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Granulocytic Sarcoma of Testis

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Abstract: ***Granulocytic sarcomas are are rare solid tumours composed of immature granulocytes, monocytes or both involving any extramedullary site. Isolated Granulocytic sarcoma of the testes is a very rare condition with only 7 cases of the condition being reported in previous literature. To our knowledge this is the first case of this condition to be reported since 2006 and also the first case to be reported in India. We report the case of a 28 year old male who was referred to our department with asymptomatic left testicular swelling. He underwent Left Orchidectomy on the clinical and investigative diagnosis of testicular tumour. Diagnosis of Granulocytic sarcoma was made based on Immunohistochemistry for CD 34, CD 45, CD 99 and Myeloperoxidase.***

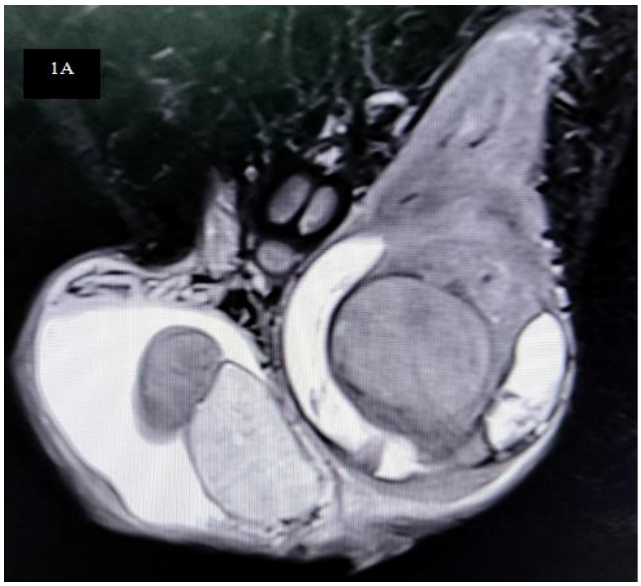
Keywords: Granulocytic, Sarcoma, Testis

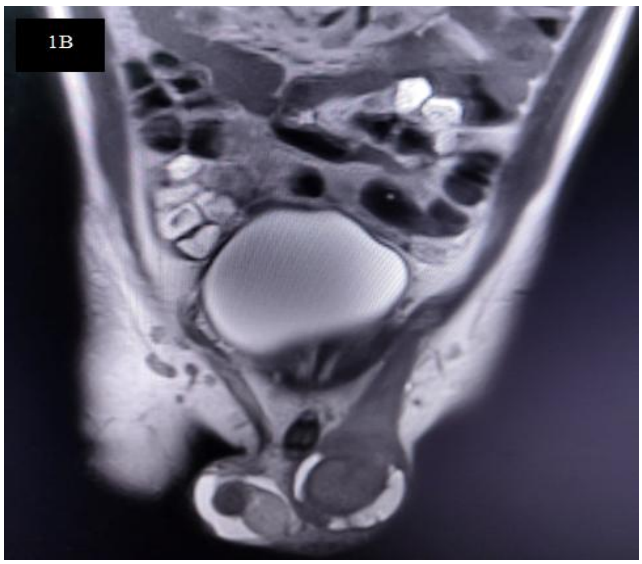
1. Introduction

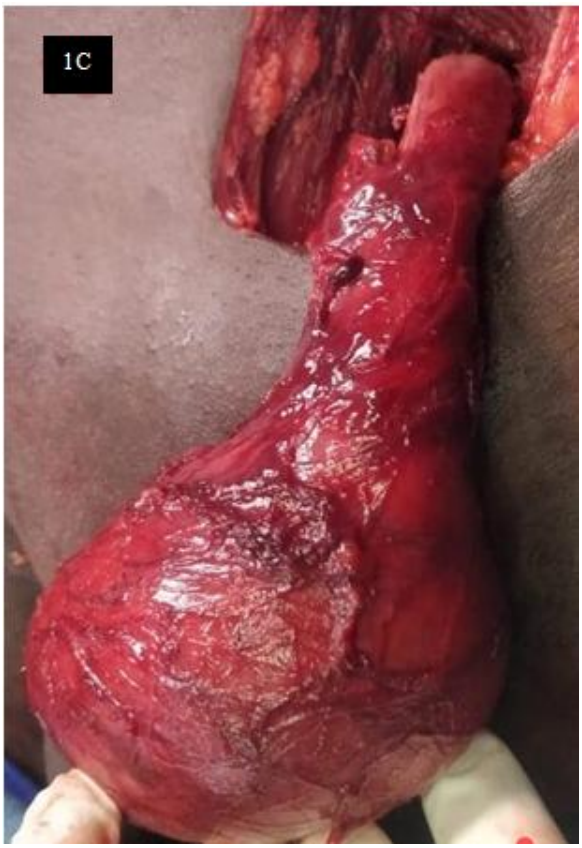
Granulocytic sarcoma is a rare solid tumour composed of immature myeloid cells. GS can present in any organ but is most commonly found in the periosteum, bone, soft tissues, skin and lymph nodes. We report an unusual case of Granuloctuc Sarcoma of the testis occurring without the usual hematologic manifestations of acute leukemia.

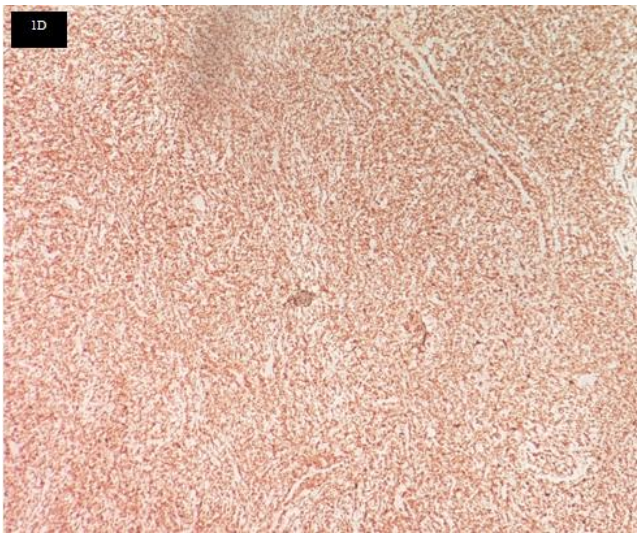
2. Case Report

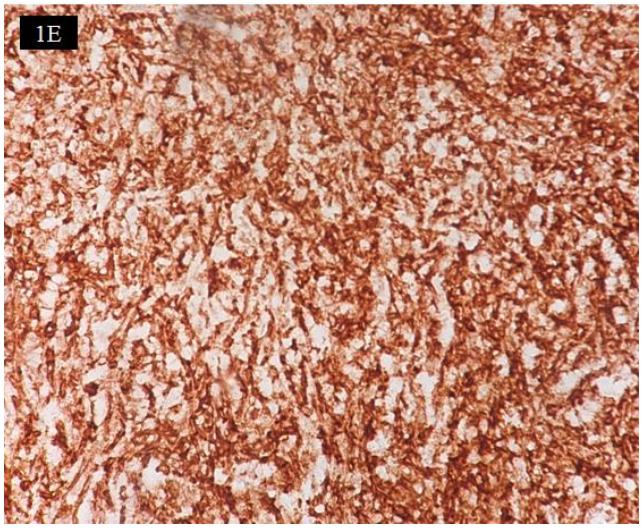
A 28 year old male was referred to the Department of urology in view of an Asymptomatic left scrotal mass. On examination his left testis was moderately enlarged and non tender. The CBC count and serum biochemistry tests including β human chorionic gonadotropin, α-fetoprotein and LDH were within normal limits. MRI of the testis was done which showed Left testes to be relatively enlarged (Figure 1a) with altered signal intensity and greater diffusion restriction along with thickening of the left spermatic cord (Figure 1b). A High left inguinal orchidectomy was done. The Spermatic cord was found to be thickened upto the level of the internal inguinal ring. (Figure 1c). Immunohistochemistry (IHC) was done and was positive for Myeloperoxidase (Fig 1d), CD 34 (Fig 1e), CD 45 (Fig 1f), CD 99 and negative for CD 3, CD 20, desmin, chromogranin, synaptophysin, OCT ¾. Based on the IHC, diagnosis of Granulocytic sarcoma of testes was made.

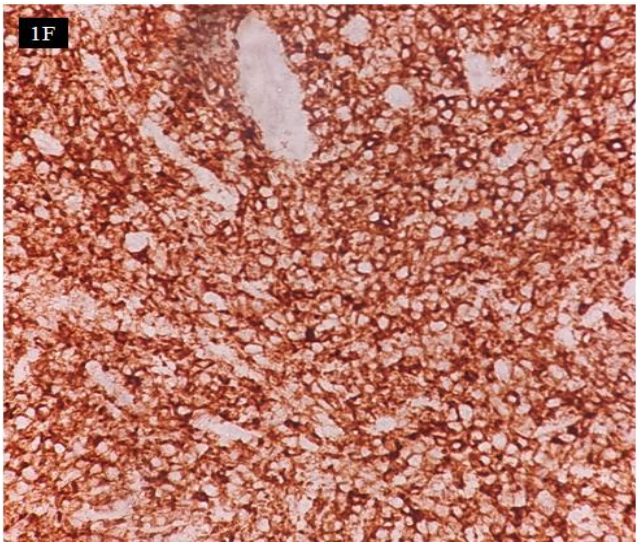












3. Discussion

GS is an extra-medullary solid tumor of myeloid origin and often occurs in association with AML, Myeloproliferative diseases and Myelodysplastic syndromes but it may occur without any accompanying hematological diseases. It can occur at any age. It was previously termed as 'chloroma' due to the green appearance of the tumour cells when exposed to air [1]. The sites most affected are bony structures (cranium, sternum, ribs, vertebrae and pelvis), skin, soft tissues of the head and neck (especially the orbit), lymph nodes and breasts. [2]

Granulocytic sarcoma of the testis is relatively uncommon. GS can be divided into (1) Those associated with AML, Myelodysplastic syndromes and (2) Isolated Testicular Granulocytic sarcomas. A total of 37 cases have been reported in previous literatures. Of these 7 cases were found to be isolated Testicular GS [3].

Immunohistochemistry is of great value in identifying antigens associated with the myeloid lineage. These tumours are characterized by positivity for CD 34, CD 45, CD 99, MPO and negativity for CD 3 and CD 20 as shown in the present case. Isolated involvement of the testis, as described

in the present case, is considered to be uncommon, with a poor prognosis.

Since Granulocytic sarcoma is a condition of diagnostic confusion, the initial correct diagnosis would benefit the patient with aggressive chemotheraphy, which will prolong the non leukemic period and the life of the patients affected [4]. The chemotherapeutic agents used in the treatment of GS include Daunorubicin, cytosine arabinoside, and 6-mercaptopurine have all been used as therapy. The former two agents are the most used induction regimen for AML.

4. Conclusion

Despite the rarity of Granulocytic sarcoma, it should be taken into consideration in the differential diagnoses of undifferentiated neoplasia. Using adequate immunohistochemical techniques, a rapid diagnosis of granulocytic sarcoma can be made. An increased awareness of this entity will aid in hastening a correct pathologic diagnosis and appropriate treatment.

References

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