# Cytological Diagnosis of Bilateral Supraclavicular Swellings – Be Aware of the Rare

#### Abstract

Cervical lymphadenopathy is the most common clinical presentation in many infective and neoplastic lesions. Most common lesions among them are reactive lymphoid hyperplasia, tuberculosis, and metastatic deposits. Fine-needle aspiration cytology is a reliable diagnostic tool for patients with cervical lymphadenopathy to know the various lesions and helps in deciding further management. The American Joint Committee on Cancer classifies cervical lymph nodes into level 1 to 7, of which supraclavicular lymph nodes comprise level 5. The major cause for enlargement of supraclavicular lymph nodes is metastatic malignancy deposits followed by either Hodgkin's disease or non-Hodgkin's lymphoma. We present an interesting case of a male patient clinically manifested with initial asymptomatic bilateral supraclavicular swellings and finally diagnosed with metastatic deposits of germ cell tumor, seminoma, from testis on cytological study in constellation with clinical and radiological findings.

**Keywords:** Fine-needle aspiration cytology, lymphadenopathy, metastasis, seminoma, supraclavicular lymph nodes

### Introduction

Cervical lymphadenopathy is the most common clinical presentation in many infective and neoplastic lesions.<sup>[1-3]</sup> Fine-needle aspiration cytology (FNAC) is a reliable diagnostic tool for patients with cervical lymphadenopathy to know the various lesions and helps in deciding further management of the patients.<sup>[1-5]</sup> We present an interesting case of a male patient clinically manifested with initial asymptomatic bilateral supraclavicular swellings diagnosed with metastatic genital system malignancy on cytological study in constellation with clinical and radiological findings.

## **Case Report**

A 31-year-old male weaver by occupation presented to the surgery outpatient department with bilateral supraclavicular swellings. Clinical diagnosis of tuberculosis or lymphoma was thought of and referred to pathology department for FNAC. On the arrival of the patient in pathology department, the patient complained of bilateral supraclavicular swellings noticed for 3 months, gradually increasing in size. There were no prior histories of fever, cough, weight loss, or any other swellings in the body. On examination, firm, nontender, bilateral supraclavicular swellings were noted, each measuring  $3 \text{ cm} \times 2 \text{ cm}$  [Figure 1]. FNA done from bilateral supraclavicular swellings yielded blood-mixed greywhite material; slides were air-dried and wet-fixed, followed by Giemsa, Papanicolaou, and Ziehl-Neelsen stains. Smears studied were highly cellular and composed of pleomorphic malignant cells in dyscohesive sheets, clusters, and dispersed singly. The pleomorphic cells were round to oval, increased nucleocytoplasmic ratio, large irregular nuclei, many had fine granular chromatin with prominent large 1-2 nucleoli, few had prominent macronucleoli and moderate to scant cytoplasm. The background showed few scattered lymphocytes and tigroid appearance [Figure 2a-d]. The characteristic of pleomorphic large malignant cells with prominent nucleoli and tigroid background suggested the diagnosis of germ cell tumor metastatic deposits. In view of this, the patient was followed up and conscientious questing for any inguinal or scrotal swellings was done.

**How to cite this article:** Geethamala K, Sharanappa A, Kittur SK. Cytological diagnosis of bilateral supraclavicular swellings – Be aware of the rare. Clin Cancer Investig J 2018;7:231-3.

## K. Geethamala, Aruna Sharanappa, Shreekant K. Kittur

Department of Pathology, Belgaum Institute of Medical Sciences, Belagavi, Karnataka, India

Address for correspondence: Dr. K. Geethamala, Department of Pathology, Belgaum Institute of Medical Sciences, Belagavi, Karnataka, India. E-mail: drgeethamala@gmail. com



This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com



Figure 1: Clinical photograph showing bilateral supraclavicular swellings

The patient was very shy and after minutes of request; finally the patient unveiled the puzzle by revealing us a left scrotal mass which was present for 4–5 months. On asking for marital status, he was married and have two live children. Ultrasonography (USG) of the scrotum was done; it was reported that the left testis enlarged measuring 2.6 cm  $\times$  2.4 cm with features of malignant testicular lesion, possibly seminoma testis. Other side testis and bilateral epididymis were normal. Single left paraaortic and bilateral supraclavicular lymph nodes were enlarged with features of secondary metastatic deposits. Compiling all the data available, a final diagnosis of metastatic deposits of germ cell tumor, seminoma, of testicular origin was reported. The patient was referred to the higher oncology center for further management.

## Discussion

Cervical lymphadenopathy may be due to myriad of etiologies. Most common lesions among them are reactive lymphoid hyperplasia, tuberculosis, and metastatic deposits.<sup>[1-3]</sup> In India, predominant younger population succumbs to tuberculosis, whereas in patients over the age of 40 years, metastatic deposits are the most common cause, leading to cervical lymphadenopathy.<sup>[3,4]</sup> FNAC is a simple, cost-effective, reliable, repeatable, and outpatient procedure. FNAC of cervical metastatic lymph nodes not only helps in the diagnosis but hints with the nature and origin of the primary tumor.<sup>[1,5]</sup> The American Joint Committee on Cancer (AJCC) classifies neck nodes into level 1 to 7, of which supraclavicular lymph nodes comprise level 5. Studies have shown that major cause for enlargement of supraclavicular lymph nodes is metastatic malignancy deposits followed by either Hodgkin's lymphoma or non-Hodgkin's lymphoma.<sup>[6,7]</sup> The most common primary tumor metastasizing to supraclavicular lymph nodes is predominantly from lung, breast, stomach, esophagus, and rarely unknown primary. However, malignant tumors other than these can and do spread to the



Figure 2: (a and c) Photomicrograph showing poorly cohesive pleomorphic cells scattered singly, lymphocytes and tigroid background (Pap and Giemsa ×10). (b and d) Photomicrograph showing dispersed cells; moderately pleomorphic vesicular nuclei; 1–2 prominent nucleoli, tumor giant cells and atypical mitosis; many scattered lymphocytes (Pap and Giemsa ×40)

supraclavicular lymph nodes and hence should always be considered in the differentials.<sup>[1-8]</sup>

Testicular cancers account for approximately 1% of cancers in males between the age groups of 15 and 35 years. They are broadly classified into seminomas and nonseminomatous germ cell tumors.<sup>[2,8-13]</sup> Seminomas account for approximately 60% of the testicular germ cell tumors.<sup>[8]</sup> Its incidence is highest among 30-39 years of age and decrease with aging.<sup>[8]</sup> Undescended testis or cryptorchidism is considered as a major risk factor for the development of testicular cancer. Painless testicular mass is the most common clinical presentation of testicular cancers. Others are secondary hydrocele and undescended testis.<sup>[2,8,9]</sup> It may also present with lymph nodal mass in the abdomen, mediastinum, and supraclavicular swellings with or without palpable testicular mass. Literature search revealed that 4.5%-15% of patients with testicular cancers present with metastatic deposits to neck nodes. Of which, 5% of these testicular cancer cases present with neck masses as the initial presenting features.<sup>[2-4,9,11,12]</sup> Lymphatic metastases from testicular germ cell tumors tend to be contiguous, spreading from abdomen into the chest and finally into the neck.<sup>[9,11,12]</sup> In the present case, the patient was aged 31 years and presented with palpable painless bilateral supraclavicular swelling as the initial presentation, rather than testicular mass or undescended testes.

FNAC is the first and foremost investigation for neck nodes to diagnose the various entities; in the present case also, the patient was subjected FNAC.<sup>[1]</sup> On cytology, smears were cellular and showed large pleomorphic cells with prominent nucleoli and tigroid background.<sup>[1,2,9]</sup> Various common differential diagnoses usually considered for neck nodes in adult male were metastatic adenocarcinoma, amelanotic melanoma, and lymphoma. In the present case, these were ruled out on the basis of absence of diagnostic features such as acinar and glandular formation for adenocarcinoma.<sup>[1,2,9,11]</sup> Marked nuclear atypia, mitoses, plasmacytoid features, intranuclear inclusions for amelanotic melanoma, and monotonous lymphoid cells with classic speckled nuclear chromatin for lymphomas.<sup>[1,2]</sup> In the present case, classic large pleomorphic cells, macronucleoli, and tigroid background helped us to diagnose metastatic deposits of germ cell tumor, seminoma, from testicular origin in bilateral supraclavicular lymph nodes. Further, we found enlarged testis in the patient, which patient himself neglected; probably as it did not affect him in his fertility.

USG scrotum will help confirm both palpable and clinically impalpable lesions in the testis. Malignant lesion is seen as a heteroechoic lesion with or without the presence of micro- or macrocalcification. USG also helps in assessing lymph nodal masses in the abdomen and the neck. In the present case, also, cytological features together with USG findings helped us to arrive at the final diagnosis. Serum tumor markers such as serum  $\alpha$ -fetoprotein, lactate dehydrogenase, and  $\beta$ -human chorionic gonadotropin also help in the diagnosis, prognosis, and staging.<sup>[2,8,12]</sup>

Surgery, radiotherapy, and chemotherapy are three modalities of treatment available for testicular cancer. Staging helps in assessing the suitable treatment to attain optimal cure rate. Once the supraclavicular lymph nodes are involved, tumor–node–metastasis staging (as published in the AJCC and Cancer Staging Manual) categorizes tumor as stage 3 as in the present case study. The Stage 3 disease includes adjuvant chemotherapy followed by surgical salvage of residual disease. Studies have reported 80% of 5-year survival response rate for patients having testicular tumors with metastatic disease.<sup>[2,8,12,13]</sup>

## Conclusion

The present case report highlights the fact that germ cell tumor, seminoma, of testis can manifest initially as bilateral supraclavicular swellings. High index of suspicion coupled with diligent search for the characteristic findings on cytology in constellation with clinical and radiological findings helps in arriving at an accurate diagnosis. It is of paramount importance to be aware of the rare and to consider the possibility of metastatic seminoma while dealing with supraclavicular swellings metastases in an adult male.

#### **Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have

given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

### Financial support and sponsorship

Nil.

#### **Conflicts of interest**

There are no conflicts of interest.

#### References

- PerezGuillermo M, Orell SR, Sterrett GF. Male and female genital tract. In: Orell SR, Sterrett GF, editors. Fine Needle Aspiration Cytology. 5<sup>th</sup> ed. Churchill Livingstone: Elsevier; 2012. p. 351-2.
- Tamboli S, Agashe S, Patil P. Cytologic diagnosis of metastatic seminoma in neck nodes as initial presentation. J Krishna Inst Med Sci Univ 2012;1:99-101.
- 3. Mitra S, Ray S, Mitra PK. Fine needle aspiration cytology of supraclavicular lymph nodes: Our experience over a three-year period. J Cytol 2011;28:108-10.
- López F, Rodrigo JP, Silver CE, Haigentz M Jr., Bishop JA, Strojan P, *et al.* Cervical lymph node metastases from remote primary tumor sites. Head Neck 2016;38 Suppl 1:E2374-85.
- Jethwani D, Bhalara R, Dhruv G. A study of metastatic lesions of cervical lymphadenopathy by fine needle aspiration cytology. Int J Res Med Sci 2015;3:1697-700.
- Amin MB, Edge SB, Frederick GL. AJCC Cancer Staging Manual. Head and Neck. 8<sup>th</sup> ed. New York: Springer International Publishing; 2018. p.21-6.
- Leena RK, Vikram VJ, Selvaraj AK, Saravana BP. Clinical assessment of cervical node in head and neck malignancy: Case series. Int J Otorhinolaryngol Head Neck Surg 2018;4:387-90.
- Eble JN, Sauter G, Epstein JI, Sesterhenn IA, editors. World Health Organization Classification of Tumours. Pathology and Genetics of Tumours of the Urinary System and Male Genital Organs. Lyon: IARC Press; 2004.
- Bhalla RK, Jones TM, Errington D, Roland NJ. Metastatic testicular seminoma – A case report. Auris Nasus Laryn×2002;29:219-22.
- van Vledder MG, van der Hage JA, Kirkels WJ, Oosterhuis JW, Verhoef C, de Wilt JH, *et al.* Cervical lymph node dissection for metastatic testicular cancer. Ann Surg Oncol 2010;17:1682-7.
- Bond JR, Tilley M, Amin S, Larsen CG. Supraclavicular neck mass as sole presenting symptom for seminoma in an elderly male. Int J Head Neck Surg 2013;2:126-8.
- Rao JY, Vijayalaxmi M, Tati YS, Gattu VR, Swamynadh P, Aravind JV, *et al.* Atypical presentation of testicular tumour – Review of 3 cases with literature review. IOSR J Dent Med Sci 2015;14:51-6.
- 13. Alexander EJ, White IM, Horwich A. Update on management of seminoma. Indian J Urol 2010;26:82-91.