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Case Report

Synchronous Bilateral Testicular Germ Cell Tumor with Different Histology: A Case Report

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ABSTRACT

Testicular neoplasia occurring bilaterally is rare and even more when it is synchronic, with incidence of only 0.17% of germ-cell tumors of testicles. Most synchronous bilateral testicular tumors have an identical histological diagnosis. Very few cases of synchronous tumors with discordant histopathology are reported till date. Here, we report a case of 39-year old who presented with bilateral testicular swelling. Tumor markers were raised with bilateral testicular lesions on scrotal ultrasound. Bilateral orchidectomy was performed. Histopathology revealed a right mixed germ-cell tumor and left pure seminoma. This case is being presented for its rare occurrence.

Keywords: Germ Cell Tumor, Bilateral, Synchronous

INTRODUCTION

Testicular tumors constitute 1% of all malignancies. [1] Only about 2 to 3 percent of testicular tumors occur bilaterally. [2] A report was described on 2,431 germinative testicular tumors diagnosed and treated from 1978 to 1999, and only 24 of these cases were bilateral, and among them 20 were metachronic, that is, 1% of all tumors. Synchronic tumors were described in only 4 cases (0.17%). [3] Most synchronous bilateral testicular tumors have an identical histological diagnosis. Because there are no lymphatic or vascular connections between the testes, it is thought that synchronous tumors develop independently as two separate primary tumors. [4] Synchronous primary germ cell tumors of the testes with discordant histopathology are extremely rare. [5] We present a case of synchronous bilateral primary germ cell tumor with right mixed germ-cell tumor and left pure seminoma.

CASE REPORT

A 39 year old male presented with abdominal pain and right scrotal swelling. Clinical examination revealed bilateral nodular testicular swelling. There was no inguinal lymphadenopathy or organomegaly. Tumor markers were raised. Serum alpha fetoprotein of 2750 ng /ml, beta HCG of 760 mIU/ml and LDH of 523 U/L. Scrotal USG showed focal nodular lesions in both testes. He underwent bilateral high orchidectomy.

Gross Examination:

Right Testis was enlarged with cut section showing tumor mass of 2x1.5 cm at upper pole with areas of hemorrhage and necrosis. (Fig 1)

Left Testis was also enlarged with smooth outer surface and homogeneous greyish white area on cut section. (Fig 2)

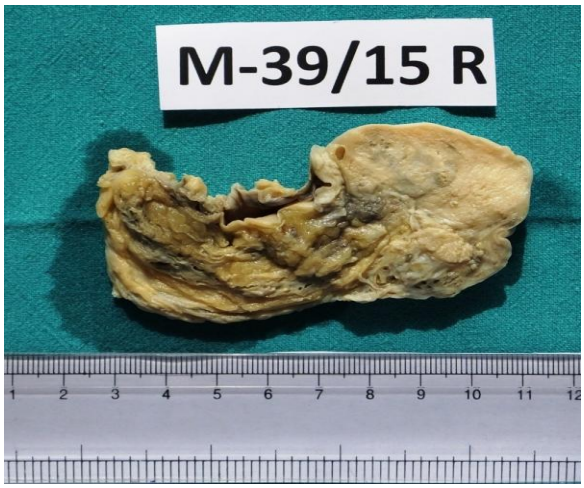

Fig 1:- Right Testis Specimen (Mixed Germ-Cell Tumor)

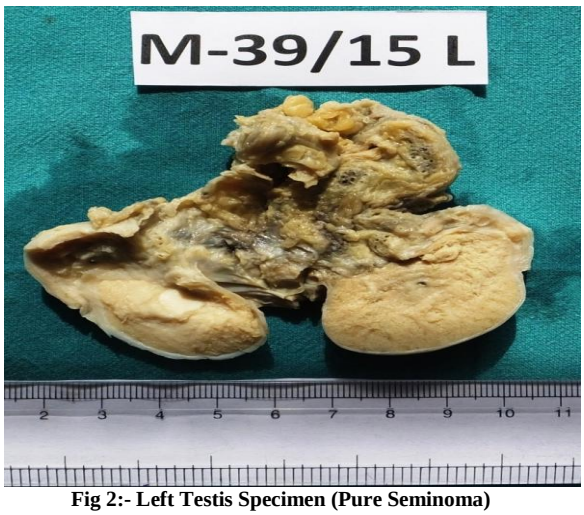

Fig 2:- Left Testis Specimen (Pure Seminoma)

Microscopic Examination:

Right Testis- showed cellular tumor in glandular arrangement with highly pleomorphic cells (embryonal carcinoma) with perivascular Schiller-duval bodies (yolk sac tumor) (PT1NXMO). (Fig 3,4)

Left Testis- showed monomorphic tumor cells which were arranged in sheets and clusters separated by fibrocollagenous septae infiltrated with lymphocytes. The individual tumor cells are round to oval with highly pleomorphic large vesicular nuclei with prominent nucleoli conforming diagnosis of pure seminoma (PT1NXMO). (Fig5) without involvement of tunica vaginalis or spermatic cord.

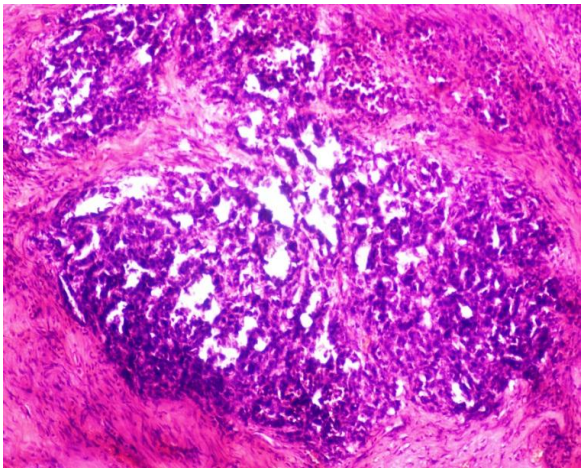

Fig 3:- Embyronal Carcinoma (H&E 100X)

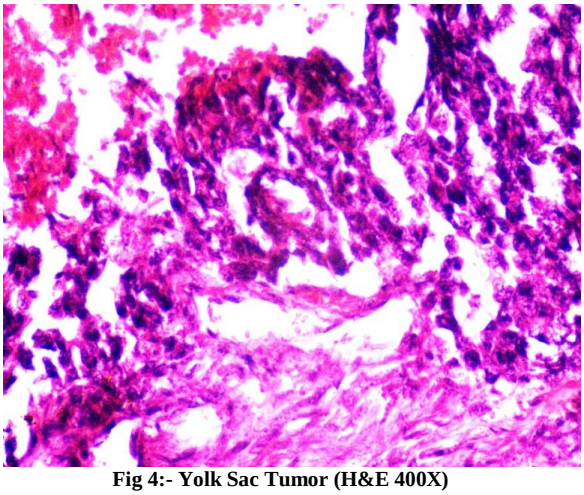

Fig 4:- Yolk Sac Tumor (H&E 400X)

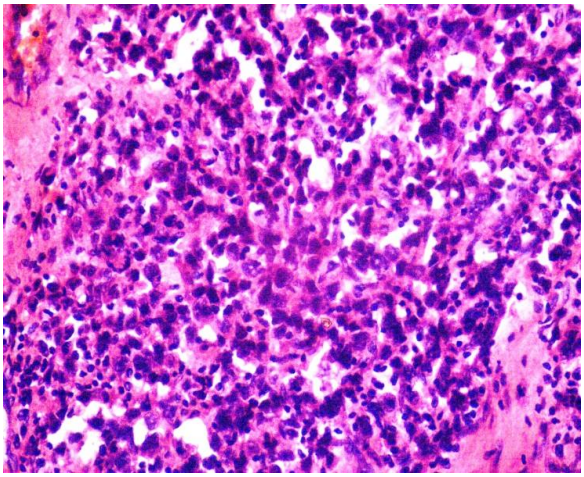

Fig 5:- Pure Seminoma (H&E 100X)

Post-operative serum markers showed alpha fetoprotein of 3.75 ng/ml, beta HCG of 1.2 mIU /ml and LDH of 152

U/L (within normal limit). Contrast enhanced CT Scan of abdomen and chest ruled out distant metastasis. Later, the patient was advised to undergo chemotherapy and regular follow up.

DISCUSSION

Testicular tumors constitute 1% of all malignancies, [1] of these only 2-3 % occur bilaterally. It is the most common solid malignancy affecting males between the ages of 15 and 35 years. Testicular germ cell tumours are the most common type of primary testicular

Malignancy. [6] Seminoma is the most common germ-cell tumor. [2] Others are choriocarcinoma, yolk sac tumor, teratoma and embryonal carcinoma. The useful serum markers are alpha-fetoprotein, beta-HCG and LDH. [7] Common sites of metastasis are retroperitoneum and mediastinal lymph nodes. Synchronous and metachronous testicular tumors account for 1% to 5% of all testicular cancer. [8-10] Among bilateral testicular tumors, only 5to 24% occur synchronously and the remaining 7 to 83% are metachronous. [9] Most common synchronous testicular tumors are seminomas, followed by embryonal carcinomas, teratocarcinomas, and choriocarcinomas. [11] Most synchronous bilateral testicular tumors have an identical histologic diagnosis. Tumors with discordant histology are extremely rare. [5]

In 2009, Suresh and associates reported the ninth case of synchronous bilateral germ-cell tumors with different histology like seminoma with contralateral mixed germ-cell tumor according to their review of the literature. [12]

In our case there was right mixed germ-cell tumor (embryonal carcinoma and yolk sac tumor) and left pure seminoma which is very rare according to review of literature. It is important to differentiate all the histological types present in the mixed germ cell tumor to help in prognostication and also monitoring the disease. The presence of embryonal carcinoma has a bad prognosis since there is a high chance of distant metastasis. [6,13] Elevated levels of serum alpha-fetoprotein (AFP) are seen in germ cell tumors with yolk sac component whereas elevated levels of serum human chorionic gonadotropin (HCG) are seen in germ cell tumours with choriocarcinoma component. [6,12,13] Although bilateral orhidectomy has been largely accepted as standard treatment for bilateral testicular tumors, several current studies have reported testis preserving surgery. Current guidelines contain little information related to the management of bilateral germ cell tumours. In general, Stage 1 mixed germ cell tumors are managed surgically with orchidectomy and postorchidectomy surveillance. If the patient cannot comply with surveillance or has high risk features like lymphovascular invasion, adjuvant chemotherapy is initiated. [14]

Our case was treated with bilateral high orchidectomy followed by 3 cycles of chemotherapy.

Overall, synchronous tumors were associated with more advanced disease and presented less favourable survival rates than metachronous tumors.

CONCLUSION

Synchronous bilateral testicular germ-cell tumors with different histology are very rare. Seminoma is the most common histologic type. Bilateral radical orchidectomy is the standard practice for patients with synchronous bilateral seminoma. Testis sparing surgical techniques should be done to prevent infertility and psychological effects of castration. Pre-orchidectomy sperm banking should be discussed with patients as well as made available for those patients who have not completed their family.

REFERENCES

1. Reinberg Y, Manivel JC, Zhang G, Reddy PK. Synchronous bilateral

testicular germ cell tumors of different histologic type. Pathological and practical implications of bilaterality in testicular germ cell tumors. Cancer 1991; 68(5): 1082-1085.
2. Akdogan B, Divrik RT, Tombul T, Yazici S, Tasar C, Zorlu F, et al. Bilateral testicular germ cell tumors in Turkey: increase in incidence in last decade and evaluation of risk factors in 30 patients. J Urol 2007; 178(1):129-133.
3. Che M, Tamboli P, Ro JY, Park DS, Ro JS, Amato RJ, et al.: Bilateral testicular germ cell tumors: twenty-year experience at M.D. Anderson Cancer Center. Cancer 2002; 95: 1288-33.
4. Coli A, Bigotti G, Dell'Isola C, Castri F, Rulli F, Massi G. Synchronousbilateral testicular germ cell tumor with different histology. UrolInt 2003;71: 412-7.
5. Adham W K, Ravat B K, Uzqulano M, Lemos L B. Bilateral testiculartumors: Seminoma and Mixed germ cell tumor. Radiographics 2005;25: 835-9.
6. Zequi SDC, da Costa WH, Santana TBM, Favaretto RL, Sacomani CAR, Guimaraes GC. Bilateral testicular germ cell tumours: a systematic review. BJU Int. 2012; 110(8):1102-9.
7. Ondrus D, Hornak M, Matoska J. Bilateral testicular germ-cell tumors – a single center long-term experience. IntUrolNephrol 2001; 33 (3):521-4.
8. Tabernero J, Paz-Ares L, Salazar R, Lianes P, Guerra JA, Borras J, et al. Incidence of contralateral germ cell testicular tumors in South Europe: report of the experience at 2 Spanish university hospitals and review of theliterature. J Urol 2004;171(1): 164-7.
9. Holzbelerlein J M, Sogani P C, Sheinfeld J. Histology and clinical outcomesin patients with bilateral testicular germ cell tumors: the Memorial SloanKettering Cancer Center experience 1950 to 2001. J Urol 2003; 169:2122-5.
10. Pamenter B, De Bono J S, Brown I L, Nandini M, Kaye S B, Russell J M,et al. Bilateraltesticular cancer: a preventable problem ? Experience from alarge cancer centre. B J U Int 2003; 92: 43-6.
11. Hoekstra H J, Mehta D M, SchraffordtKoops H. Synchronous bilateralprimary tumors of the testis: A case report and review of the literature. Journal of Surgical Oncology 1983; 22(1):59-61.
12. Suresh B P, Kumar P S, Mary M, Susmitha M S. Synchronous bilateralgerm-cell tumors of testis: A case report. The Internet Journal of surgery2009;21(2).
13. Belekar D, Dewoolkar V, Desai A, Anam J, ParabM. An Unusual Combination of Non-Seminomatous Mixed Germ-Cell Tumor of Testis. The Internet Journal of Surgery. 2008;19(1):2.
14. Scottish Inter Collegiate Guidelines Net York (SIGN). Management of adult testicular germ cell tumours. A national clinical guideline. Edinburgh 2011; 124:63.

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