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Challenges in the treatment of angiosarcoma: a single institution experience

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Abstract

BACKGROUND: Angiosarcomas are rare tumors that carry poor prognosis. Because of insidious growth rate, the diagnosis is often difficult and delayed.

METHODS: Between 1990 and 2011, 72 (41 female, 31 male) patients were treated at our institution. Pathologic confirmation was obtained and multiple prognostic factors were evaluated for survival.

RESULTS: Forty-four cases were sporadic and 28 cases were secondary. In the sporadic group, 16 (36%) patients had increased sun exposure, while in the secondary group, the majority (n = 23, 82%) of patients had prior exposure to radiation. The latent period between radiation exposure and diagnosis was predictive of survival (P = .037). Presentation was delayed by more than 3 months in 41% of patients. The majority of men developed head and neck angiosarcomas (n = 15, 48.5%), while women developed breast angiosarcomas (n = 21, 51%). Median survival was prolonged in patients treated initially with surgery.

CONCLUSIONS: A delay in the diagnosis of angiosarcoma can affect survival. Clinical suspicion and prompt diagnosis are essential for successful multimodal therapy. Initial surgical resection with adjuvant chemotherapy provides survival advantage.

Angiosarcoma (AS) is a subtype of soft-tissue sarcoma that is considered to be of vascular or lymphatic endothelial cell origin.[1] These tumors are rare, generally multifocal, and carry a poor prognosis.[2] In the United States, the annual incidence of AS is approximately 2 to 3 cases per 1 million people.[3] Each year, less than 100 cases are diagnosed, which comprise approximately 1% to 5% of all sarcomas.[3,4,5,6]

AS is heterogeneous in nature and can originate in any location on the body. The most common primary sites include head and neck and breast, followed by the trunk, extremity, liver, and bone.[2,7,8] Most patients are diagnosed in the 6th decade of life with no sex-specific predisposition; however, the cutaneous form is seen most commonly among white men.[2,3,9] Because of its nature

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of insidious growth, initial diagnosis is often difficult and delayed.

Recently, with the introduction of targeted specific agents, there has been a renewed interest in the understanding of the pathogenesis of AS. However, despite significant advances in treatment strategies, the rate of recurrence remains high and therefore at present, there is no consensus on "ideal" management or sequencing of treatment. We aimed to evaluate our own experience at a tertiary referral center from 1991 to 2011 and performed analysis on the natural history, clinical presentation, diagnosis, clinical management, and outcomes in patients treated for AS at our institution.

Methods

This was an Institutional Review Board-approved retrospective study performed at our institution. All AS patients who presented at our institution over a period of 20 years, between 1991 and 2011, were included for consideration. Of these, 72 patients with confirmed pathologic diagnoses were selected and medical records were reviewed. Patient characteristics including age, sex, lag time between the initial presentation and diagnosis, location, presentation, risk factors, treatment, and survival were analyzed for the review.

Statistical analysis

Multiple prognostic factors were evaluated for disease-specific survival (DSS). The DSS was obtained using the Kaplan–Meier method, while the log-rank test and Cox regression were used for comparison between the different subgroups. Our study reviewed and compared different treatment modalities as well as the sequencing of these modalities used in treating these patients. The endpoints of our study were time to recurrence and DSS. Time to recurrence was calculated as the time elapsed from the date of diagnosis to the 1st recurrence detected. The DSS was calculated as the time elapsed from the time of diagnosis to death from the disease. The last follow-up communication was used for censuring data. All deaths from both known and unknown causes were censored in the survival analysis. A P value of less than .5 was considered significant during statistical analysis.

Results

Presentation

Between 1991 and 2011, 72 patients diagnosed with AS were treated at our institution. Of these, 31 patients were male (43%) and 41 were female (57%), with a median age of 65 years (range, 19 to 93 years). Patients presented with a range of initial clinical symptoms (Table 1). Among these, the presence of a mass (29.2%) and cutaneous lesion (27.8%) were the most common, while pain (4.2%) and edema (4.2%) were less common symptoms. Other symptoms included bruise/rash, abdominal discomfort, weakness, weight loss, bleeding, blurred vision, and arrhythmia. The mass and cutaneous lesions were differentiated based on the patient description that mass was discretely palpable while cutaneous lesions were not. A multitude of techniques including excision and incisional biopsy, core-needle aspiration, fine-needle aspiration, and punch biopsy were used to confirm the diagnosis.

We observed an interval lag time (range, 0 to 36 months) between the onset of symptoms and a definitive pathologic diagnosis. Nearly 41% of patients presented to us with a delay of greater than 3 months from symptoms to pathologic diagnosis. We attribute this delay to the rare nature of this disease, which likely contributed to the delay in diagnosis secondary to the lack of referral to appropriate

Table 1 Patient presentation, stage, and treatment characteristics

	Number (%)
Patients	
Age, median (range in years)	65 (19–93)
Male	31 (43%)
Female	41 (57%)
Presentation	
Obvious mass	21 (29.2%)
Cutaneous lesion	20 (27.8%)
Bruise/rash	8 (11.1%)
Abdominal discomfort	6 (8.3%)
Pain	3 (4.2%)
Edema	3 (4.2%)
Other (weakness, weight loss, bleeding, radiologic finding, blurred vision, and arrhythmia)	11 (15.2%)
Initial biopsy	
Excision	23 (31.9%)
Incision	11 (15.3%)
Punch	16 (22.2%)
Core	9 (12.5%)
Fine-needle aspiration cytology	4 (5.6%)
Shave	2 (2.8%)
Not specified	7 (9.7%)
Etiology	
Sporadic	28 (39%)
Secondary	44 (61%)
Stage	
I	14 (25%)
II	16 (28.6%)
III	14 (25%)
IV	12 (21.4%)
Initial treatment	
Surgery	43 (59.7%)
Chemotherapy	20 (27.8%)
Radiation	7 (9.7%)
Other (comfort care)	2 (2.8%)