

Renal Angiosarcoma: A Rare Case Report

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ABSTRACT

Angiosarcomas constitute about 2% of all sarcomas and generally are the worst prognostic subtype of soft tissue sarcomas. Angiosarcomas are very aggressive tumors and one year after diagnosis half of the patients die with metastasis of lung, lymph nodes, bone and soft tissue. Diagnosis can be accurate with immunochemistry stain, such as for factor 8 related antigen, CD 31, CD 34 and von Villebrand factor. Our patient was a 61 year old woman who died four months after symptoms appeared with extensive metastasis. She was able to receive chemotherapy for only one course and after that treatment was changed to palliative.

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Introduction

Angiosarcomas are very rare malignancies, constituting about 2% of all sarcomas [1]. Skin and superficial tissue are the most involved areas, and unlike other sarcomas, other involvement areas are the uterus, ovaries, small intestine, lung, heart, oral cavity, orbita and thyroid [2]. Angiosarcomas are the worst prognostic subtype of soft tissue sarcomas. Angiosarcomas are very aggressive tumors and after successful treatment, local recurrence is seen in 1/5 of patients and half of the patients die with metastasis of lung, lymph

nodes, bone and soft tissue [3]. Immunochemistry stains can help to confirm the diagnosis, such as for factor 8 related antigens, CD 31, CD 34 and von Villebrand factor [4]. In this report we present a case of a rare renal angiosarcoma.

Case Presentation

A 61 year old woman presented with shoulder pain that began 3 months before diagnosis. During

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this period she had lost 9 kg. On magnetic resonance imaging (MRI), there was only tendinosis of the supraspinatus and infraspinatus muscle and only symptomatic treatment had been given for her pain. Because of continuing pain, blood tests were performed and calcium was detected at 13 mg/dl. The patient was then evaluated with mammography, breast ultrasonography, cranial, thoracic and abdominal computed tomography (CT). There was a 50x52mm significantly contrasted, hypodense left renal mass on CT evaluation. Additionally, there were frontal brain and cerebellar metastases, multiple lymphadenopathy (the largest thoracic, paratracheal 30x24 mm; the largest abdominal, pelvic mesenteric 20x15 mm), lymphangitis carcinomatosa of the lung, skin and soft tissue metastasis, bilateral surrenal gland mass(right 31x18 mm, left 15x10 mm) and multiple bone metastases on CT evaluation

(Figure 1). Bone metastasis was confirmed by bone scintigraphy. There were multiple breast masses on mammography and ultrasonography, the largest mass was 12x9 mm with malignant features. Trucut biopsy was performed from the left renal mass. Atypical cells with small nucleoli, large vesicular nuclei, and large pale eosinophilic cytoplasm were observed and s100, CD31, actin and desmin stain negativity and CD34 positivity were detected with immunochemistry stains (Figure 2).

The patient was assumed to have renal angiosarcoma, and was started with cisplatin and docetaxel treatment and zoledronic acid for bone metastasis. Only one course of chemotherapy was given after which the patient worsened and the treatment plan was changed to palliative. The patient died one month after diagnosis.

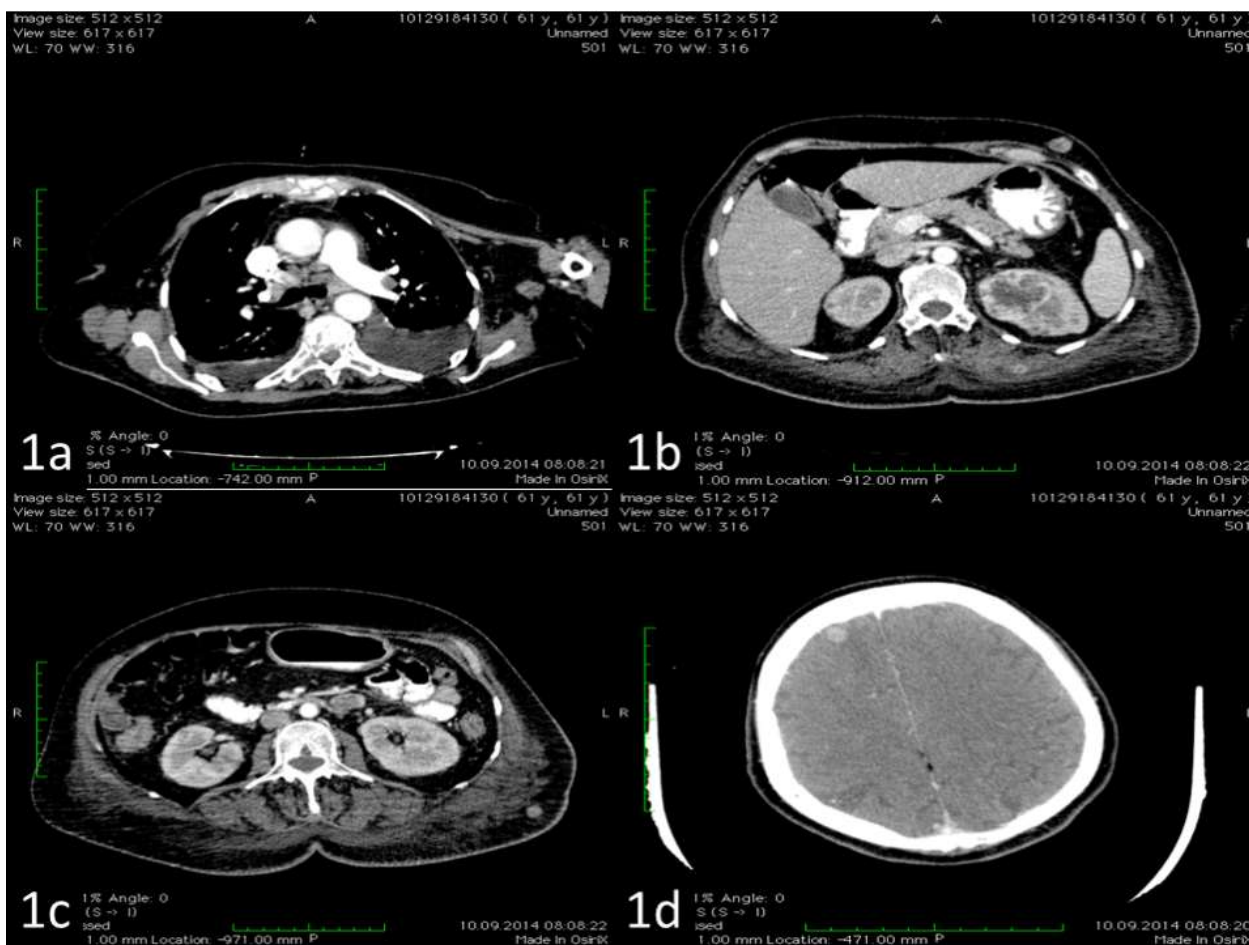


Figure 1. (a) Bilateral pleural effusion with mediastinal LAPs, **(b)** Left renal mass, **(c)** Intraabdominal enlarged lymph nodes, **(d)** Frontal brain metastasis.

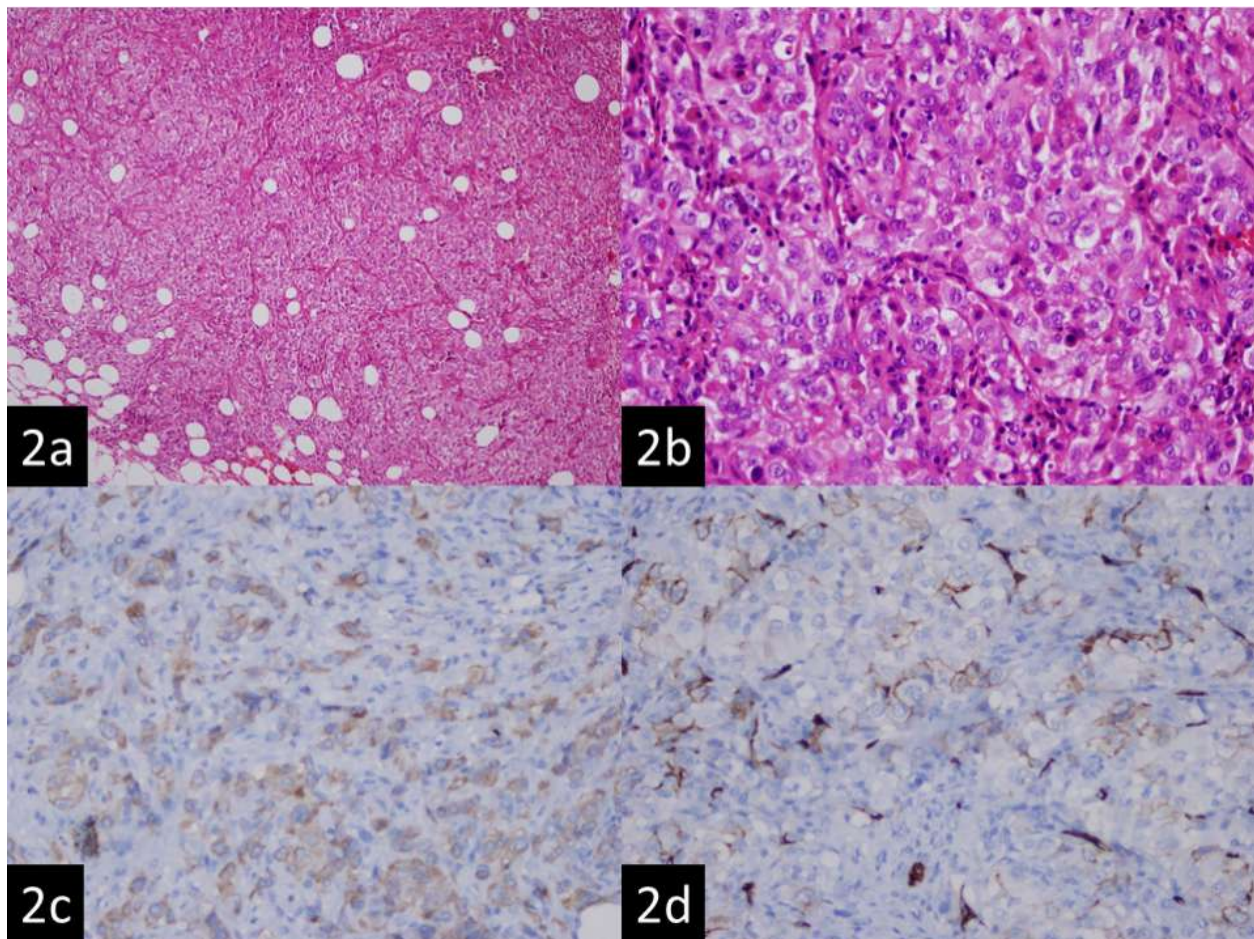


Figure 2. (a) Malignant epithelial cells infiltrating fibroadipose tissue, (b) Pleomorphic epithelioid cells with large eosinophilic cytoplasm, (c) Pan-CK-antibody staining against membranes in some cells, (d) CD 34 positivity of malignant cells.

Discussion

Angiosarcomas are a very rare malignancy and constitute about 2% of all sarcomas. They have an aggressive nature, progress in a short time, and most patients die generally within one year of diagnosis [1-3]. There is no standard treatment because of its rarity [5]. There are many hypotheses concerning the mechanism of tumor formation. According to Mc Carthy and Park's hypothesis, angiosarcomas originate from vascular structures in traumatized granulation areas. They showed that benign angiomas transformed to malignant angiosarcomas after radiotherapy in three cases [6]. Duck described 30 angiosarcomas related to vinyl chloride in 1975 [7]. Smoking and androgens may explain the male predominance of angiosarcoma [8]. Angiosarcomas may frequently develop from

benign vascular lesions but less often they develop after benign and malignant nerve sheath tumors, neurofibromas, leiomyoma, spindle cell hemangioma, retinoblastoma, Klippel-Trenaunay syndrome, Xeroderma pigmentosum, malignant germ cell tumors, herpes zoster lesions and Aicardi syndrome [3]. Despite these possibilities, there was no risk factor in our case. Till today, the cause of angiosarcoma is still unknown.

Angiosarcoma may be seen at any age, however, the disease is more common in older and male patients. Unlike other sarcomas, angiosarcomas generally occur in superficial tissue [9]. Renal angiosarcoma symptoms generally mimic renal cell carcinoma, such as hematuria and flank pain, so that patients are treated as for renal cell

carcinomas until pathological diagnosis. (5). Our case is the 61-year-old woman with primary kidney tumor, and there is no symptom of renal mass, only had shoulder pain. Our case had an atypical presentation without symptom of renal mass and risk factor

In a recent article, angiosarcoma cases evaluated in England, Germany, France and Spain until March 2013. Only 42 cases had reported in this region before March 2013. Renal angiosarcomas generally rapidly progress with hematological so that they were known generally poor prognostic tumors. Half of metastatic patients have two or more metastatic sites, lung and liver 46%, bone 39% and abdominal lymph node 11%, respectively (5). Aggressive nature of disease was seen in our case. There was only 3 months between symptoms and diagnosis but multiple metastatic sites detected such as brain, lung, lymph node, skin, bone and adrenal gland (Figure-1).

On pathological evaluation, unlike superficial angiosarcomas, deep tissue angiosarcomas present nested and clustered round cells with high nuclear grade and epithelioid appearance (2). For a definite diagnosis requires evaluation of immunohistochemistry stains such as factor 8 related antigen, CD 31, CD 34 and von Willebrand factor. CD 34 positivity is important for diagnosis of angiosarcomas (4). In our case, assessment of pathologic features, we detected malignant epithelial cells infiltrating fibroadipose tissue, pleomorphic epithelioid cells with large eosinophilic cytoplasm, Pan-CK-antibody formation against the membranes in some cells and CD 34 positivity in malignant cells (Figure-2). There is no standard treatment for angiosarcomas and most of the time patients couldn't take any treatment

because of rapid progression and late diagnosis. Surgery is the best option if patients are eligible for curative surgery (5). When compared with surgery with or without chemotherapy and radiotherapy, combined modalities have superior overall survival, 13 months ($P > 0.05$) compared to 7 months in patients, respectively (10). In a series, radiation-induced breast angiosarcomas treated with doxorubicin and paclitaxel, patients had higher response rates and longer progression-free survival (11). We started our patient with cisplatin and docetaxel treatment and zoledronic acid despite this she died one month after diagnosis. Angiogenic drugs may be hopeful but preliminary clinical experiences reported modest and conflicting results (11). Some phase II trials investigated the effect of anti-VEGF (such as bevacizumab) and tyrosine kinase inhibitors (such as pazopanib, sunitinib and sorafenib) however there is no superiority for progression-free survival and response rate, both of them still low (12).

Conclusion

Renal angiosarcomas are rare, aggressive and treatment-resistant malignant tumors. Early diagnosis for curative surgery is important for the patient, and chemotherapy is generally not effective, so that a new approach is needed. Targeted therapies may be successful for angiosarcomas due to vascular effects. Multicenter prospective studies are needed to understand and develop the correct treatment choice.

References

- [1] Burk J, Gerlach U, Baumann T, Langer M, Winterer JT. Epithelioid angiosarcoma of the scapula. *In Vivo*. 2010;24(5):783-6.
- [2] Babarovic E, Zamolo G, Mustac E, Strcic M. High grade angiosarcoma arising in fibroadenoma. *Diagn Pathol*. 2011;6:125.
- [3] Lin XY, Liu Y, Zhang Y, Yu JH, Wang EH. The co-expression of cytokeratin and p63 in epithelioid angiosarcoma of the parotid gland: a diagnostic pitfall. *Diagn Pathol*. 2012;7:118.
- [4] Ozkapu T, Gerceker Turk B, Ertam I, Akalin T. Radyoterapi sonrası kutanöz anjiosarkom gelişimi. *Ege Journal of Medicine* 2013;52(1):49-51.
- [5] Iacovelli R, Orlando V, Palazzo A, Cortesi E. Clinical and pathological features of primary renal angiosarcoma. *Can Urol Assoc J*. 2014;8(3-4):E223-6.
- [6] Mc CW, Pack GT. Malignant blood vessel tumors; a report of 56 cases of angiosarcoma and Kaposi's sarcoma. *Surg Gynecol Obstet*. 1950;91(4):465-82.

- [7] Mark RJ, Poen JC, Tran LM, Fu YS, Juillard GF. Angiosarcoma A report of 67 patients and a review of the literature. *Cancer*. 1996;77(11):2400-6.
- [8] Nguyen T, Auquier MA, Renard C, Cordonnier C, Saint F, Remond A. [Hemoptysis and spontaneous rupture of a primary renal angiosarcoma: a case report]. *J Radiol*. 2010;91(12 Pt 1):1313-7.
- [9] Maria F, Cristiana S, Mărgăritescu C, Claudia V. Gingival angiosarcoma: histopathologic and immunohistochemical study. *Rom J Morphol Embryol*. 2005;46(1):57-61.
- [10] Teo Z, Mauro S, Umberto S, Eduard B. Primary renal angiosarcoma: case report and review of world literature. *Tumori* 2011;97(4):6-9
- [11] Azzariti A, Porcelli L, Mangia A, Saponaro C, Quatrone AE, Popescu OS, et al. Irradiation-induced angiosarcoma and anti-angiogenic therapy: a therapeutic hope? *Exp Cell Res*. 2014;321(2):240-7.
- [12] Riedel RF. Targeted agents for sarcoma: is individualized therapy possible in such a diverse tumor type? *Semin Oncol*. 2011;38 Suppl 3:S30-42.