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Importance of Scrotal Ultrasonography in Young Adults with Retroperitoneal Lymphadenopathy

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Abstract: ***Testicular germ cell tumors are commonly seen in young adult males of age group 20 - 40 years. We present a case of a young male who presented with right flank pain due to right moderate hydro - uretero - nephrosis associated with bilateral, para - aortic, left cervical lymphadenopathy and then diagnosed with right non - seminomatous testicular germ cell tumor.***

Keywords: Non seminomatous germ cell tumors, Retroperitoneal lymphadenopathy, Cervical lymphadenopathy

1. Introduction

Testicular tumors are the most common malignant tumors in young men [1].95% of testicular tumors are germ cell tumors and 5% are sex cord - stromal tumors.

Among germ cell tumors 50% are seminomatous and the other 50% are non - seminomatous [2].

Non - seminomatous are further classified as mixed germ cell tumors (33%), teratomas (4%), yolk sac tumors (1%) and choriocarcinoma (0.3%) [2].

2. Case Details

A29 - year – old male patient presented with a complaint of right flank pain and was referred for ultrasound examination of the abdomen.

3. Imaging Findings

Ultrasound imaging was performed using a low - frequency transducer and showed right moderate hydro - uretero - nephrosis, due to bulky bilateral heterogenous paraaortic nodes compressing upon ureter.

Screening of ultrasound neck revealed enlarged and heterogenous left lower jugular cervical lymph node.

Based on these imaging findings we thought about the possibilities of lymphoma and metastatic lymph nodes and then considering the age and gender of the patient, we have performed a screening ultrasound examination of the scrotum which revealed heterogenous right testicular mass with areas of necrosis and calcifications. Left testes were normal.

Finally, we came to the conclusion of non - seminomatous germ cell tumor of testes with distant metastasis.

Biopsy was performed and revealed histopathological findings of mixed germ cell tumor with components of teratoma, embryonal carcinoma, choriocarcinoma, and yolk sac tumor.

Subsequently patient underwent contrast - enhanced computed tomography of the chest and abdomen for staging, findings have corresponded to ultrasound findings and there was no evidence of lung metastasis.

The patient was referred to the oncology department for further management.

Figure 1 (a) & 1 (b): Demonstrating bilateral enlarged heterogeneous paraaortic lymph nodes, right side node

impinging on right proximal ureter causing right moderate hydro - uretero – nephrosis

Figure 1 (c): Transverse ultrasound image of right testes demonstrating heterogeneous mass lesion with areas of internal necrosis and calcifications in testes.

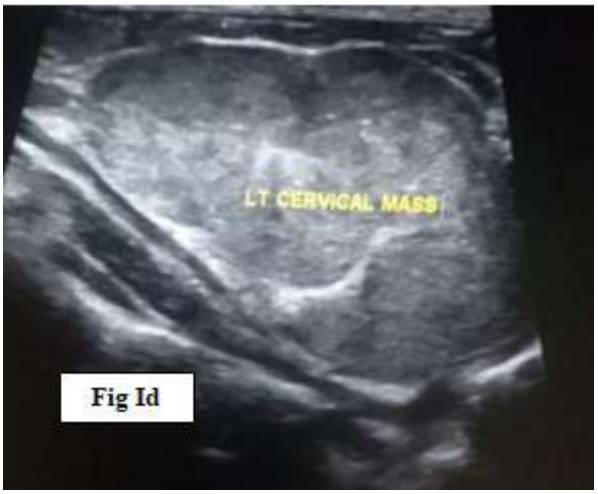

Figure 1 (d): Demonstrating enlarged & heterogenous left lower jugular cervical lymph node.

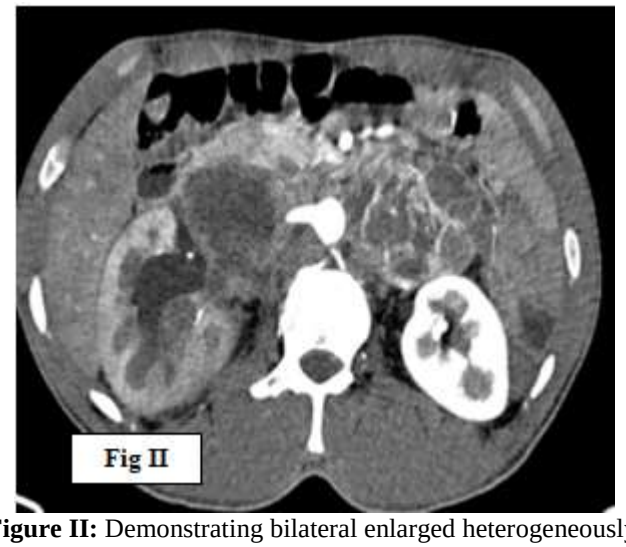

Figure II: Demonstrating bilateral enlarged heterogeneously enhancing paraaortic lymph nodes, right side node impinging on right proximal ureter causing right moderate hydro - uretero - nephrosis.

4. Discussion

For the young male patient presenting with retroperitoneal and cervical lymphadenopathy, it is important to perform an ultrasound examination of the scrotum to rule out testicular tumors.

Germ cell tumors of testes are further classified into seminomatous and non - seminomatous tumors. This division helps in patient management [2]

Seminomas are radiosensitive, whereas surgery and chemotherapyare the better approaches for non - seminomatous germ cell tumors.

Ultrasound examination of testes is the standard imaging modality. At imaging testicular tumors appears as solid intratesticular mass with internal vascularity [3].

Seminomas are mostly homogenous, hypoechoic in ultrasound reflecting their origin from unipotent stem cells and the histological appearance of uniform cells [4].

Non - seminomatous germ cell tumors often show heterogeneous appearance and frequently demonstrate cystic spaces and calcifications, reflecting their origin from totipotent stem cells which undergo various degrees of differentiation into embryonal, teratoma, yolk sac, and choriocarcinoma [4].

Retroperitoneal lymph nodes are considered regional lymph node stations for testes and metastasis of testicular tumors occurs most commonly by lymphatic drainage [5].

Right testicular tumors primarily involveinter - aorto - caval nodes, then followed by precaval and preaortic nodes [6].

Whereas left testicular tumors primarily involve paraaortic, preaortic, and then followed by interaortocaval nodes [6].

Accurate staging should be done based on clinical, radiological, and serum markers components [4].

5. Conclusion

As a clinical radiologist, it is crucial to suspect and perform ultrasound examination of the scrotum and neck in a young male presenting with retroperitoneal lymphadenopathy. Accurate staging and classification of testicular tumors are important in further management of the patient.

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