

Metastasis from breast carcinoma to endometrial polyp

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Summary

Metastasis of a breast carcinoma to an endometrial polyp is extremely rare, with only ten cases having been reported in the literature up to now. We present the case of a 60-year-old woman with invasive ductal carcinoma who complained of vaginal bleeding. She underwent hysteroscopy with biopsy. Microscopic examination revealed an endometrial polyp which contained foci of adenocarcinoma. The morphologic features of the tumor were identical to the original breast carcinoma.

Key words: : Breast carcinoma; Metastasis; Endometrial polyp.

Introduction

Breast carcinoma frequently metastasizes to the ovaries; however, metastasis to the uterus is less common and to an endometrial polyp is extremely rare [1, 2]. A review of the literature revealed ten previously reported cases of breast carcinoma metastasizing to an endometrial polyp [2-10].

We report a case of metastatic invasive ductal carcinoma to an endometrial polyp and review the literature.

Case Report

A 60-year-old woman presented with generalized bone pain to Cerrahpasa School of Medicine Department of Endocrinology. At the initial evaluation she was found to have hypercalcemia with a serum calcium level of 13 mg/dl accompanied by multiple bone metastases detected by bone scan. Bilateral mammogram revealed primary cancer in the left breast. Incisional biopsy showed moderately differentiated invasive ductal carcinoma (Figure 1). Hormone receptor status was strongly positive for both estrogen and progesterone receptors. Computed tomography (CT) scan examination of the chest, abdomen and brain were all negative for tumor. Hypercalcemia resolved after appropriate treatment with isotonic NaCl perfusion, furosemide and steroids, as well as IV infusion of pamidronate 90 mg/q/3 weeks. She was also treated with palliative radiotherapy to the affected lumbar vertebrae, accompanied with severe back pain. Tamoxifen (20 mg daily) was started for hormone receptor-positive metastatic disease. Eight months following the initiation of tamoxifen, the patient complained of vaginal bleeding. Vaginal ultrasound and hysteroscopy revealed a polypoid mass appended to the uterine dome. The polypoid mass was removed and endometrial curettage was performed. The mass measured 6.5 x 3 x 2.5 cm. On the cut surface, numerous small cystic structures ranging from 1-2 mm to several centimeters in diameter were seen. Microscopic examination showed an endometrial polyp containing irregularly scattered glandular structures, many of which were cystically dilated, set in a fibrovascular stroma. There were also foci of adenocarcinoma forming abortive glandular structures, cribriform patterns and small nests in some areas within the polyp stroma (Figures 2 and 3).

The tumor cells had large vesicular nuclei with prominent nucleoli and a moderate amount of eosinophilic cytoplasm. The vascular spaces within the stroma were filled with tumor cells. The histopathologic features of the tumor were identical to the original breast carcinoma. Histology of the endometrial curettage apart from the endometrial polyp displayed atrophic endometrium with no tumor infiltration. At the time of this biopsy the patient had already developed multiple liver metastases and bilateral pleural effusion, accompanied by progression of the local disease in the breast. She was then treated with a combination chemotherapy regimen of cyclophosphamide, 5-fluorouracil and methotrexate (CMF) with no response. Due to progressive disease the chemotherapy was switched to anastrozole 1 mg daily. However, two months following anastrozole treatment, she died of progressive disease.

Discussion

Malignant tumors metastatic to the female genital tract usually originate from the breast, stomach and colon. The ovary and vagina are the most frequent metastatic sites for these tumors [1, 2]. In the uterus, the metastatic process most commonly involves the myometrium rather than endometrium. Endometrial deposits, though rare, are more likely to be symptomatic, presenting with vaginal bleeding which may be mistaken as a complication of the tamoxifen [2]. Thus, patients with breast carcinoma suffering from vaginal bleeding should be examined to exclude metastatic involvement of the endometrium. Metastasis to an endometrial polyp is extremely rare, and to the best of our knowledge, there are only ten cases of metastatic breast carcinoma involving endometrial polyps [2-10]. The details of these cases and of our case are shown in Table 1.

Invasive lobular carcinoma of the breast is most likely to metastasize to the female genital tract. The histologic types of the previously reported ten cases of breast carcinoma metastasizing to an endometrial polyp were lobular in five cases, ductal in four, and apocrine in one. In seven of these cases, the endometrial polyp appears to have been tamoxifen-associated. It was not stated in the other three reports whether the patients were taking tamoxifen [2-10].

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Fig. 1

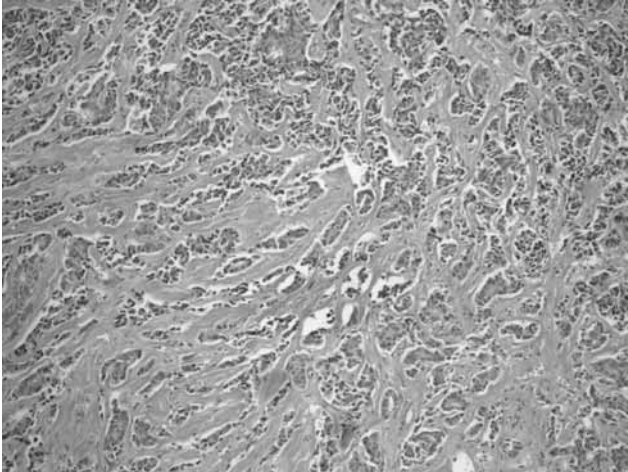


Fig. 2

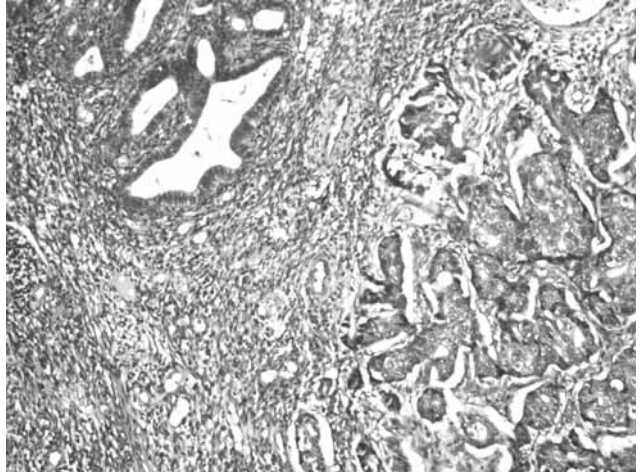


Fig. 3

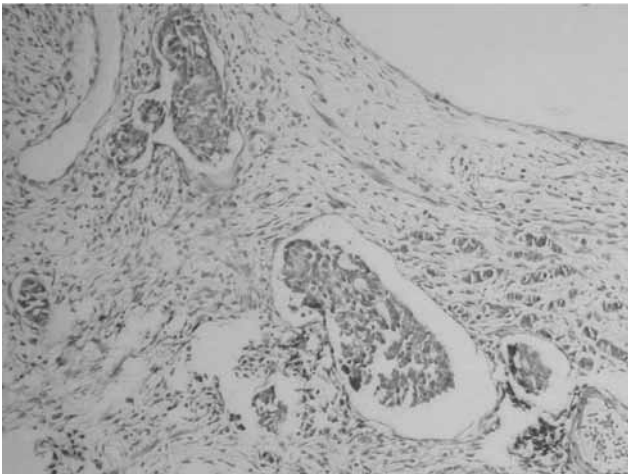


Figure 1. — Incisional biopsy from the left breast revealing invasive ductal carcinoma (hematoxylin-eosin x 40).

Figure 2. — Invasive ductal carcinoma cells within the endometrial polyp stroma (hematoxylin-eosin x 200).

Figure 3. — Lymphatic invasion in the endometrial polyp (hematoxylin-eosin x 100).

Table 1. — *Breast carcinomas metastasing to endometrial polyps: Review of the reports in the literature.*

Case	Author year of publication	Age (years)	Size of the endometrial polyp (cm)	Histologic type of breast carcinoma	Tamoxifen therapy	Time between primary tumor and endometrial polyp metastasis (months)
1	Kumar <i>et al.</i> [2], 1983	55	NM	Invasive ductal	NM*	3
2	Sullivan <i>et al.</i> [3], 1990	83	11.5	Invasive ductal	NM*	72
3	Corley <i>et al.</i> [4], 1992	58	NM*	NM*	+	NM*
4	Aranda <i>et al.</i> [5], 1993	76	9	Invasive lobular	NM*	36
5	Lambot <i>et al.</i> [6], 2001	70	1.5	Apocrine	+	48
6	Alvarez <i>et al.</i> [7], 2003	69	1,5	Invasive lobular	+	48
7	Houghton <i>et al.</i> [8], 2003	62	3	Invasive lobular	+	14
8	Houghton <i>et al.</i> [9], 2003	92	3	Invasive lobular	+	60
9	Acikalin <i>et al.</i> [9], 2005	58	5	Invasive ductal	+	48
10	Al-Brahim <i>et al.</i> [10], 2005	53	7	Invasive lobular	+	48
11	Current case	60	6.5	Invasive ductal	+	8

NM: Not mentioned.

Since distant metastases of breast carcinoma occur through arterial dissemination, the detection of uterine involvement is usually a reflection of advanced disease and widespread metastases as in our case. However, there are some exceptions in which only uterine metastasis is seen [11]. The interval time between initial diagnosis of breast carcinoma and the detection of an endometrial polyp metastasis has ranged from three to 72 months [2-10].

In conclusion, it is important to consider metastatic tumors in the evaluation of vaginal bleeding in patients with known breast carcinoma. Because of the possibility of involvement of endometrial polyps by metastatic carcinoma, pathologists should examine such polyps carefully and extensively.

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