MEDDOCS Open Access Publisher

Annals of Nursing and Health Care

Open Access | Case Report

Clinically Significant Blood Loss Related to Angiosarcoma

Mina Faheim[1]; Darlene Boudreau[2]; Kelly A Dakin-Hache[3]; Anne Marie R Krueger-Naug[4]*

[1]Department of Family Medicine, Dalhousie University, Halifax, Nova Scotia, Canada.

[2]Department of Occupational Therapy, Dalhousie University, Halifax, Nova Scotia, Canada

[3]Department of Pathology, Dalhousie University, Halifax, Nova Scotia, Canada.

[4]Department of Medicine, Dalhousie University, Halifax, Nova Scotia, Canada.

***Corresponding Author(s): Anne Marie Krueger-Naug**

Division of Palliative Medicine, Department of Medicine, Dalhousie University, Halifax, Nova Scotia, Canada.
Email: annemarie.krueger-naug@nshealth.ca

Received: Feb 01, 2023

Accepted: Mar 09, 2022

Published Online: Mar 16, 2023

Journal: Annals of Nursing and Health Care
Publisher: MedDocs Publishers LLC

Online edition: http://meddocsonline.org/

Case Report

A 70-year-old female presented to the emergency department with a two-week history of progressive weakness, presyncope and general malaise. She had recently received targeted radiotherapy to a solitary brain lesion (metastatic versus new concurrent primary) and had been on dexamethasone at tapering doses for six weeks. There was clinical history of three distinct cancer diagnoses: cT1N0 poorly differentiated adenocarcinoma of the lung (3 months prior, Feb 2021); cT1N1 clear cell carcinoma of the kidney (5 months prior, December 2020); and pT2N3a invasive ductal carcinoma (not otherwise specified, grade 2) of the right breast with expression of ER/PR and without HER2 (15 years prior, 2006). Of note, the remote breast carcinoma was treated with lumpectomy, lymph node dissection, radiation, and chemotherapy with long-standing mild lymphedema of the right arm.

Investigations in the emergency department indicated a hemoglobin of 71 g/L (MCV 93fL, RDW 20%) with low Platelets at 142 x10(9)/L, nucleated ed red blood cells/100 WBC elevated at 2.5 % and significantly elevated reticulocytes at 8.07 % (192.9 x10(9)/L). Hemolysis work-up indicated normal INR ,1.0, elevated haptoglobin 3.38 g/l, total bilirubin 12.2 umol/L and Fibrinogen 3.89 g/L, LDH elevated, 374 U/L. Iron studies were largely normal (iron, 10.05 umol/L, %sat 21, TIBC 46.75 umol/L), creatinine 56 umol/L, urea slightly elevated at 10.0 mol/L, sodium 139 mmol/L, potassium 3.9 mmol/l, TSH 2.79, CK 7, Ferritin 329.5. The CBC results support a clinical interpretation of a leukoerythroblastic reaction without the presence of schistocytes. The urinalysis was negative for blood, ketones, glucose, protein, nitrites, and leukocyte esterase. There was no reported blood loss other than progressive “bruising” and pain of the right arm - see **Figure 1**.

Cite this article: Faheim M, Boudreau D, Dakin-Hache KA, Krueger-Naug AMR. Clinically Significant Blood Loss Related to Angiosarcoma. Ann Nurs Health Care. 2023; 1(1): 1001.

Blood loss was interpreted as multifactorial; 1. Imaging showed enlargement of the right frontal lobe lesion suggesting the possibility of intratumoral hemorrhage; 2. Recent steroid therapy without concurrent proton pump inhibitor protection suggested the possibility of occult sub-acute gastrointestinal blood loss; 3. Progressive bruising of the lymphadematous arm.

The patient was treated with intravenous pantoloc for approximately 48h and received two units of pRBCs which increased her hemoglobin to 92 g/l. Her symptoms improved, and she was discharged home with oral protein pump inhibitor therapy. The patient did not undergo upper endoscopy or colonoscopy procedures.

Ten days after the original transfusion, hemoglobin was 65 g/l, with a return of symptoms of malaise and right arm pain and deeper bruising. On the day of repeat transfusion (3 days later) hemoglobin had dropped further to 56 g/L. There was no evidence of frank gastrointestinal blood loss (hematemasis, hematochezia, or melena).

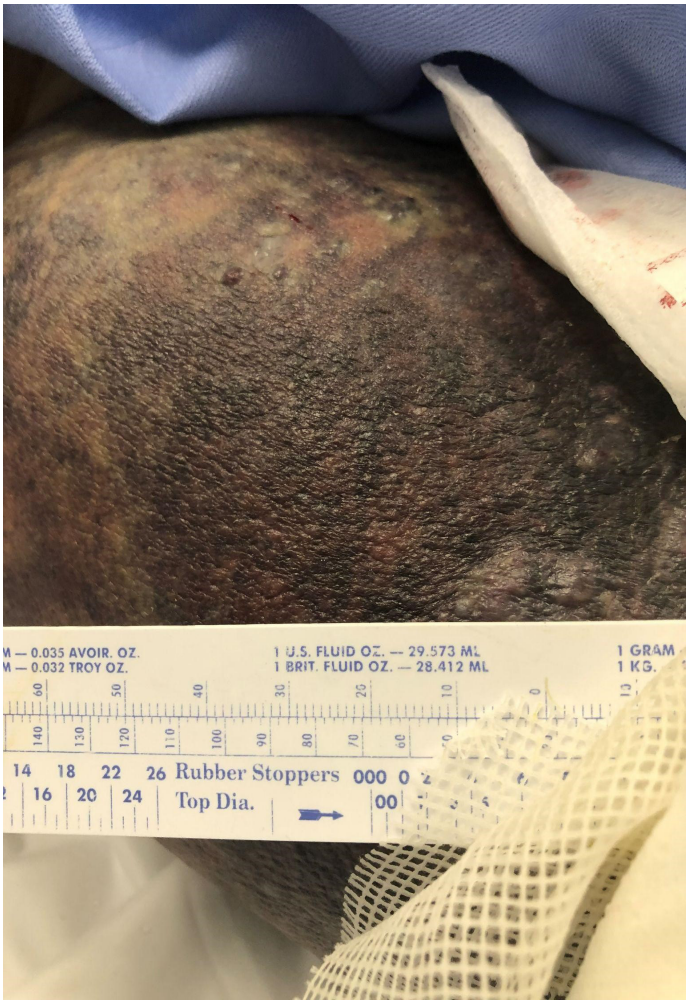

Figure 1: Profound ecchymosis of the right forearm.

She was admitted to the Palliative Care Unit for pain and symptom management with therapeutic goals focused on improving comfort. Review of the electronic record at that time indicated longstanding (albeit mild) lymphedema related to the lymph node dissection for breast carcinoma. She had been recently discharged from the "lymphedema clinic" due to "worsening ecchymosis, despite lymphatic volume reduction" - see **Figure 2**.

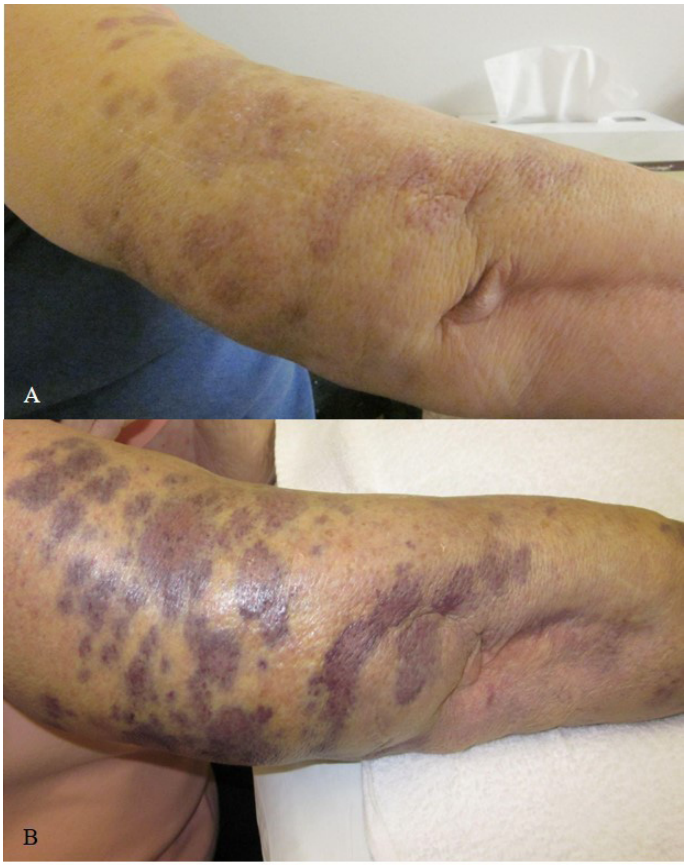

Figure 2: Upper arm lymphedema with progressing ecchymosis (**A** - Initial presentation **B** - One month later).

On assessment by the lymphedema nurse while on the Palliative Care Unit, the rapid progression of ecchymosis, along with a history of chronic lymphedema, led to a suspected diagnosis of angiosarcoma (chronic lymphedema-associated angiosarcoma / Stewart-Treves syndrome) versus progressing metastatic disease from her known concurrent lung and or renal cancers.

The patient was deemed too unwell for further active treatment (surgery, chemotherapy) and the goal of care focused on comfort and end of life management with no further transfusions. The patient and her substitute decision maker (SDM) consented for an autopsy to be performed upon her death. Unfortunately, the patient died at a time when laboratory resources were being diverted to the massive influx of COVID-19 pandemic testing. Instead, the authors performed a limited punch biopsy (within 24h postmortem) with the consent of the SDM. The specimen was processed by the pathology department in the usual fashion with 24 hours formalin fixation, routine processing, and paraffin embedding.

The H&E sections show replacement of the dermis and subcutis by cytologically malignant epitheliod cells arranged in hobnail fashion along complex anastomosing vascular channels with the formation of nests and micropapillary projections. The background was extensively hemorrhagic. The morphological appearance, and the immunohistochemical evaluation were in keeping with a diagnosis of angiosarcoma. In view of the clinical history of chronic lymphedema, the findings were compatible with chronic lymphedema-associated angiosarcoma / Stewart-Treves syndrome.

Discussion

Chronic lymphedema-associated angiosarcoma (Stewart-Treves syndrome) is a rare but aggressive soft tissue malignancy reported to occur in <0.5% of women between 5 and 15 years

post radical mastectomy with lymphedema [1-4]. With chronic lymphedema-associated angiosarcoma (and other secondary angiosarcomas), there are a number of genetic mutations (PLCG1 or KDR mutations) and gene amplifications (for example, MYC gene amplification with or without FLT4 coamplification) that can occur, and the tumor can exhibit vascular endothelial (D2-40 negative) or lymphatic endothelial (D2-40 positive) differentiation by immunohistochemistry [5]. In this case, the tumor expressed D2-40 suggesting lymphatic differentiation.

Clinically, angiosarcoma presents as progressive ecchymosis which may be associated with an underlying mass or multiple nodules. The primitive vessels in angiosarcoma tend to be poorly formed resulting in a background of extensive hemorrhage (features demonstrated in figure 1). Hemorrhage can result in rapid tumor enlargement and progressive anemia. Patients can experience significant pain associated with angiosarcoma, attributed to dissection of the soft tissue by neoplastic vascular channels, rapid tissue extension due to hemorrhage, and perineural / intraneural invasion. Treatment can include chemo/radiation as an adjuvant to local excision, wide excision, or amputation with medial survival reported of 19 months, with rapid progression [3,6]. This case is a reminder to consider a diagnosis of angiosarcoma in patients with profound refractory anemia in the setting of chronic lymphedema. Increased pain and rapid skin changes with bruising and nodularity are indications for biopsy to ensure timely diagnosis which may result in pursuit of further treatment options to slow the spread of disease.

Key points

1. Chronic lymphedema associated angiosarcoma is a rare neoplasm that can develop many years post radical mastectomy with lymphedema.
2. Progressing ecchymosis and increasing pain in the lymphedematous arm should trigger a request for biopsy as there may be treatment available (including chemotherapy, radiation and excision).
3. Cutaneous and subcutaneous tissue bleeding caused by destruction of endothelial cells as is the case with chronic lymphedema associated angiosarcoma can be a source of clinically significant anemia.

Competing interests

None declared.

The authors have obtained informed consent from the substitute decision-maker for the use of the content.

References

1. Stewart FW, Treves N. Lymphangiosarcoma in post-mastectomy lymphedema. CANCER. 1948; I: 64-81.
2. Eby CS, Brennan MJ, Fine G. Lymphangiosarcoma: A lethal complication of chronic lymphedema, report of two cases and review of the literature. Arch Surg. 1967; 94: 223-230.
3. Chung KC, Kim HJE, Jeffers LLC. Lymphangiosarcoma (Stewart-Treves Syndrome) in Postmastectomy Patients. J Hand Surgery. 2000; 25A: 1163-1168.
4. Amy E. Rivere, V. Suzanne Klimberg, The breast, (5th edition), 2018.
5. Kahn HJ, Baily D, Marks A. Monoclonal Antibody D2-40, a new marker of lymphatic endothelium, reacts with Kaposi Sarcoma and a subset of angiosarcomas, Lab Invest. 2002; 15: 344.
6. Sharma A, Schwartz RA. Stewart-Treves syndrome: pathogenesis and management. J Am Acad Dermatol. 2012; 67: 1342-1348.