

## Case Report

# Scrotal ultrasound: an underutilised armamentarium in upper aerodigestive tract non-Hodgkin's lymphomas

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### Abstract

Primary testicular non-Hodgkin's lymphoma (NHL) has a very low incidence. Therefore, clinical examination and imaging of testis is overlooked in the routine mapping of NHL. We discuss a case of Waldeyer's ring NHL who also had asymptomatic testicular lymphoma on presentation and the importance of testicular ultrasound in NHL workup.

**Keywords:** non-Hodgkin's lymphoma, ultrasound scan, scrotum, malignant lymphoma, head and neck, Waldeyer's ring

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## **Introduction**

About one third of NHL occur primarily at extra-nodal sites but the number of publications on specific extra-nodal sites and lymphoma types remain low due to the scarcity of cases<sup>1</sup>. This is mainly because NHL can occur in most of the body's organs to make up for the numbers, but it is very low when compiled according to functional organs<sup>2</sup>. Hence certain sites, like testis, are not considered in the routine workup of NHL if not clinically obvious.

## **Case Report**

A 62-year-old male presented with dysphagia and throat discomfort of 3 months' duration. On further examination an incidental finding of left sided testicular swelling was observed. The patient has a past medical history significant for chronic obstructive airway disease. He is a regular smoker. The rest of his medical and surgical history was unremarkable.

He denies any weight loss, night sweats or fever. Fiberoptic nasolaryngoscopy examination revealed a large mass in the base of his tongue which appeared quite vascular. Testicular ultrasound scan and Doppler studies were suggestive of a malignant pathology. Tumour size was 55 mm. The epididymis and spermatic cord were not involved by the tumour.

Direct laryngoscopy and biopsy of the base of tongue lesion and left side orchidectomy were done under general anaesthesia. Biopsy sample obtained through direct laryngoscopy of the base of tongue and testicular histology showed features of a high-grade NHL (B-cell type). Tumour cells were positive for CD 20 and negative for PLAP, AE1/AE3 and CD3.

Contrast-enhanced CT scan showed large soft tissue mass with central necrosis anterior to the aorta extending towards the left kidney encasing the superior mesenteric vessels and renal vessels. There was another enhancing lesion seen at the base of the tongue.

Patient was referred to the multidisciplinary meeting to discuss further management.

## **Discussion**

Examination of scrotum is part of the pelvic examination although subtle findings could be missed initially. Testicular lymphomas usually present as a painless swelling, which is gradually progressive. Occasionally may present with systemic symptoms such as weight loss, night sweats, anorexia, fever, and malaise. Rarely does it present with pain and tenderness mimicking inflammatory pathology. If the testicular involvement is bilateral, clinical diagnosis could be missed<sup>2,3,4</sup>.

A high percentage of NHL arise from tissues other than lymph nodes and from regions that normally contain no lymphoid tissue. These are known as primary extra-nodal lymphomas. At least one-third of the total lymphomas are of extra-nodal origin<sup>1</sup>. The testis is one such site. Of the testicular neoplasms, only about 1 to 9 percent fall into the category of testicular lymphomas. Of all the NHL only 1% occur in the testis<sup>2,3,4,5</sup>.

Despite being considered uncommon they are the most common testicular malignancy in men in their sixth decade of life and the commonest pathology of bilateral testicular tumours, significantly different to that of germ cell tumours<sup>2,3,4,5</sup>.

The literature is scarce on compiled secondary testicular lymphomas although it is a known entity. This is because the available descriptions were based on single case reports or small case series. Most of the analysis and inferences have been made with pooled data. Therefore, the staging, treatment and prognostication can be controversial due to the lack of uniformity.

Waldeyer's ring, skin, subcutaneous tissue, the central nervous system, contralateral testis, and the lungs are known to cause testicular secondaries in NHL. Approximately 80% of the secondary lymphomas of the testes are diffuse large B cell lymphomas<sup>2,3,4,5</sup>.

Investigations for a suspected patient with lymphoma include routine haematological and biochemical blood work, contrast-enhanced CT scan of the neck, chest, abdomen and pelvis and bone marrow biopsy. A lumbar puncture should be included due to the high affinity of the testicular lymphomas to the central nervous system<sup>1,2,3</sup>.

The investigation of choice for tumour and non-tumour lesions of the scrotum is ultrasonography and Doppler. It helps with the diagnosis of testicular neoplasms. The nature of disease depends on the location of the lesion. The majority of intratesticular lesions are malignant while extra testicular lesions are usually benign. Ultrasound scan can differentiate between the two accurately<sup>6</sup>.

The ultrasound appearance of testicular lymphoma is either focal or diffuse hypoechoic enlarged testis with hypervascularity. Bilateral disease occurs in up to 35% of cases. Testicular metastasis from carcinomas are generally focal lesions whereas lymphoma and leukaemia present as diffuse lesions<sup>6,7</sup>. Colour and spectral Doppler analysis of testicular lymphomas usually display hypervascularization with focal lesions. Interestingly when the testicular involvement is diffuse, it shows generalized testicular hypervascularization, with high or borderline resistance indexes<sup>7</sup>.

Orchidectomy is indicated in suspected testicular lymphomas to provide histological diagnosis and eliminate blood-testis barrier that makes testicular tumour inaccessible to systemic chemotherapy<sup>4,7</sup>. Local spread of testicular lymphoma frequently involves epididymis, lineae albuginea, spermatic cord, and scrotal skin. It tends to spread to extra-nodal sites, including central nervous system, lungs and the Waldeyer's ring. In our patient the diagnosis was confirmed on histopathology. The CD20 immunostaining established the B-cell lineage of the lymphoma cells<sup>2,3,4</sup>.

Fluorodeoxyglucose-positron emission tomography (FDG-PET) helps distinguish testicular metastatic squamous cell carcinoma from lymphoma. On FDG-PET/CT, testicular lymphomas appear as abnormally increased asymmetrical uptake in the affected testis. Although PET scan is very effective in the preliminary workup, it is costly and not easily available at all the hospitals. Hence, not requested in the primary diagnostic stage. However, FDG-PET stands as part of response evaluation criteria when available in which contrast-enhanced CT scan can be complementary<sup>8</sup>.

## **Conclusion**

There is limited documentation on testicular involvement in NHL. This case highlights the occurrence of asymptomatic testicular involvement and aims to draw the attention of the clinicians to suspect testicular involvement in all cases of NHL. The reported case also emphasizes the role of ultrasound scan in the detection of unusual and unsuspected primary and secondary extra-nodal NHL that has an important bearing on the management and prognosis.

## References

1. Singh D, Sharma A, Mohanti BK, Thulkar S, Bahadur S, Sharma SC, et al. Multiple extranodal sites at presentation in non-Hodgkin's lymphoma. *Am J Hematol*. 2003 Sep; 74(1): 75-7. doi: 10.1002/ajh.10357.<https://doi.org/10.1002/ajh.10357>PMid:12949896
2. Vitolo U, Ferrei AJM, Zucca E. Primary testicular lymphoma. *Crit Rev OncolHematol*. 2008 Feb; 65(2):183-189.<https://doi.org/10.1016/j.critrevonc.2007.08.005>PMid:17962036
3. Fonseca R, Habermann TM, Colgan JP, O'Neill BP, White WL, Witzig TE, et al. Testicular lymphoma is associated with a high incidence of extranodal recurrence. *Cancer*. 2000; 88(1): 154-161.[https://doi.org/10.1002/\(SICI\)1097-0142\(20000101\)88:1<154::AID-CNCR21>3.0.CO;2-T](https://doi.org/10.1002/(SICI)1097-0142(20000101)88:1<154::AID-CNCR21>3.0.CO;2-T)
4. Lantz AG, Power N, Hutton B, Gupta R. Malignant lymphoma of the testis: A study of 12 cases. *J Can Urol Assoc*. 2009; 3(5): 393-398. doi: 10.5489/cuaj.1153.<https://doi.org/10.5489/cuaj.1153>PMid:19829735 PMCID:PMC2758504
5. Zucca E, Conconi A, Mughal TI, Sarris AH, Seymour JF, Vitolo U, et al. Patterns of outcome and prognostic factors in primary large-cell lymphoma of the testis in a survey by the international extranodal lymphoma study group. *J Clin Oncol*. 2003; 21(1): 20-27.<https://doi.org/10.1200/JCO.2003.11.141>PMid:12506165
6. Rohena-Quinquilla IR, Lattin GE Jr, Wolfman D. Imaging of Extranodal Genitourinary Lymphoma. *Radiol Clin North Am*. 2016 Jul;54(4):747-64.<https://doi.org/10.1016/j.rcl.2016.03.009>PMid:27265606
7. Bertolotto M, Derchi LE, Secil M, Dogra V, Sidhu PS, Clements R, et al. Grayscale and color Doppler features of testicular lymphoma. *J Ultrasound Med*. 2015 Jun;34(6):1139-45.<https://doi.org/10.7863/ultra.34.6.1139>PMid:26014335 PMCID:PMC4977091
8. El-Galaly TC, Villa D, Gormsen LC, Baech J, Lo A, Cheah CY. FDG-PET/CT in the management of lymphomas: current status and future directions. *J Intern Med*. 2018 Jul 10; 284: 358- 376<https://doi.org/10.1111/joim.12813>PMid:29989234