



Radiodiagnosis

A RARE CASE OF TESTICULAR SEMINOMA WITH RETROPERITONEAL NODAL AND PULMONARY METASTASIS IN A TERTIARY CARE HOSPITAL IN TRIPURA

Dr. Soumyabrata Debnath

Senior Resident, Department of Radiodiagnosis, Agartala Government Medical College, Agartala, Tripura

Dr Monali Debnath

Senior Resident, Department of Pathology, ESIC Hospital, Okhla, New Delhi.

Dr Pulkit Kumar Santoshi

Post Graduate Trainee, Department of Radiodiagnosis, Agartala Government Medical College, Agartala, Tripura.

ABSTRACT Testicular neoplasms account for 1% to 2% of all malignant neoplasms in men. Approximately 95% of testicular tumours are germ cell tumours in young men. Seminomas account for more than 50% of germ cell tumours. Early diagnosis of testicular cancer leads to proper management and improve the outcome by preservation of future fertility. Whereas ultrasonography (USG) helps in early detection of testicular tumour, advanced diagnostic modalities such as CT scan and MRI aids in tumour staging, detecting nodal and distant metastasis as well as in assessing treatment response. We report one case of testicular seminoma with retroperitoneal nodal and pulmonary metastasis in a 22year old male patient. Very few cases of seminoma with distant metastasis in a young male have been reported in the literature till date which makes our case a rare entity.

KEYWORDS : Seminoma, Germ cell tumour, USG (Ultrasonography), CT scan, MRI

INTRODUCTION

Testicular cancer is a relatively rare neoplasm, most commonly affecting the 20-40 years old age group.¹ Testicular Germ cell tumours constitute around 1% of all adult malignancies. India has one of the lowest of Testicular germ cell tumours with a rate of 0.5 per 100000 men.² Seminoma is the most common testicular germ cell neoplasm and accounts for >50% of all Testicular germ cell tumors.³ In the majority of cases (68%), testicular cancer is limited to the testicle at time of diagnosis, whereas the remaining 32% present with regional lymph node or distant metastasis.⁴ Considering all stages, the survival rate is 86% and 71% for the 5- and 10-year survival rate, respectively.⁵ Lifetime risk of developing testicular cancer has been reported as 0.4%.⁶

Case Report

A 22 years old male patient came with the history of cough without expectation for last 5 to 6 months, abdominal discomfort with pain abdomen for last 4 to 5 months, multiple cervical swelling for last 2 to 3 months. He also noticed painless scrotal swelling for last 10-15 days. Signs of pallor were noted on general examination. On local examination, a firm mass was palpable in the right scrotum. Multiple palpable masses were noted in the para-umbilical and hypogastric area on per abdominal examination. Examinations of all other systems were normal. In laboratory investigation, patient was found to be anaemic. Among the tumour markers, Lactate Dehydrogenase (LDH) level was elevated. On further evaluation, gray scale ultrasonography of scrotum showed irregularly enlarged right testis with a well circumscribed heterogeneously hypoechoic solid mass lesion with internal cystic areas. On High frequency Colour Doppler examination, high vascularity was seen in the solid part of mass lesion.

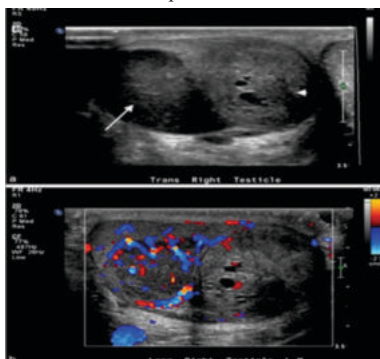


Figure 1: (a) Axial Section Of Scrotum Showing Mass Lesion (Gray Scale USG), (b) Axial Section Of Scrotum Showing Internal Vascularity Of Mass Lesion (Colour Doppler Study).

Multiple well defined rounded isoechoic to hypoechoic solid lesions in the para-aortic region with minimal internal vascularity are noted in ultrasonography of abdomen.

CECT abdomen with scrotum showed heterogeneous, solid cystic mass lesion, arising from right testis; solid part showing minimal enhancement and fluid attenuated collection around the mass. The mass appeared to be invading epididymis, spermatic cord and loss of fat plain with the scrotal skin.



Figure 2: Axial Section At The Level Of Scrotum Showing The Solid Cystic Mass Lesion In The Right Testis (CECT Of Scrotum)

Multiple conglomerate lymph nodes were noted in para-aortic region, encasing the vessels originating of celiac trunk to common iliac arteries.



Figure 3: Axial Section At The Level Of Aorta Showing Multiple Lymph Nodes In Para-aortic Region (CECT Of Abdomen)

Chest X-ray showed multiple, round, radiopaque shadows involving bilateral lung fields. For confirmation of metastatic deposits CECT of Thorax was performed which showed multiple parenchymal, round shaped, heterogeneously enhancing soft tissue attenuated nodular lesions with few lesions showing central hypodensity.

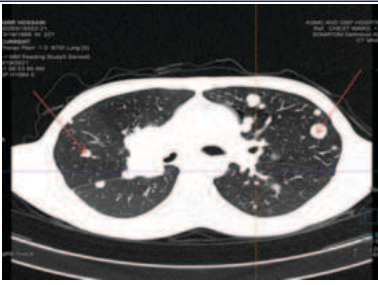


Figure 4: Axial Section-Lung Window Showing Multiple Parenchymal Nodular Lesions (CECT Of Thorax)

T2-weighted MR images of lower abdomen demonstrated a multinodular tumour, replacing the right testis.

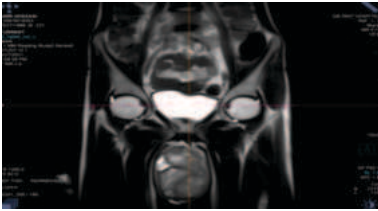


Figure 5: (a) MRI Of Scrotum – Coronal Section Showing The Multinodular tumour

Based on the clinical history and radiological investigations probable diagnosis was given as Seminoma with retroperitoneal nodal and pulmonary metastasis. Post chemotherapy and radiotherapy, radical inguinal orchidectomy was done and the specimen was sent for histopathological examination. On gross examination, a well circumscribed, tan yellow, bulging mass was identified measuring 5x4x2 cm. On microscopic examination, tumour cells are arranged in sheets and nests divided by variably sized fibro-vascular stroma containing abundant lymphocytes. On higher magnification, tumour cells are uniformly large, evenly spaced having central round nuclei, prominent nucleoli and abundant clear cytoplasm. In view of the above mentioned features a confirmed diagnosis of Seminoma was made.

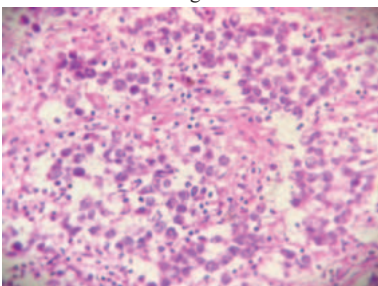


Figure 6: H&e Stained Section Of Right Testis Shows Large Tumor Cells In Sheets With Dividing Fibro Vascular Stroma displaying Abundant Lymphocytes (H&E Of Testis, 400x)

DISCUSSION

Seminomatous germ cell tumours are more common in age group of 35-45 years whereas non-seminomatous germ cell tumours usually occur in men between 15-35 years of age. The risk factors for testicular cancer include undescended testis, gonadal dysgenesis, prenatal exposure to estradiol, exposure to chemical carcinogens, orchitis etc.¹ These tumours usually present as painless, palpable firm to hard scrotal mass. Among tumour markers Lactate dehydrogenase (LDH) level is raised in 80% patients, 10-20% patients show elevated serum Beta hCG, whereas serum Alfa fetoprotein (AFP) are not usually raised in seminomas.³ Many imaging modalities can be used for the evaluation of testicular cancer in different clinical scenarios, before and after therapy; which include Ultrasound (US), Computed Tomography (CT), Magnetic Resonance (MR) and Fluorodeoxy glucose-positron emission tomography (FDG-PET).⁷ Testicular cancer is most commonly initially evaluated with high frequency ultrasound, which is having more than 90% sensitivity and specificity for detecting testicular malignancy. Typically, testicular seminoma presents as a unilateral, homogenous, hypochoic mass in ultrasound; with 10-30% cases of seminoma showing calcification and cystic features.⁸ CT remains the standard modality of imaging in evaluating

the patterns of tumour spread, characteristic appearance of metastatic disease and retroperitoneal lymphadenopathy.¹ Magnetic resonance imaging (MRI) has excellent soft tissue resolution, multidirectional and multisequence scanning technology, making it an important supplementary method in the diagnosis of testicular tumor. MRI is also effective postoperatively for detection of residual tumour, local recurrence and distant metastasis.⁸ CT scans of the chest, abdomen and pelvis are the recommended method for staging for infra-diaphragmatic lymph nodes.⁶ A retroperitoneal lymph node greater than 10 mm (maximum transverse diameter) is definitely metastatic.¹

CONCLUSION

Testicular cancers are mostly organ confined and have an overall good prognosis. Diagnostic imaging has an important role in the management of testicular cancer with several different imaging modalities employed over the spectrum of care in these patients including initial diagnosis and staging, response assessment after therapy and long term surveillance.

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