

Skin Recurrence of a Phyllodes Tumor and Impact of Radiotherapy: A Case Report and Review of the Literature

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Abstract: *Introduction:* Phyllodes tumors (PTs) are rare and are usually associated with local recurrences. Determining appropriate clear margins at surgery, adjuvant chemotherapy, and adjuvant radiotherapy is an ongoing dilemma for oncology professionals. The skin recurrence of a PT is not a commonly described situation in the published literature. Herein, we presented a patient with a skin recurrence of a PT.

Case: A 48 year old Turkish woman presented with a lump on her left nipple-areolar complex. She had an anamnesis of a lumpectomy for PT 6 years ago and a nipple-areolar complex sparing mastectomy with immediate silicon reconstruction due to the recurrence of PT 3 years ago. No adjuvant treatment was administered after either of these surgical procedures. A magnetic resonance examination of her breast and a histopathological evaluation revealed the skin recurrence of PT. A nipple-areolar complex excision with 2 cm clear margins and adjuvant radiotherapy was then administered to her as the treatment regimen.

Discussion: Surgery is defined as the effective treatment for PT but patients with high risk factors as large tumor size, positive margins and recurrent disease adjuvant treatments must be added.

Keywords: Phyllodes tumor, Radiotherapy.

Phyllodes tumors (PTs) are uncommon fibroepithelial breast neoplasms that account for 1% to 3% of all primary breast tumors. In fact, some sources indicate that malignant phyllodes tumors of the breast account for less than 1% of all primary breast neoplasms [1-3].

Structurally, these tumors are analogous with fibroadenomas with exception to the presence of leaf like projections of the stroma and increased stromal cellularity [4]. It was first described and named cystosarcoma phyllodes by Johannes Muller in 1838 [5] and has since accumulated over 62 synonymous designations [1].

Surgical and adjuvant treatment strategies have not been well reported; moreover, no consensus has been reached on surgical or adjuvant treatments, especially for malignant PT. Some units have proposed adjuvant chemo and radiotherapy in certain cases (i.e., for recurrent PT after a mastectomy and with stromal overgrowth), but the role of adjuvant treatments is not yet clear [6-8]. Also, the skin recurrence of PT is not a common type of recurrence, and the effects of adjuvant treatment modalities on skin recurrences are not known. Herein, we reported a case of a third recurrence, i.e., a skin recurrence, in a patient who had

not received radiotherapy and discussed the effect of radiotherapy in the treatment of PT.

CASE

A 48 year old Turkish woman presented with a skin lesion on her left nipple-areolar complex. The lesion had been present for three months. Based on a physical examination, the lump was 3 x 2 cm in size, hard, pinkish, and bright (Figure 1a).

The patient reported that she had underwent a lumpectomy 6 years ago for the treatment of a malignant PT. The available pathology report from that operation defined a 3 x 2.4 cm malignant PT with 2 cm clear margins. She had a nipple sparing mastectomy and immediate reconstruction with a gel silicone implant 3 years after the first operation, and the pathology report from that operation indicated the removal of a 12 x 10 cm malignant PT with 1 cm clear margins. She received no adjuvant treatment after either of these operations.

She had no systemic symptoms of metastasis and no abnormal finding on her laboratory tests (i.e., complete blood count, tumor markers, and liver function tests). A chest x-ray also revealed no abnormal findings.

Magnetic resonance imaging of the breast revealed a 12 x 7 mm strong contrast enhancing, irregularly bordered mass on the left nipple with necrosis. The mass had invaded the subcutaneous fatty tissue. Two

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Figure 1: (a) Preoperative view of the breast with a large skin lesion and (b) Postoperative view of the breast with acceptable cosmetic result.

lymph nodes with asymmetric cortical thickening were also observed (Figures 2a, b, c).

The oncology council of our institution recommended the wide excision of the lesion without axillary surgery. This was to be followed with adjuvant radiotherapy. Per these recommendations, wide surgical resection of the lesion, including the nipple-areolar complex, was performed (Figure 1b), and the patient was discharged without any complication.

The histopathological evaluation revealed a neoplastic lesion with spindle cells and ranging atypical proliferation with 1 cm clear margins. The lesion was infiltrating the epidermis in some areas, and cellular pleomorphism and stromal cellularity was observed in different areas of the lesion. Due to the patient's history and the stromal component of the lesion, we diagnosed the lesions as a PT (Figures 3a, b, c).

After 4 weeks from surgery, RT planned with Computed Tomography (CT) simulation at the supine

position on breast board. Vac-lock cushion was used for arms up immobilization. Target volume was the entire breast and planned with Eclipse Planning System as a Static-Intensity Modulated RT (IMRT) technique. A total dose of 60 Gy at 30 fraction was performed and only Radiation Therapy Oncology Group (RTOG) Grade 2 skin toxicity had observed during treatment. After one year follow-up, no recurrence has been determined at the patient.

DISCUSSION

Treatment principles are based mainly on retrospective series and case reports because of small numbers of PTs and the traditional treatment for PTs is surgery due to the same clinical behavior and prognosis of primary breast sarcomas [6, 9-20]. Indeed, mastectomy is historically the treatment of choice for borderline and malignant PTs. Today, most authors recommend the wide excision of the tumor with at least a 10 mm clear margin [6, 11, 20-25]. Due to the low incidence of lymph node involvement, axillary

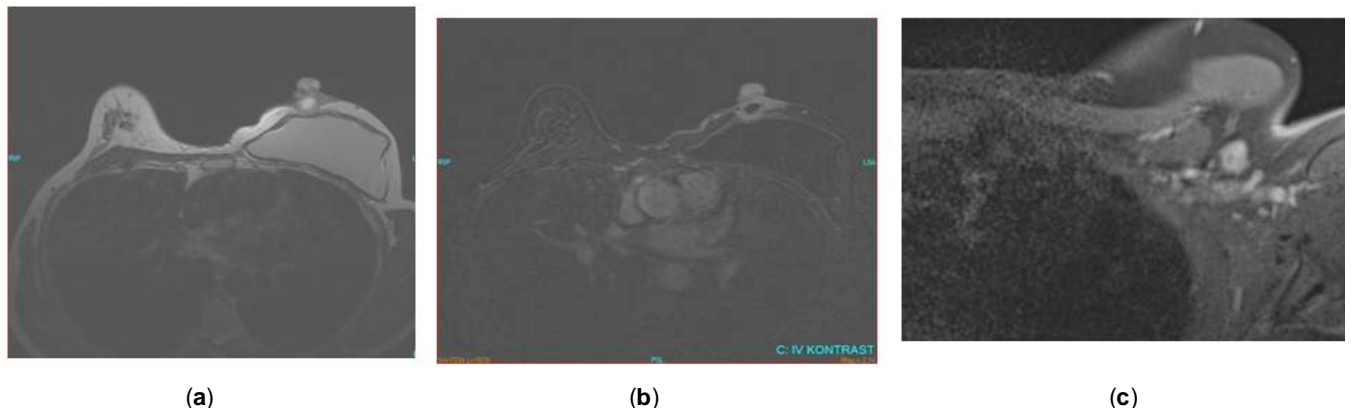


Figure 2: (a) Precontrast view of the lesion with necrosis (T2), (b) Magnetic resonance image of contrast enhancing nipple lesion with non-contrast enhancing area, and (c) Axillary lymph nodes with asymmetric cortical thickening.

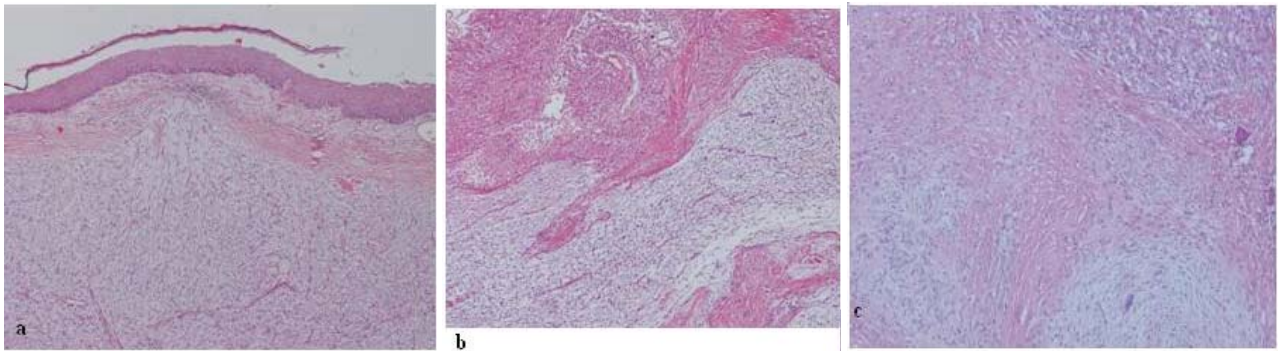


Figure 3: (a) Tumoral infiltration of epidermis, (b) Variability of cellularity, and (c) Variability of cellularity and pleomorphism.

dissection is not recommended [17, 22]. In our case, the patient underwent a lumpectomy and breast conserving surgery as the treatment. Moreover, adjuvant treatment was not administered alongside the surgeries because of the adequate surgical margins and tumor size. Different reports in the literature have suggested that stromal overgrowth, positive surgical margin, tumor size, and histologic grade predict recurrence after the primary surgery [6, 11, 21, 26-29].

Three years after the first operation patient had a recurrent 12 x 10 cm tumor. The patient had a nipple sparing mastectomy without adjuvant treatment. Tumor size and surgery type due to microscopic residual tumor in the breast tissue are risk factors for local recurrence, and the patient experienced skin metastasis only 3 years after the second surgery. We believe that the skin recurrence occurred because of the tumor cells present in the rest of the breast parenchyma, and the lack of adjuvant radiotherapy allowed those tumor cells to remain and grow. Locally recurrent disease is best treated with re-excision with wide margins or mastectomy followed by RT [30].

The role of adjuvant chemotherapy or radiotherapy is not clear, but some authors have suggested that additional therapy after surgery offers some benefit [6, 8,31-34]; moreover, a decrease in local recurrence has been reported in the literature with the addition of adjuvant therapies [6, 31]. Adjuvant irradiation can be necessary if the tumor is locally widespread and if clear surgical margins are not possible. We didn't practice hormone receptors pathologically because of hormone therapy is not effective for PTs [35].

In conclusion, no consensus for the treatment of malignant PTs has been reached. Further study is needed to determine which factors are associated with local recurrence and the role of adjuvant treatment in the recurrence of PT.

CONFLICT OF INTEREST

Hüseyin Kadioğlu and the other authors declare no conflict of interest.

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