

Case Report

Synchronously detected seminoma of both testis in a middle aged male with bilateral cryptorchidism

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ABSTRACT

Bilateral testicular tumours are rare and 80% occur metachronously. Synchronous bilateral testicular tumours are rare, and bilateral synchronous testicular tumours in bilateral cryptorchidism are extremely rare with only few cases reported previously. A 36 year old male patient presented to surgical OP with complaints of pain in scrotal region of both sides since 6-8 months. He was asymptomatic previously except for complaints of empty scrotal sac. Magnetic resonance imaging performed 6 months back revealed bilateral large oval to mildly irregular inguinal swellings with iso to hyperintense areas measuring 36×23×20 mm on right side and 34×26×20 mm on left side and patient was diagnosed with bilateral undescended testis. Bilateral orchidectomy was performed and the resected specimen was subjected to histopathologic examination. Gross visual examination of the bilateral orchidectomy specimen revealed the larger specimen to measure 7×4×1 cm with grey coloured external surface. Cut section revealed testis measuring 3.5×2 cm and surrounded with fibro adipose tissue. The testicle shows grey brown and grey white areas surrounding a central yellow nodule measuring 1×0.8 cm. The other mass had a yellowish nodular external surface and measured 5.5×4×1 cm. On cut section, normal testicular tissue could not be identified and the entire testis appeared to be replaced by a solid yellowish white homogenous tumour. Sections from the yellowish smaller mass revealed tumour composed of sheets and trabeculae of large polygonal cells with large vesicular nuclei with prominent nucleoli and abundant clear to vacuolated cytoplasm. Focal collections of histiocytes and occasional multinucleated giant cells were also seen. Sections from the other larger mass showed a thick fibrotic tunica albuginea with sclerosed and hypoplastic seminiferous tubules in areas of dense hyaline fibrosis. In the centre, a well circumscribed tumour was seen showing similar histologic features as in the contralateral mass. Epididymis did not show tumour infiltration.

Keywords: Testicular tumours, Bilateral, Synchronous, Cryptorchidism

INTRODUCTION

Bilateral testicular tumours are rare and 80% occur metachronously. Synchronous bilateral testicular tumours are rare, and bilateral synchronous testicular tumours in bilateral cryptorchidism are extremely rare with only few cases reported previously.

CASE REPORT

A 36 year old male patient presented to surgical OP with complaints of pain in scrotal region of both sides since 6-

8 months. He was asymptomatic previously except for complaints of empty scrotal sac. Magnetic resonance imaging performed 6 months back revealed bilateral large oval to mildly irregular inguinal swellings with iso to hyperintense areas measuring 36×23×20 mm on right side and 34×26×20 mm on left side and patient was diagnosed with bilateral undescended testis. Bilateral orchidectomy was performed and the resected specimen was subjected to histopathologic examination.

The surgically resected specimens of bilateral radical orchidectomy were fixed in 10% formal saline after

giving a sagittal incision to each testicle. Proper inspection of the gross features to identify the presence of any pathology was performed. Serial slicing of about 3 mm thickness, stopping at the level of tunica albuginea with simultaneous meticulous examination of the cut surface was done. 2×2×0.5 cm tissue bits taken from the representative areas of both testicles and the resected margins, were properly labelled and subjected to further formalin fixation, dehydration in ascending strengths of alcohol, clearing in hydrocarbon xylene, followed by impregnating and embedding with molten paraffin wax. 3-4 micron thick sections were cut with rotary microtome, stained with Harris haematoxylin and eosin, mounted on glass slides in DPX and subjected to microscopic evaluation under increasing strengths of power. The slides were examined from upper left corner moving in zig-zag fashion upto the lower right corner of section. The architectural and cytological features were noted, with the intent to classify the histologic type of testicular tumour and ascertain its extent of invasion.

Gross visual examination of the bilateral orchidectomy specimen revealed the larger specimen to measure 7×4×1 cm with grey coloured external surface. Cut section revealed testis measuring 3.5×2 cm and surrounded with fibro-adipose tissue. The testicle shows grey brown and grey white areas surrounding a central yellow nodule measuring 1×0.8 cm. The other mass had a yellowish nodular external surface and measured 5.5×4×1 cm. On cut section, normal testicular tissue could not be identified and the entire testis appeared to be replaced by a solid yellowish white homogenous tumour.



Figure 1: Cut surface of bilateral orchidectomy specimen.

Microscopic examination

Sections from the yellowish smaller mass revealed tumour composed of sheets and trabeculae of large polygonal cells with large vesicular nuclei with prominent nucleoli and abundant clear to vacuolated cytoplasm. Focal collections of histiocytes and occasional multinucleated giant cells were also seen. Sections from the other larger mass showed a thick fibrotic tunica albuginea with sclerosed and hypoplastic seminiferous tubules in areas of dense hyaline fibrosis. In the centre, a

well circumscribed tumour was seen showing similar histologic features as in the contralateral mass. Epididymis did not show tumour infiltration.

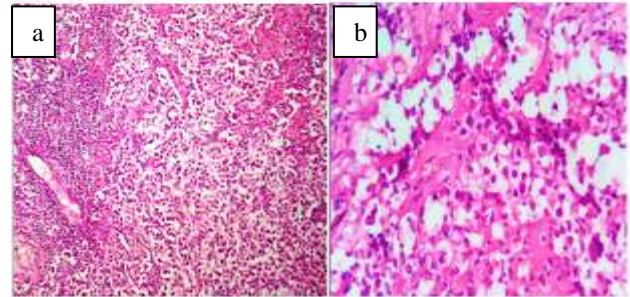


Figure 2: Microscopic examination.

a. Presence of sheets and trabeculae of large polygonal cells with large vesicular nuclei with prominent nucleoli; b. High power view.

DISCUSSION

Testicular neoplasms constitute 1% of all tumours.¹ The incidence of testicular cancers has increased considerably in the past few century. Germ cell tumours affect 0.005% of the general population, mainly involving the young age group of 15-35 years.² Cryptorchidism is more common and affects 5-6% of full term babies and 25% of preterms.¹

Cryptorchidism is unilateral in 80% of cases and bilateral in the remaining 20%.³ Cryptorchid testis is 30-50 times more likely to develop a malignant neoplasm.³ In a study by Gilbert and Hamilton, 10.9% of testicular germ cell tumors occurred in cryptorchid organs.⁴ Bilateral testicular involvement by germ cell tumors is seen in only 1.0-2.7% of cases.⁵ Risk of bilaterality increases to 15% in bilateral cryptorchidism. It can be seen metachronously or less commonly synchronously.³

Synchronous bilateral testicular tumours account for less than 1% cases of testicular carcinoma. Most synchronous testicular tumours are classic or spermatocytic seminomas. Other tumours reported include embryonal carcinoma, teratocarcinoma and choriocarcinoma.⁶

Grossly, seminoma has a characteristic gross appearance, solid, homogenous, light yellow with areas of necrosis.³

Microscopically, in classic seminoma, the individual tumor cells are uniform with abundant clear cytoplasm, sharply outlined cell membranes, large centrally located nucleus with clumped chromatin. Nucleolus is amphophilic, elongated with irregular contours. The tumour cells are arranged typically in nests outlined by fibrous bands, with lymphoplasm histiocytic infiltration of these bands in 80% of cases. The number of mitoses is highly variable. The cells contain variable amount of cytoplasmic glycogen giving a clear appearance to the cytoplasm.³

CONCLUSION

Bilateral synchronous testicular germ cell tumours in bilateral cryptorchid testis are a rare occurrence, with seminoma being the most common histologic diagnosis. The pathologist should keep in mind, the possibility of synchronous incidental involvement of the contralateral undescended testis and perform a meticulous search during gross inspection, with serial sectioning of suspicious areas with thorough microscopic examination. Stringent follow up of cases should be suggested where unilateral orchidectomy is performed.

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REFERENCES

1. Bani Hani K, Matani YS, Bani Hani IH. Cryptorchidism and testicular neoplasia. Saudi Med J. 2003;24(2):166-9.
2. Kumar P, Kumar R, Tiwari SK, Khanna AK. Bilateral synchronous testicular germ cell tumours in a patient with bilateral cryptorchidism. S Afr J Surg. 2012;50(3):96-7.
3. Rosai, Ackerman. Surgical pathology. Volume 1. 9th edition. Edinburg: Elsevier; 2004: 1414-1431.
4. Gilbert JB, Hamilton JB. Studies in malignant testis tumours. Surg Gynecol Obstet. 1940;71:731-43.
5. Patel SR, Richardson RL, Kvols L. Synchronous and metachronous bilateral testicular tumours. Mayo Clinic Experience. Cancer. 1990;65:1-4.
6. Hoekstra HJ, Mehta DM, Koops HS. Synchronous bilateral primary germ cell tumors of the testis: A case report and review of the literature. J Surg Oncol. 1983;22:59-61.

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