Case Report

PAINLESS LUMP IN THE BREAST–AN UNUSUAL PRESENTATION OF CHLOROMA

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INTRODUCTION

Chloroma (also known as granulocytic sarcoma or myeloid sarcoma) is a rare solid extramedullary tumour composed of immature granulocytic cells. It was first described in 1811 by Burns[1] and named "chloroma" by King[2] in 1853 because of its green color. Its relationship with leukemia was later established in 1893[3].
This is an uncommon complication of acute and chronic myeloid leukemia and may appear at any time during the course of the disease. Sometimes patients of acute myeloid leukemia can present with tumours in other areas like the spinal cord, maxilla, eye etc. We are reporting a case of chloroma who presented with a painless lump in the breast and was diagnosed when she was referred for fine needle aspiration cytology (FNAC).

CASE REPORT

A 22 year old female presented with a lump in her right breast in the subareolar region. It had been present for the past 6 months. The patient had noticed it accidentally and she did not bother about it for a few months, but the lump had gradually increased in size. She consulted a surgeon who referred her for FNAC of the swelling.

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The lump measured 4.0×3.0 cm. The skin over it was normal. It was mobile and non tender. FNAC was done. An enlarged lymph node was also palpable in her right axilla. It measured 1.5×1.5 cm. FNAC of this was also done. A lymph node was also palpable in the inguinal region but was small in size. On account of enlargement of multiple lymph nodes a peripheral blood smear was also taken.
Smears from the breast lump (Figure 1 and 2) and from the axillary nodule revealed large cells with abundant cytoplasm and some of these cells contained granules. The peripheral smear (Figure 3) revealed the presence of blast cells which were 70% of the total. Some of the blast cells showed auer rods (Figure 4). Platelets were also reduced on the smear. As the peripheral film showed blast cells a bone marrow was advised.
The bone marrow (Figure 5) was aspirated from posterior iliac crest and showed hypercellular smears and cell trails. Erythropoeisis, myelopoeisis and megakaryopoesis were suppressed. The smear was diffusely infiltrated by blast cells which comprised of 90% of the nucleated cells. Most of the blast cells had abundant cytoplasm showing scanty granules. Some of the blast cells showed Aeur rods. Sudan B black (Figure 6) was done for confirmation of the suspected diagnosis. The picture was consistent with acute myeloid leukemia. It was graded to be M1 according to the FAB classification.

DISCUSSION

The word *chloroma* is derived from the Greek word choloros, as the tumours had a green tinge due to the presence of myeloperoxidase. It is not essential that all chloromas are green. The other synonyms are granulocytic sarcoma, extramedullary myeloid tumour and myeloblastoma. The tumour may rarely precede the onset of leukemia by many months[4] but usually it is found during the course of the disease or even during the remission. Chloromas are rare lesions with an incidence of 3-4.7% of the chronic myeloproliferative disorders[5].

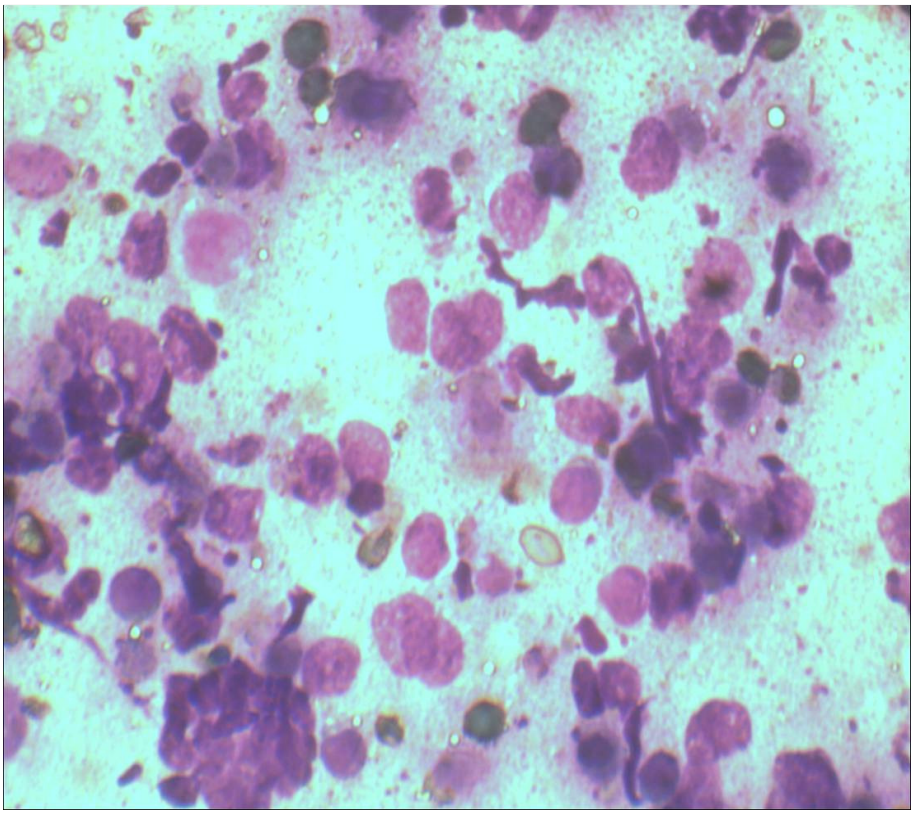

Figure 1. FNAC of the breast lump (Low power view)

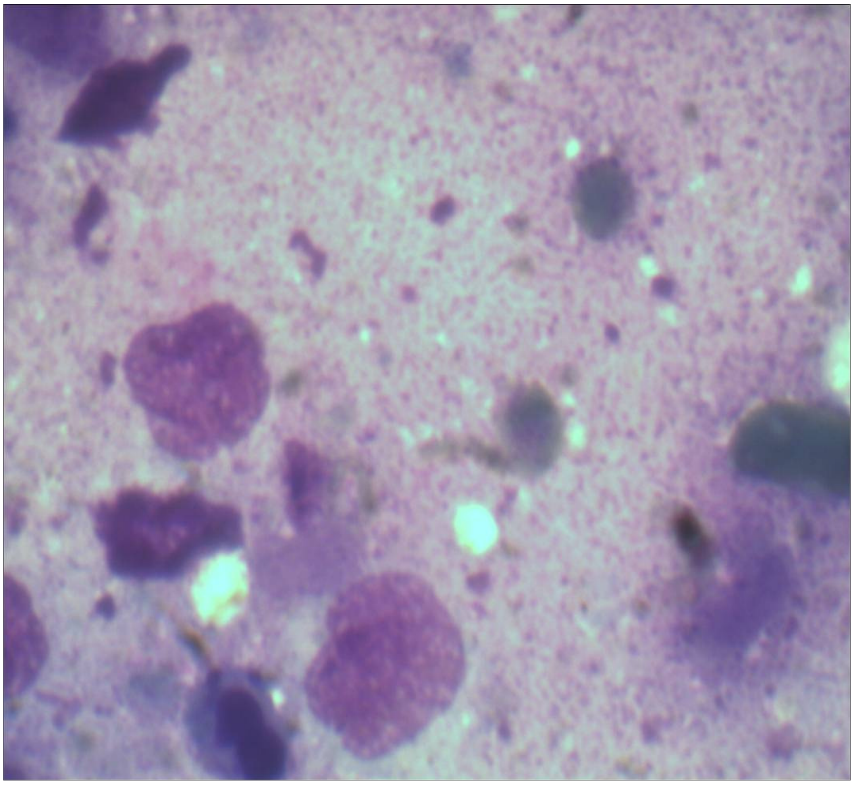

Figure 2. FNAC of the breast lump (High power view)

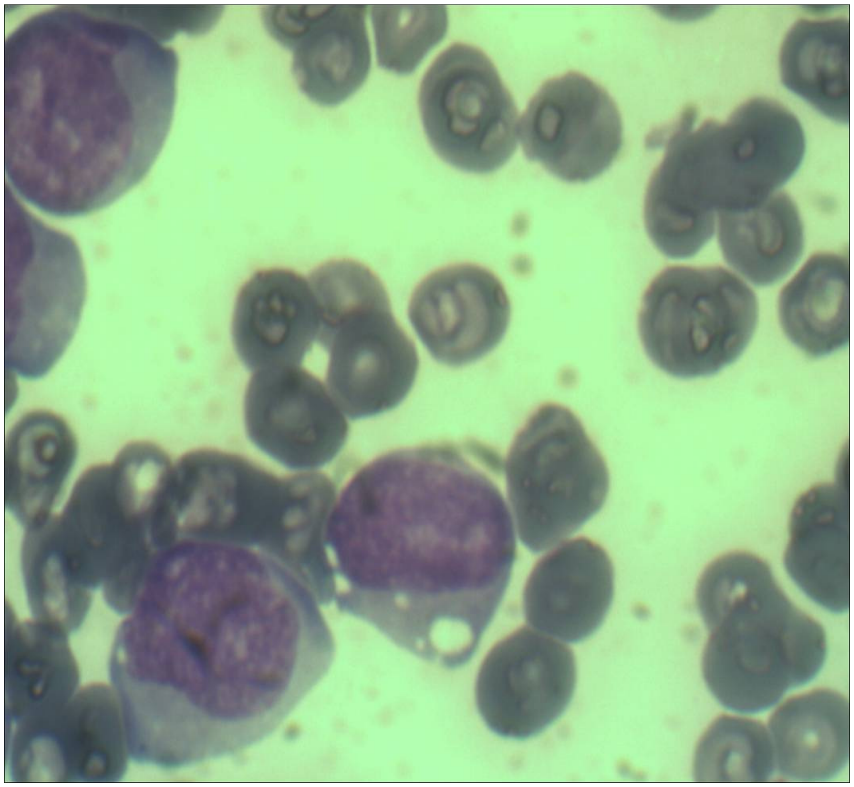

Figure 3. Peripheral film of the patient (High power view)

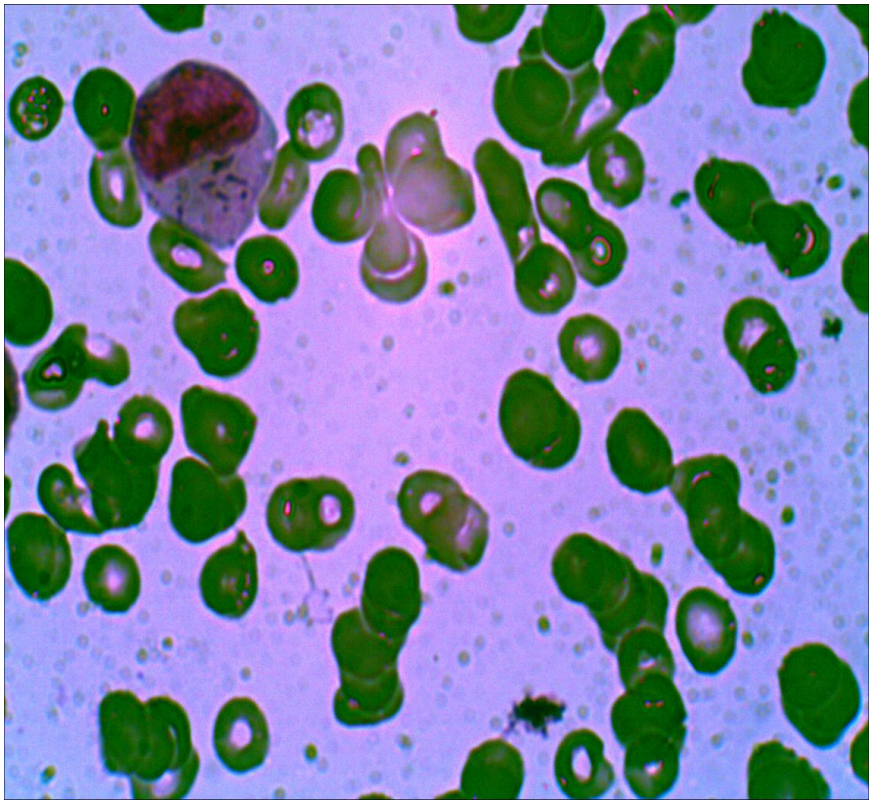

Figure 4. Granules and auer rod in blast cell

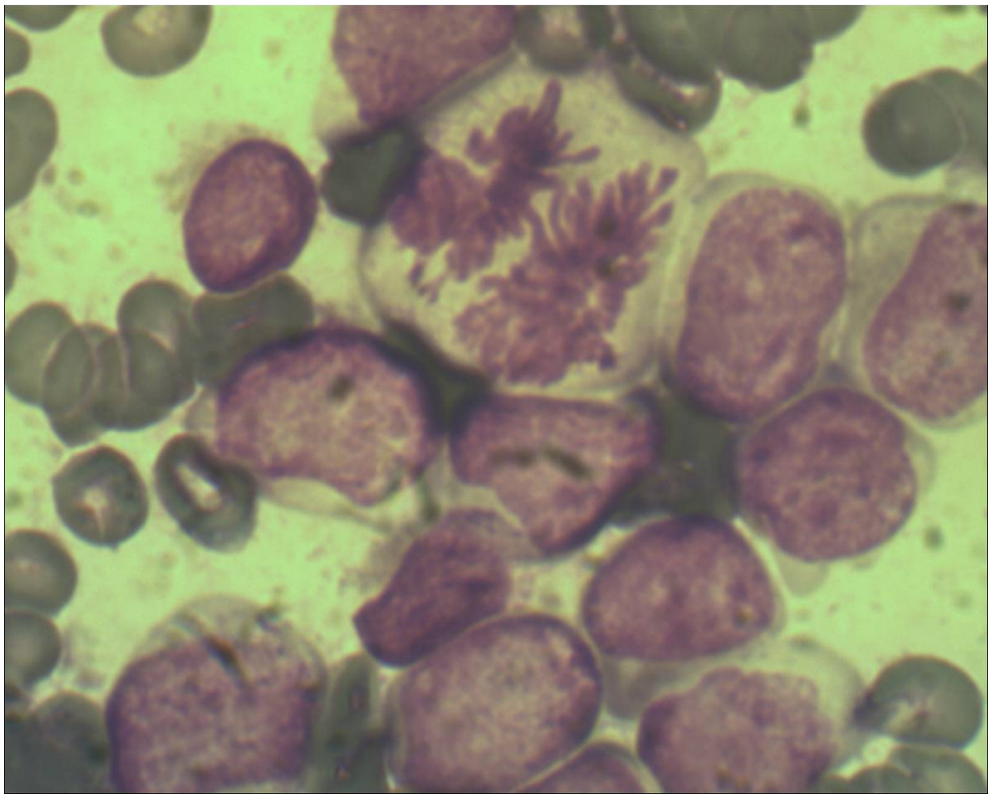

Figure 5. Bone marrow of the patient

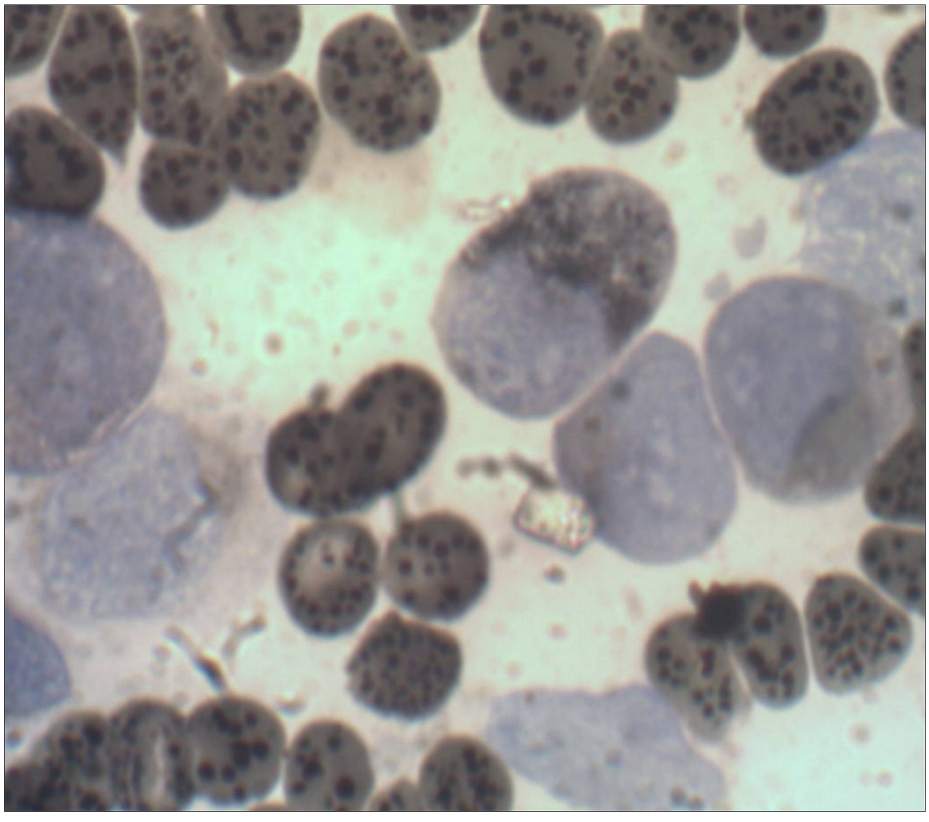

Figure 6. Sudan B black on the bone marrow

Chloromas can develop in any part of the body[6]. The tumour can spread from the bone marrow through the Haversian canals and can infiltrate the periosteum, particularly of the skull, sternum, ribs, spine, sacrum and proximal portions of the long bones. From here, the chloroma cells spread to the blood invading any organ. The most common sites of tumour invasion are the peritoneum, pericardium, bronchus, bladder, mediastinum, kidneys and lung[7-11]. In addition chloromas can also develop in the soft palate, the rhinopharynx, orbit, salivary glands, scalp and face.[12] Uncommon sites of chloroma localization are: the jaw[13,14], facial nerve[15], lips[16], nasal cavity[17], maxilla[18] and temporal bone.[19]

As the chloromas can occur in different areas of the body the clinical effects will be dependent on the site of the lesions. In our case patient presented with a lump in the breast. She never had any tests done. After she was diagnosed as a case of acute myeloblastic leukemia (AML) a review of her symptoms revealed that she had been having progressive weakness which was associated with fever. Had the finger prick not being performed the diagnosis of AML would have not been possible in this case.

The tumours that can be confused with chloroma are histiocytic lymphoma, poorly differentiated lymphoblastic lymphoma, lymphoma with large cells, Ewing sarcoma, some acute lymphocytic leukaemia as well as primitive neuroepithelial tumours.[20]

CONCLUSION

Peripheral smear of a patient with multiple lymph nodes is very helpful in establishing the diagnosis especially leukemia.

REFERENCES

1. Burns, Observations of Surgical Anatomy in Head and Neck, Thomas Royce, Edinburgh, UK, 1811.
2. King. "A case of Chloroma." *Monthly Journal of the Medical Society*, vol. 17, p.97, 1853.
3. Dock G. "Chloroma and it's relation to leukemia." *The American Journal of the Medical Sciences*, vol. 106, pp.152–157, 1893.
4. Mason TE, Dermaree RS, Margolis CL. Granulocytic sarcoma (chloroma) two years preceding myelogenous leukemia. *Cancer* 1973; 31:423-432.
5. Uyesugi WI, Watabe J, Petermann G. Orbital and facial granulocytic sarcoma (chloroma): a case report. *Pediatr Radiol* 2000; 30: 276-8.
6. Mazur EM, Mertino JR. Myeloblastoma and acute myelogenous leukemia: Presentation with cervical neuropathy and complete response to chemotherapy. *Cancer* 1982; 49: 637-639.
7. Harris DW, Ostlere LS, Rustin MHA. Cutaneous granulocytic sarcoma (chloroma) presenting as the first sign of relapse following autologous bone marrow transplantation for acute myeloid leukaemia. *Br J Dermatol* 1992; 127:182-4.
8. Menasce LP, Banerjee SS, Beckett E. Extra-medullary myeloid tumor (granulocytic sarcoma) is often misdiagnosed: a study of 26 cases. *Histopathol* 1999; 34: 391-8.
9. Nounou R, Al-Zahrani HH, Ajarim DS, Martin J, Iqbal A, Naufal R, *et al.* Extramedullary myeloid cell tumours localised to the mediastinum. A rare clinicopathological entity with unique karyotypic features. *J Clin Pathol* 2002; 55: 221-5.
10. De Paz R, Canales MA, Hernandez-Navarro F. Granulocytic sarcoma (chloroma) of the lung. *Br J Haematol* 2003; 120: 176.
11. Park HJ, Jeong DH, Song HG, Lee GK, Han GS, Cha SH, *et al.* Myeloid sarcoma of both kidney, the brain, and multiple bones in a nonleucemic child. *Yonsei Med J* 2003; 44: 740-3.
12. Nieman RS, Barcos M, Berard C. Granulocytic sarcoma: A clinicopathologic study of 61 biopsied cases. *Cancer* 1981; 48: 1426-37.
13. Conran MJC, Keohane C, Kearney PJ. Chloroma of the mandible: a problem of diagnosis and management. *Acta Paediatr Scand* 1982; 71: 1041-3.

14. Reichart PA, Roemeling R, Krech R. Mandibular myelosarcoma (chloroma): Primary oral manifestation of promyelocytic leukemia. *Oral Surg* 1984; 58: 424-6.
15. Chapman P, Johnson SAN. Mastoid chloroma as relapse in acute myeloid leukemia. *J Laryngol Otol* 1980; 94: 1423-7.
16. Sadick N, Edlin D, Myskowski PL. Granulocytic sarcoma. *Arch Dermatol* 1984; 120: 1341-3.
17. Prades JM, Alaani A, Mosnier JF, Dummollard JM, Martin C. Granulocytic sarcoma of the nasal cavity. *Rhinology* 2002; 40: 159-61.
18. Takaue Y, Culbert SJ, van Eys J, Dalton WT Jr, Cork A, Trujillo JM. Spontaneous cure of end-stage acute nonlymphocytic leukemia complicated with chloroma (granulocytic sarcoma). *Cancer* 1986; 58: 1101-5.
19. Ferri E, Minotto C, Ianniello F, Cavaleri S, Armato E, Capuzzo P. Maxillo-ethmoidal chloroma in acute myeloid leukaemia: case report. *Acta Otorhinolaryngol Ital.* 2005 June; 25(3): 195–199.
20. Fellbaum C, Hansmann ML. Immuno-histochemical differential diagnosis of granulocytic sarcoma and malignant lymphomas on formalin fixed material. *Virchows Arch A PatholnAnat Histopathol,* 1990; 416(4): 351-5.