

**Research Article****A PROSPECTIVE CLINICOPATHOLOGICAL STUDY OF CUTANEOUS ANGIOSARCOMA IN A TERTIARY CARE HOSPITAL****Dr.Sandhya Rani Sahoo<sup>1\*</sup>, Dr.Pragnya Parimita Nayak<sup>2</sup>, Dr.Shushruta Mohanty<sup>3</sup>**<sup>1\*</sup>Assistant Professor, Department of Pathology, S.C.B. Medical College and Hospital, Cuttack, Odisha.<sup>2</sup>Assistant Professor, Department of Pathology, Veer Surendra Sai Institute of Medical Sciences and Research (VIMSAR), Burla, Odisha.<sup>3</sup> Associate Professor, Department of Pathology, S.L.N. Medical College & Hospital, Koraput, Odisha.**Corresponding Author: Dr.Sandhya Rani Sahoo****Assistant Professor, Department of Pathology, S.C.B. Medical College and Hospital, Cuttack, Odisha.****Received date: 20-March-2026, Accepted date: 05-April-2026, Date of Publication: 06-April-2026.****Abstract**

**Introduction:** Cutaneous Angio-Sarcoma (AS) is an aggressive malignant mesenchymal vasoformative neoplasm accounting for 5 % of malignant skin tumours and less than 1 % of all sarcomas. They carry a poor prognosis with high local recurrence rate. Angiosarcomas can occur at any site in the body, most common site being head and neck followed by breast, viscera and bones. Clinically, cutaneous angiosarcoma often presents as ill-defined bruised, purplish, or erythematous patches that may resemble benign conditions such as ecchymosis, cellulitis, or hemangioma. This nonspecific presentation frequently leads to delayed diagnosis and treatment. As the disease progresses, lesions may become nodular, ulcerated, and prone to bleeding, further complicating management.

**Materials and methods:** This is a prospective study, analysing all patients who were histologically proven as angiosarcoma in Department of Pathology in a tertiary care hospital between the period of January 2025

to December 2025. It recorded clinical and histopathological parameters for each of the 64 patients including demographic features (age, sex, location), anatomic location, size, type (primary, post radiation, lymphedema associated), histologic pattern [vasoformative / solid /mixed], predominant cell type [epithelioid / spindle], presence / absence of necrosis, mitosis, tumour infiltrating lymphocytes, immunohistochemical stains [CD31 & CD34] and follow up.

**Results:** A total of 120 cases of angiosarcomas were diagnosed in our department during this one year study period. Among those, 64 cases were cutaneous angiosarcoma with an equal distribution of males and females aged between 44-80 years (mean = 60.4 years) with tumour size ranging from 3-10 cm (mean = 4 cm). Vast majority (62 cases) of the cases were primary angiosarcoma of head and neck of elderly and the remaining two cases were angiosarcoma of lower limb of which one was preceded by chronic

filarial lymphedema. All 64 patients underwent wide local excision with adjuvant chemotherapy (Ifosfamide and Adriamycin) for 8 cases. Of the 28 patients with follow up, 20 died due to their disease severity despite receiving multiple cycles of chemo radiation and 8 cases survived. Among the cases who survived, one was patient with angiosarcoma following chronic filarial lymphedema.

**Conclusion:** Larger tumour size & older age group were associated with worse outcome. All our 64 cases very well fit with the angiosarcoma of scalp & face in elderly persons as described in the literature. This disease has unique characteristics compared to angiosarcoma in other locations.

**Key Words:** Cutaneous Angio-Sarcoma, cellulitis, hemangioma, chronic filarial lymphedema.

### INTRODUCTION

Cutaneous Angio-Sarcoma (AS) is an aggressive malignant mesenchymal vasoformative neoplasm accounting for 5 % of malignant skin tumours and less than 1 % of all sarcomas.<sup>1</sup> They carry a poor prognosis with high local recurrence rate. Angiosarcomas can occur at any site in the body, most common site being head and neck followed by breast, viscera and bones. Clinically, cutaneous angiosarcoma often presents as ill-defined bruised, purplish, or erythematous patches that may resemble benign conditions such as ecchymosis, cellulitis, or hemangioma. This nonspecific presentation frequently leads to delayed diagnosis and treatment. As the disease progresses, lesions may become nodular, ulcerated, and prone to bleeding, further complicating management.<sup>2</sup>

Histopathologically, angiosarcoma demonstrates a spectrum of differentiation ranging from well-formed vascular channels to poorly differentiated solid sheets of malignant endothelial cells. Immunohistochemical markers such as CD31, CD34, and ERG are crucial for confirming endothelial origin and differentiating angiosarcoma from other malignancies.<sup>3</sup>

Several risk factors have been implicated in the development of cutaneous angiosarcoma, including chronic lymphedema (Stewart–Treves syndrome), prior radiotherapy, and environmental exposures. Despite advances in diagnostic techniques and therapeutic modalities, including surgery, radiotherapy, and chemotherapy, the overall survival remains low, with five-year survival rates reported between 20% and 35%.<sup>4</sup>

Cutaneous angiosarcoma occurs in 3 clinical settings namely idiopathic angiosarcoma of head and neck, angiosarcoma associated with chronic lymphedema and post irradiation angiosarcoma. Idiopathic angiosarcoma of head and neck of elderly are distinct from other types of angiosarcoma.

The clinical course includes local recurrences followed in some cases by pulmonary and lymph node metastasis. Differential diagnosis for cutaneous angiosarcoma includes haemangioma in better differentiated lesions, Kaposi sarcoma for those with predominantly spindle cell component and carcinoma or amelanotic melanoma for poorly differentiated types. It's important for the pathologist to give a correct diagnosis, as misdiagnosis may

result in inappropriate management and incorrect assessment of prognosis.<sup>5</sup>

This study has been conducted to understand the clinicopathological features, treatment response and clinical outcomes of cutaneous angiosarcoma.

**MATERIALS AND METHODS**

This is a prospective study, analysing all patients who were histologically proven as angiosarcoma in Department of Pathology in a tertiary care hospital between the period of January 2025 to December 2025.

It recorded clinical and histopathological parameters for each of the 64 patients including demographic features (age, sex, location), anatomic location, size, type (primary, post radiation, lymphedema associated), histologic pattern [vasoformative / solid /mixed], predominant cell type [epithelioid / spindle], presence / absence of necrosis, mitosis, tumour infiltrating lymphocytes, immunohistochemical stains [CD31 & CD34] and follow up.

All of the necessary information and relevant images were obtained from the

institute medical records library and photo archives of the Department of Pathology, Dermatology & Radiotherapy.

**RESULTS**

A total of 120 cases of angiosarcomas were diagnosed in our department during this one year study period. Among those, 64 cases were cutaneous angiosarcoma with an equal distribution of males and females aged between 44-80 years (mean = 60.4 years) with tumour size ranging from 3-10 cm (mean = 4 cm). Vast majority (62 cases) of the cases were primary angiosarcoma of head and neck of elderly and the remaining two cases were angiosarcoma of lower limb of which one was preceded by chronic filarial lymphedema. All 64 patients underwent wide local excision with adjuvant chemotherapy (Ifosfamide and Adriamycin) for 8 cases. Of the 28 patients with follow up, 20 died due to their disease severity despite receiving multiple cycles of chemo radiation and 8 cases survived. Among the cases who survived, one was patient with angiosarcoma following chronic filarial lymphedema.

S.No	Clinical types	Number
1	AS of head & neck of elderly	62
2	AS associated with chronic lymphedema	4
3	Post irradiation AS	0
4	total	64

**Table 1: Clinical types**

Grade	High grade	75%
	Low grade	25%
Pattern	Vasoformative	66.67%
	Solid	25%
Cell type	Spindle	62.5%

	Epithelioid	37.5%
IHC	CD31	100%
	CD34	100%

**Table 2: Histologic features**

	<b>Our study 64 cases</b>	<b>Morgan et al 47 Cases</b>	<b>Pawlik et al 29 Cases</b>
Age	60.4 years	75.1 years	71 years
M:F	1:1	36:11	18:11
Size	4 cm	5.3 cm	4 cm
Multiple	28/64	-	12/29
High Grade	75%		76%
Low Grade	25%		24%
Vasoformative	66.67%	64%	70%
Solid	25%	25%	30%
Mixed	8.33%	21%	0

**Table 3: Comparison with Studies in Literature**

### DISCUSSION

Cutaneous AS is an extremely rare tumour as obvious from the result that 64 cases were found over one yrs. Overall, it has a strong predilection to elderly males who present with erythematous oedema on head and neck area called idiopathic primary angiosarcoma of head and neck of elderly, also known as Wilson-Jones angiosarcoma. In our study the mean age was 60 years with an equal sex distribution.<sup>6</sup> The most common site in our study was scalp, as would be expected. Idiopathic cutaneous angiosarcomas of head and neck of elderly are distinct from angiosarcomas in other locations. Their increased risk for multiplicity, recurrences, metastasis to brain parenchyma and propensity to spread microscopically far beyond the grossly visible margins make the achievement of surgically free margins a daunting task. Older age group and larger size are particularly associated with grave prognosis.<sup>7,8</sup>

Post radiation AS is on the rise because breast cancers are being treated with radiation as opposed to radical mastectomy. But none of our cases could be attributed to prior radiation. Lymphedema associated AS, also called Stewart-Treves syndrome, is the least common form of the disease. Chronic lymphedema is one of the identified risk factors in angiosarcoma, with proteins in lymph fluid inducing immunosuppression & promotion of vascular oncogenesis. One of our cases that involved the extremity was a 61-year-old male with filarial lymphedema associated angiosarcoma.<sup>9</sup> A wide variety of histopathological features have been described, the most characteristic being anastomosing vessels lined by atypical neoplastic spindle or epithelioid cells dissecting through the collagen bundles.<sup>10</sup> High grade lesions show an undifferentiated solid pattern, increased mitosis and extensive necrosis as described in FNLCC

grading of soft tissue sarcomas. Table III shows comparison with studies in literature

### CONCLUSION

Cutaneous angiosarcoma is a rare but highly aggressive vascular malignancy with a predilection for the elderly population, particularly involving the head and neck region. This prospective clinicopathological study highlights the importance of early clinical suspicion, as the lesion often presents with nonspecific features that can mimic benign conditions, leading to delayed diagnosis.

Histopathological examination remains the gold standard for definitive diagnosis, with immunohistochemical markers playing a crucial supportive role. The study emphasizes that tumor size, depth of invasion, and presence of metastasis are significant prognostic factors influencing patient outcomes.

Larger tumour size & older age group were associated with worse outcome. All our 64 cases very well fit with the angiosarcoma of scalp & face in elderly persons as described in the literature. This disease has unique characteristics compared to angiosarcoma in other locations.

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