982 and December 2002 at the Clinical Department of Surgical Oncology of the Medical University of Lodz. Occult breast cancer was diagnosed in patients presenting with metastatic axillary lymphadenopathy and no evidence of breast cancer on physical examination, mammography and sonography. No source of metastases was found in other organs and systems in these women, despite diagnostic workup.

## Patients

Twenty two patients were retrospectively identified, mean age 58.1 years (range: 42–77 years; median: 60 years). In no patient had cancer of the breast nor of other organs (incl. the contralateral breast) been diagnosed before presentation. In every case metastatic axillary lymphadenopathy was unilateral. The metastatic tumor was diagnosed in the right axilla in 13 cases (59.1%) and in the left axilla in 9 cases (40.9%). The mean diameter of the axillary tumor was 4.5 cm (range: 2-12 cm; median 4 cm). In 3 patients (13.6%) the axillary tumors were fixed to adjacent structures (N2). In the remaining 19 cases (86.4%), the tumors were movable. In each case cytological examination confirmed the malignant character of the axillary tumor.

## Surgical treatment

In 2 patients (9.1%) modified radical mastectomy (acc. to Madden) was performed. In 4 patients (18.2%) axillary lymphadenectomy with surgical biopsy of the upper-outer quadrant of ipsilateral breast was done. In 12 patients (54.5%) surgical treatment started with axillary lymphadenectomy only. After pathologic examination of the axillary specimen, indicating breast as the most probable source of metastases, in 6 of these 12 women, modified radical mastectomy (acc. to Madden) was performed. In 4 women (18.2%) only an incisional biopsy of the axillary tumor was done, as it was impossible to resect the tumor radically. Altogether, in 8 cases (36.4%) mastectomy was performed without the diagnosis of a primary focus in the breast. Details of treatment (locoregional and systemic) are presented in Table I.

## Analysis

We assessed the proportion of women in whom mastectomy or surgical biopsy of the upper-outer quadrant of the breast were performed with the diagnosis of breast cancer and of those in whose case the primary focus was not found. We also present the number of cases in which the primary focus was found in the breast or other organs during follow-up and in how many cases the primary focus remained unknown.

## Results

Among 8 women who had undergone mastectomy, detailed pathologic examination revealed the presence of cancer in 3 cases (37.5%). In 5 cases the primary focus was not found in the post-mastectomy specimens (5/8; 62.5%).

Among 4 women in whom surgical biopsy of the upper-outer quadrant of the ipsilateral breast was performed the primary focus was found in 1 case. In 3 cases, cancer was not found in the resected tissue. Altogether, on pathologic examination the primary focus was found in the breasts of 4 women.

Therefore, the search for the primary focus continued in 18 women during the follow-up period. The subgroup consisted of 5 women after mastectomy, in whom no primary focus was found in the breast, and of 13 women who did not undergo mastectomy.

Mean duration of follow-up was 36.9 months (range: 1 – 153 months; median: 21 months). During follow-up the primary focus was found in the breast in 7 of 13

Table I. Details of treatment of patients with occult breast cancer

Patient's no	Primary surgery	Cancer in breast tissue	Further surgical treatment	Cancer in breast tissue	CHTH	RTH	HTH	Site of primary tumor found during follow-up	Time interval between primary surgery and diagnosis of primary tumor [months]
1	MRM	cancer	not applicable	not applicable	no	yes	yes	not applicable	not applicable
2	MRM	not found	not applicable	not applicable	no	yes	no	left kidney	9
3	ALND + BUOQ	cancer	MRM	cancer detected earlier	yes	no	yes	not applicable	not applicable
4	ALND + BUOQ	not found	not performed	not applicable	no	no	no	breast	4
5	ALND + BUOQ	not found	not performed	not applicable	no	no	no	not found	not applicable
6	ALND + BUOQ	not found	not performed	not applicable	no	yes	yes	not found	not applicable
7	ALND	not applicable	MRM	cancer	yes	no	yes	not applicable	not applicable
8	ALND	not applicable	MRM	cancer	yes	yes	yes	not applicable	not applicable
9	ALND	not applicable	MRM	not detected	yes	no	no	not found	not applicable
10	ALND	not applicable	MRM	not detected	no	no	yes	not found	not applicable
11	ALND	not applicable	MRM	not detected	yes	no	no	not found	not applicable
12	ALND	not applicable	MRM	not detected	yes	yes	yes	not found	not applicable
13	ALND	not applicable	not performed	not applicable	yes	no	no	not found	1
14	ALND	not applicable	not performed	not applicable	no	no	no	breast	2
15	ALND	not applicable	not performed	not applicable	no	no	no	not found	not applicable
16	ALND	not applicable	not performed	not applicable	yes	yes	no	breast	17
17	ALND	not applicable	not performed	not applicable	yes	yes	no	breast	4
18	ALND	not applicable	not performed	not applicable	no	no	yes	breast	35
19	IBAT	not applicable	not performed	not applicable	no	no	no	breast	20
20	IBAT	not applicable	not performed	not applicable	yes	yes	no	not found	not applicable
21	IBAT	not applicable	not performed	not applicable	yes	no	no	not found	not applicable
22	IBAT	not applicable	not performed	not applicable	no	yes	no	not found	not applicable

MRM – modified radical mastectomy

ALND – axillary lymph node dissection

IBAT – incisional biopsy of axillary tumor

CHTH – chemotherapy

RTH – radiotherapy

HTH – hormonal therapy

women who did not undergo mastectomy (53.8%). In 1 case, the primary focus was identified in the kidney 9 months after the mastectomy had been performed. In 10 women the primary focus was not found during follow-up.

Altogether, in 11 of the 22 studied women (50.0%) the primary focus was in the ipsilateral breast, in 1 woman the primary focus was in the kidney. In the remaining 10 women, the primary focus remained unknown.

## Discussion

In 63.5% of women who underwent mastectomy despite the lack of evidence of breast cancer on physical and radiological examination, pathologic examination did not reveal the presence of cancer. Moreover, in one of these patients, the primary focus of cancer was found 9 months later in the ipsilateral kidney. On the other hand, in 53.8% of women in whom mastectomy was not performed, the primary focus was identified in the breast during follow-up. Altogether, the breast was identified as a source of metastases in 50.0% of women from the studied group. It means that in half of the studied women mastectomy was unnecessary. We think that a 50% probability of presence of cancer in the breast does not justify its amputation. This is gross and unacceptable over-treatment.

However, it should be noted, that even detailed pathologic examination of the postoperative specimen may not reveal cancer if the focus is very small. Therefore, the percentage of unnecessarily performed mastectomies in the studied group may be somewhat lower. Moreover, the duration of follow-up in our study is not very long. It means than in some women the primary focus might have appeared in the breast or in other organs later, after the end of our follow-up period. The fact that the primary focus remained undetected in some women, may also be the result of adjuvant treatment introduced in these patients.

Our identification rate of the primary focus in post-mastectomy specimens is lower than values reported by other authors [2, 3, 5]. They report finding the primary focus in 49% – 75% of the removed breasts [2, 3, 5, 6].

An analysis of both our material and of the literature data has forced us to conclude that in occult breast cancer mastectomy is, to an extent, blindfold surgery, and should not be performed. Many authors claim that mastectomy was the treatment of choice for occult breast cancer patients. However, these papers were published in the 1950s-1970s [1, 6, 7, 18-20]. In the literature published in the 1980s and the 1990s, the majority of authors opt against mastectomy, suggesting whole breast irradiation and systemic treatment in these patients [5, 8, 21, 22].

Current literature indicates that the sensitivity of magnetic resonance imaging is twofold higher than the sensitivity of mammography [23-26] and can reveal the presence of a primary focus in breast in a vast majority of patients with occult breast cancer [15-17]. In the remaining cases the primary focus may be situated in other organs.

To summarise, it is mandatory to perform magnetic resonance imaging in each case of occult breast cancer. The treatment of such patients should not be started before magnetic resonance imaging. The method is available in Poland, and its costs are refunded.

## Conclusions

In patients presenting with metastatic axillary lymphadenopathy and no evidence of breast cancer on physical examination, mammography and sonography, mastectomy is a gross over-treatment.

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