

# MYELOID SARCOMA PRESENTING AS SKIN NODULES IN SULAYMANIYAH CITY



Kani Delawer <sup>a</sup>, Hisham Arif Getta <sup>b</sup>, and Dana N. Muheadeen <sup>c</sup>

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## INTRODUCTION

Myeloid sarcoma is a rare malignant myeloid tumour known as granulocytic sarcoma or chloroma. As not all myeloid leukaemias are derived from granulocytes, the preferred term is myeloid sarcoma instead of granulocytic sarcoma and chloroma, consisting of the myeloid blast with or without maturation. Myeloid sarcoma may occur de novo or precede or be associated with acute or chronic myeloid leukaemias, or represent a blast transformation of myeloproliferative disorders, myelodysplastic syndromes, or it may represent a relapsed state in patients diagnosed previously as AML regardless of blood or BM findings. It is more common in adults between 45 and 55 years of age. Myeloid sarcoma can involve any body site other than the bone marrow that totally or partially effaced the tissue architecture. The most affected sites are lymph nodes, skin, and bones <sup>(1)</sup>. Skin, soft tissues, bone, lymph nodes, GIT, and testis are common sites to be involved <sup>(2)</sup>. Occurrence in the other sites like skull bones, orbit, and paranasal sinuses is unusual <sup>(3)</sup>. The pathogenesis of this sarcoma is believed to be an aberrant expression of homing signals for the leukemic blasts on extramedullary sites compared to bone marrow.

**Keywords:** *Myeloid sarcoma, Skin nodule, AML.*

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<sup>a</sup> Dept. of Hematopathology, Hiwa Cancer Hospital, Ministry of Health, Kurdistan Region, Iraq.

<sup>b</sup> Dept. of Pathology. College of Medicine, University of Sulaimani, Kurdistan Region, Iraq.  
Correspondence: [hisham.getta@univsul.edu.iq](mailto:hisham.getta@univsul.edu.iq)

<sup>c</sup> Dept. of Pathology, Shorsh General Hospital, Hiwa Cancer Hospital, Ministry of Health, Kurdistan Region, Iraq.

## CASE PRESENTATION

A thirty-nine-year-old Kurdish female patient presented with multiple painless nodules on the back, breast, and face for four months; she denied fever. Physical examination showed multiple red nodules measuring 2-4 mm on the back (Figure 1).

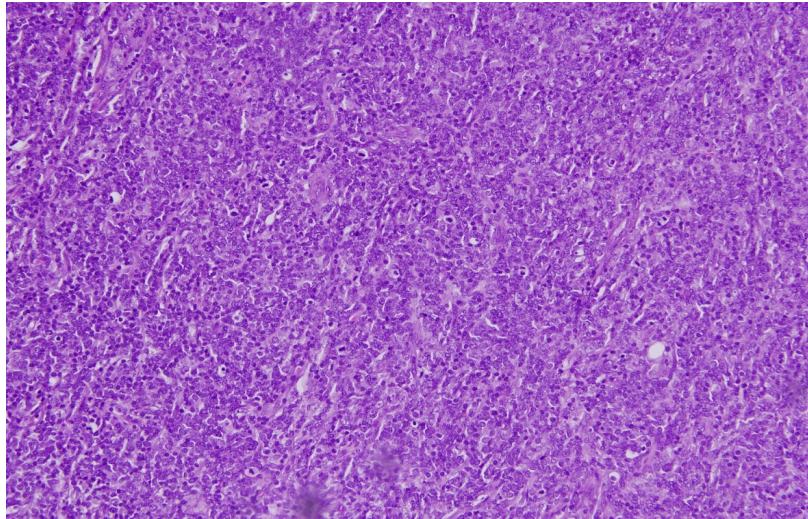
There was no hepatomegaly and splenomegaly. The complete blood count revealed haemoglobin of 11.5g/dl, platelets of  $349 \times 10^3/\text{mm}^3$ , and a white blood cell count of  $4.2 \times 10^3/\text{mm}^3$ . Bone marrow biopsy showed cellularity of 55% with normal morphology, and no excess blast cells were seen. Fine needle aspirate from nodule shows 70% blast cells, 10% lymphocytes and 20% granulocytes. Flow Cytometry analysis done for FNA revealed blast cells with positive CD33, CD34, CD7 and CD HLA-DR, which favour myeloblast cells. Cutaneous biopsy revealed complete effacement of biopsy tissue by blast cells diffuse infiltration (Figure 2). The immunohistochemical study was positive for CD43, lysozyme, and myeloperoxidase and was negative for CD3, CD20, and CD30, confirming the diagnosis of myeloid sarcoma (Figure 3).

## DISCUSSION

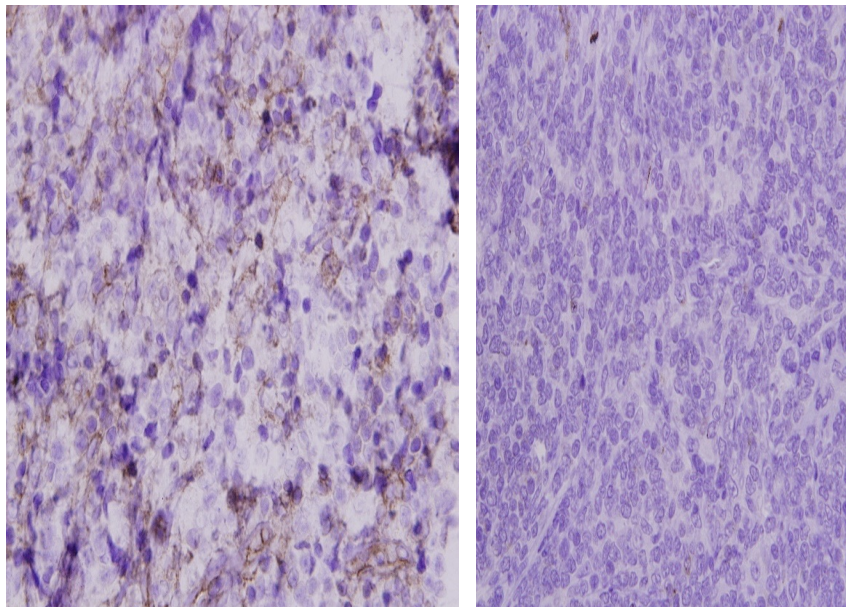
Isolated MS is rare, with only 1.4–9.0% of AML patients reported to develop MS<sup>(4)</sup>. Kitagawa et al. reported that the interval between the diagnosis of MS and the occurrence of AML varied from 0.5 to 24 months in patients with initial MS, although in our case is isolated sarcoma<sup>(5)</sup>. The male/female ratio is 1.2:1, and the median age was 56 (range one month to 89 years)<sup>(6)</sup>. In the last ten years, there has been a dramatic improvement in the laboratory facilities at Hiwa Cancer Hospital in Sulaymaniyah City, one of the provinces of the Kurdistan region of Iraq, which has improved the diagnostic process for haematological diseases; this is the first case diagnosed in this city using laboratory facilities, including flow cytometry and immunohistochemistry. Tumour is rare and sometimes misdiagnosed<sup>(5)</sup>, which is probably why such tumours were not diagnosed in this city, especially since the facilities for proper diagnoses have been available only for the last ten years. Immunohistochemical examinations (e.g., CD68/KP1, CD33, CD34, CD117, and MPO) are performed to characterize the MS<sup>(6)</sup>. In our case, FNA Flow cytometry analysis and MPO in immunohistochemistry were useful for establishing an accurate diagnosis.



Figure 1. Myeloid sarcoma nodules in the back.



**Figure 2. Myeloid sarcoma pathology.**



**Figure 3. Myeloid sarcoma with immunohistochemical stain.**

**Table 1. Red blood cell parameters.**

<b>BCs Parameter</b>	<b>Value</b>	<b>Normal range</b>	<b>Normal range</b>
<b>RBCs count</b>	3.91	3.92-5.13	million cells/mcL
<b>HCT</b>	34	35.5-44.9	percent
<b>Hb</b>	11.5	11.6-15.0	grams/dL
<b>MCV</b>	87	80-100	fl
<b>MCH</b>	29.5	27.5 - 33.2	picograms
<b>MCHC</b>	33.9	33.4-35.5	(g/dL)
<b>RDW</b>	121.1	12.2 to 16.1	percent

**Table 2. Leucocyte parameters.**

Leucocytes	Value	Normal range	
Neutrophils	2800	1500-7000	per microliter
Lymphocytes	1300	1000-4000	per microliter
Monocytes	450	200-800	per microliter
Eosinophils	120	100-500	per microliter
Basophils	25	00-200	per microliter

**Table 3. Platelets parameters.**

Platelets parameters	Value	Normal range	
Platelets count	349000	150,000 - 450,000	per microliter
PDW	13.2	10.0-17.9	Percentage
PCT	0.34	0.20-0.36	Percentage
MPV	9.8	8-12	femtoliters

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