Case Report

Rare presentation of a seminoma with mixed germ cell tumor in undescended inguinal testis

Siddhartha Verma, Heeralal Jakhar*

Department of General Surgery, R.N.T. Medical College, Udaipur, Rajasthan, India

Received: 31 October 2018

Received: 01 December 2018

Accepted: 10 December 2018

*Correspondence:

Dr. Heeralal Jakhar,

E-mail: drheeralaljakhars@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Cryptorchidism is the most common predisposing factor in the development of testicular germ cell tumors. Seminoma is the most common malignancy developing in a cryptorchid testis. A rare case of seminoma with mixed germ cell tumor in an undescended testis is reported here. A 35-year-old male patient presented with swelling in left inguinal region since 1.5 year. This was smooth, firm to hard in consistency, restricted mobility and his left scrotum was empty. Serological markers α -FP, β -HCG, LDH were raised. Sonography and CT scan revealed a testicular tumor in undescended left inguinal testis. High inguinal orchidectomy was done. Patient had an uneventful recovery. The histopathology report of biopsy revealed a seminoma with mixed germ cell tumor. Early diagnosis and management of the undescended testicle are needed to preserve fertility and improve early detection of testicular malignancy. Therapy should begin between six months and two years of age and may consist of hormone or surgical treatment.

Keywords: Cryptorchidism, Mixed germ cell tumor, Undescended testis

INTRODUCTION

In humans, testis develop in the abdomen and normally descend into the lower portion of the scrotum during the third trimester. During the descent, it may be arrested anywhere along its tract (cryptorchidism) or may migrate into an abnormal position (ectopic testis). The most common sites of undescended testis are high scrotal (50%), canalicular (20%) and abdominal (10%), often bilateral (10%).¹ Cryptorchidism, the most common congenital anomaly of genitourinary tract in male is encountered 1% of boys. The cancer risk of an ectopic testis is 40 times higher in a normal testis. Furthermore, abdominal testis is four times more likely to undergo malignant transformation than an inguinal testis.² Testicular cancer is developed in 10% of the cases with undescended testicles.³ Other than infertility, associated inguinal hernia, torsion and malignant change in

undescended testis are common complications.⁴ The most common type of TGCT (testicular germ cell tumor) in cryptorchid testis is seminoma. This case seminoma with mixed germ cell tumor in undescended inguinal testis is unusual and rare.

CASE REPORT

A male aged 35 years presented with a painless, progressively enlarging swelling in the left inguinal region since 1.5 year. On examination, a large swelling of 12cmx10cm in the left inguinal region was present (Figure 1).

Surface of swelling was smooth, firm to hard in consistency, restricted mobility, non-tender, non-reducible, non-compressible, dull on percussion. His left scrotum was empty. Right side testis was palpable in

right scrotum. General physical examination and vitals were normal. History of tuberculosis and fracture left side femur was present. There was no history of infertility. Sonography revealed left testis seen in left inguinal region and appear bulky and show echo complex echo texture (suspected of neoplastic lesion). CT scan revealed heterogeneously enhancing soft tissue density mass with internal low attenuated area (89x67x108mm) is seen in left inguinal region with non-separate visualization of left testis. Suspected of neoplastic lesion and enlarged enhancing sub centimeter size lymph nodes as well are seen in left paraaortic region (Figure 2).

Right side testis was palpable in right scrotum.

Figure 1: A male aged 35years presented with a painless, progressively enlarging swelling in the left inguinal region since 1.5years. His left scrotum was empty.

Figure 2: Heterogeneously enhancing soft tissue density mass with internal low attenuated area (89x67x108mm) is seen in left inguinal region with non-separate visualization of left testis. Suspected of neoplastic lesion and enlarged enhancing sub centimeter size lymph nodes as well are seen in left paraaortic region.

His tumor markers α -FP (alpha fetoprotein)-40.59IU/ml, β -HCG (beta human chorionic gonadotrophin) >10000mIU/ml, LDH (lactate dehydrogenase) 507.27U/L. A clinical diagnosis of testicular tumor in an undescended testis was made and subsequently high inguinal orchidectomy was done (Figure 3). Patient had an uneventful recovery. Histopathology report revealed a seminoma with mixed germ cell tumor.

Figure 3A and 3B: High inguinal orchidectomy. A) Separation of tumor from surrounding structures after given inguinal incision. B) Two clamps were applied over spermatic cord one proximal to deep inguinal ring and second distal to first clamp.

DISCUSSION

Undescended testis is a very common congenital anomaly present in about 1-4.5% of newborn males with a higher incidence in preterm males (30-45%).^{4,5} Although the pathophysiology of malignant transformation in undescended testis is not completely understood. One hypothesis is a generalized defect in embryogenesis resulting in bilateral dysgenetic gonads. Right sided testicular undescend for unknown reasons is common than left. Bilateral undescended testis not as common as unilateral.⁶ Testis may descend into the scrotum in 75% of full-term neonates and in 90% of premature newborn boys in infancy and the incidence decreases to 0.8-1.2% at 1 year of age.⁷⁻⁹ Testicular tumors have highest incidence in the age group of 15-40 years.^{10,11} In present case report patient age was 35years.

A study published in Turkish Journal found that the presence of abnormal external genitalia, abdominal testes and abnormal karyotype was associated with increased risk of not only testicular germ cell tumours but also extragonadal germ cell tumours, which holds true even in Joshi MA et al, case report where patient had hypospadias and micropenis associated with cryptorchidism. However, in this case report external genitalia were normal except his left scrotum was empty. Right side testis was palpable in right scrotum but a tumour in an inguinal undescended testis was present.¹²

Althaf S et al, presented a rare case of pure seminoma in an undescended testis with synchronous metastasis to the urinary bladder.¹³ In this study, a seminoma with mixed germ cell tumor in an undescended inguinal testis was present.

Tumour in an undescended testis is more likely to be seminoma but tumours in testes previously corrected by orchiopexy are more likely to be non-seminomas.¹⁴ In this case report no past history of orchiopexy was present. Islam SR et al, in their case report, a 35-year-old man

presented with left undescended testis, histology showed immature seminoma.¹⁵

CONCLUSION

Testicular tumor in an undescended testis presenting as an inguinal mass is uncommon presentation. Seminomas are the most common tumor seen in undescended testis. Seminoma with mixed germ cell tumor in undescended inguinal testis is a very rare presentation. Early diagnosis and treatment give favourable results.

ACKNOWLEDGEMENTS

Authors would like to thank Department of General Surgery at R.N.T Medical College, Udaipur for valuable support during the study.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Dahnert W. Radiology review manual. Testicular tumor. 5th ed. Williams-Wilkins; 2003: 925.
2. Alshyarba MH. A giant intra-abdominal testicular seminoma. Biomed Res. 2010;21(3):227-229.
3. Cristián Palma C, Cristóbal B, Maccioni R. Seminoma in an adult cryptorchid testis (intra-abdominal): a case report. Act Urol Esp. 2007;31(2):160-3.
4. Ashley RA, Barthold JS, Kolon TF. Cryptorchidism: pathogenesis, diagnosis, treatment and prognosis. Urol Clin. 2010;37(2):183-93.
5. Hutson JM, Balic A, Nation T, Southwell B. Cryptorchidism. In: Seminars in pediatric surgery. WB-Saunders: 2010; 19(3) :215-224.
6. Joshi MA, Patel RS, Ramble R, Phad B. Seminoma in undescended inguinal testis: a rare case with review of literature. J Evol Med Dental Sci. 2016;5(102):7503-6.
7. Elder JS. The undescended testis: hormonal and surgical management. Surg Clin North Am. 1988;68(5):983-1005.
8. Khatwa UA, Menon PS. Management of undescended testis. Ind J Pediatrics. 2000;67(6):449-54.
9. Leissner J, Filipas D, Wolf HK, Fisch M. The undescended testis: considerations and impact on fertility. BJU Inter. 1999;83(8):885-91.
10. Chia VM, Quraishi SM, Devesa SS, Purdue MP, Cook MB, McGlynn KA. International trends in the incidence of testicular cancer, 1973-2002. Cancer Epidemiol Prevention Biomarkers. 2010;19(5):1151-9.
11. Bose S, Sengupta S and Mukherjee R. Seminoma in an Undescended Testis. SM J Surg. 2017; 3(2): 1018.
12. Cortes D, Thorup J, Petersen BL. Testicular neoplasia in undescended testes of cryptorchid boys- does surgical strategy have an impact on the risk of invasive testicular neoplasia. Turk J Pediatr. 2004;46:35-42.
13. Althaf S, Shankar K, Kurpad V, Suma MN. Seminoma of undescended testis with urinary bladder metastasis: a case report with review of literature. Urol Ann. 2017;9(1):77.
14. Chandrasekhar LV, Abdul Gaffer T, Venkatramana M, Rath S. A case of teratocarcinoma in abdominal testis: a case report. Internet J Radiol. 2005;4(1).
15. Islam SR, Rahman S, Sarkar S, Paul D. Intra-abdominal testicular tumour-a case report. Arch Surg Clin Res. 2018; 2: 025-028.

Cite this article as: Verma S, Jakhar H. Rare presentation of a seminoma with mixed germ cell tumor in undescended inguinal testis. Int Surg J 2019;6:611-3.