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BILATERAL SYNCHRONOUS TESTICULAR TUMOUR – A CASE REPORT WITH REVIEW OF LITERATURE

Urology

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ABSTRACT

Testicular tumours are rare malignancy but it is the most common malignancy among males aged 20-40years. Testicular tumour represents 1% - 1.5% of male neoplasm and 5% of urological tumours. The incidence of bilateral germ cell tumours is approximately 2.5%

A 35 years patient presented with swelling in the lower abdomen and left side of the scrotum for the last 3 months. On examination - A lump felt in the lower abdomen with swelling of left testis. On ultrasonography of abdomen and scrotum, Solid hypoechoic space occupying lesion in pelvic cavity and the left side of left scrotum. AFP, β HCG & LDH levels were elevated. CECT abdomen revealed a large abdomino-pelvic mass with a soft tissue mass in the left scrotal sac with empty right scrotal sac with minimal left sided pleural effusion. Patient was subjected for primary chemotherapy. Patient responded the chemotherapy partially and died after 6 months.

KEYWORDS

Testicular tumour, bilateral tumour, synchronous, chemotherapy.

Introduction

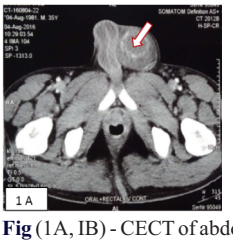
Testicular tumours are not a common malignancy, but it is the most common malignancy among males aged 20-40years (1). Testicular tumour represents 1% -1.5% of male neoplasm and 5% of Urological tumours. In India, incidence of testicular tumour is 0.9% of male tumours. Worldwide the incidence of testicular tumour is increasing (2).The incidence of bilateral germ cell tumours is approximately 2.5% (0.6% risk of synchronous and 1.9% risk of metachronous contralateral tumours) (3).

Testis tumours have three age peaks: infancy, age 30 - 34 years, and approximately age 60 years. Above 60 years lymphoma is the most common bilateral testicular tumour through dissemination from other sites.

We report here a case of synchronous bilateral testicular tumour.

Case history

A 45years old married male presented with a swelling in the lower abdomen & left side of scrotum for last 3 months which was gradually increasing in size along with dull aching pain abdomen. There was no history of trauma & urinary symptoms. The patient also gave history of absence of right testis in the scrotum since birth .On general examination there was pallor and bilateral pitting oedema. On local examination there was a firm, non tender mass on the left side of scrotum of size -5x4cm and the right scrotal sac was empty. On systemic examination, a lump was felt in the lower abdomen extending above the umbilicus of size -10x9c.m which was firm in consistency, lobulated and immobile with ascites. Ultrasonography of whole abdomen and scrotum(with Doppler study) revealed a solid hypoechoic space occupying lesion in the pelvic cavity of size 15.8x9.8c.m and in the left side of scrotum of size - 7.2x5.2cm and left testis could not visualised separately and absent testis in the right scrotum.



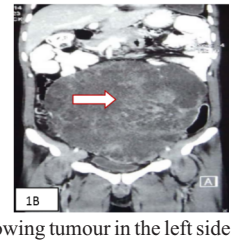


Fig (1A, IB) - CECT of abdomen, 1A – Showing tumour in the left side of scrotum with empty right scrotal sac, 1B – Showing mass in the pelvic cavity

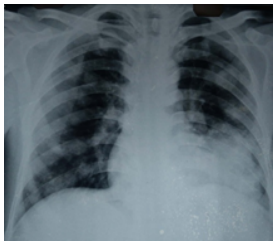


Fig 2 – PA view chest showing multiple opacities suggestive of metastasis in the both lung field

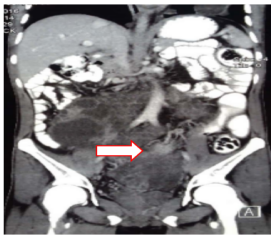


Fig 3 – Post chemotherapy CECT scan showing regression of the tumour

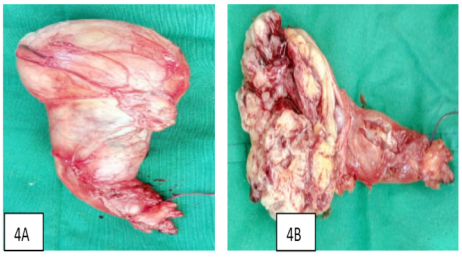


Fig 4A – Radical orchidectomy specimen
4B – Cut specimen of radical orchidectomy showing testicular mass replacing the whole testis

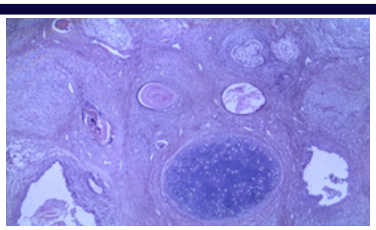


Fig 5 – Histological suggestive teratoma (*under low power*)

On further evaluation with computed tomography revealed a large heterogeneously enhancing mass in the abdomino-pelvic area of size - 17.2x10.3x6.7cm and in the left scrotal sac of size 7.8x6.5cm with empty right scrotal sac with minimal left sided pleural effusion (Fig 1A & 1B). Heterogenously enhancing enlarged nodes in left para-aortic, interaortocaval, left common iliac and external iliac with largest one measuring 30x16mm. The tumour markers were elevated (α FP - 284.80 IU/ml, β HCG -88.74 mIU/ml, LDH - 4043 U/L).PA view chest showed multiple nodular opacities in the both lung suggestive of metastasis (Fig -2) for which HRCT thorax was done which showed multiple metastasis. After evaluation, patient underwent left radical orchidectomy and FNAC from the pelvic mass. Histopathological reports revealed mature teratoma (Fig -5). Patient received 4 cycles of bleomycin, etoposide and cisplatin (BEP) with partial response which was evident by post chemotherapy CECT abdomen (Fig 3)

Patient was planned for 2nd line of chemotherapy but the patient died after 6 months with progressive disease.

Discussion

Testicular tumour is the most common malignancy among males aged 20-40yrs (1). Testicular tumour represents 1% -1.5% of male neoplasm and 5% of Urological tumours.

There are four well established risk factors for the development of testicular tumour. These are cryptorchidism, family history of testicular cancer, a personal history of testicular cancer and intratubular germ cell neoplasia (ITGCN).

Most of the germ cell tumours arises from a lesion known as intratubular germ cell neaoplasia (ITGCN) which is also known as carcinoma in situ.ITGCN is present in adjacent testicular parenchyma in 80% - 90% of cases of invasive germ cell tumour (GCT) and is associated with a 50% risk of GCT within 5 years and 70% within 7 years.

According to Dieckmann KP et al (4) bilateral and unilateral testicular tumour was seen in 9.5% and 1.2% respectively in patients with cryptorchidism.

Germ cell tumours accounts for more than 95% of testicular tumour. Germ cell tumours constitute seminoma (52-65%) and non seminoma (44-48%). Non seminomatous germ cell tumours include embryonal carcinoma (EC), yolk sac tumour, teratoma, and choriocarcinoma subtypes, occurring either alone as pure forms or in combination as mixed GCT with or without seminoma.

The first documented case of bilateral testicular germ cell tumours was reported by Bidard in 1853 (5).In 1941, Gilbert first investigated on bilateral testicular tumour. Incidence of bilateral testicular tumour was reported as 1.56% (6) and 5.8% (7).

Bilateral testicular tumour may be synchronous or metachoronous. The incidence of synchronous and metachronous tumour is 1-2.8% & 2.4-5.2 respectively (8). According to Holzbeierlein et al (9) the incidence of bilateral testicular tumour was 1.82% including metachronous (1.26%) and synchronous (0.56%). Synchronous bilateral germ cell tumours (SBGCT) tend to be of the same histological type, mostly seminoma in 80% of the cases (10).In our case it was teratoma which is rare.

Presentation of testicular tumour may vary. The most common presentation is painless testicular mass. Regional or distant metastasis may present as palpable mass, abdominal pain, lower extremity swelling, respiratory difficulty, chest pain, gynaecomastia.

The treatment of patients with synchronous BGCT is based upon the clinical stage and the histopathological type of the tumours and should not be different from the standard management of unilateral testicular carcinoma (11).

The standard treatment option for synchronous BGCT is bilateral radical inguinal orchiectomy (12). This procedure may require androgen replacement therapy. This modality of treatment has been described by Tekin et al. in 11 patients and no other adverse effect of testosterone replacement therapy was found (13). Synchronous bilateral testicular germ cell tumour was treated by bilateral orchiectomy, followed by two courses of BEP therapy postoperatively [Lopez et al.] (14).

Partial orchidectomy is another modality of treatment in patient with tumour volume <30% (European Urological Association guideline) of testicular volume or tumour size < 25mm in case of bilateral tumour (11).This procedure was first performed by Richie in 1984.But in this technique, the chance of development of ITGCN is very high. So adjuvant radiotherapy (16-20Gy) should be instituted in all patients at some point of time or else strict post operative surveillance is mandatory.

Another alternative treatment modality which was described by Tomita et al in bilateral testicular germ cell tumour is radical orchidectomy for larger testicular volume with contralateral testis sparing surgery followed by 3 courses of BEP chemotherapy in 8 patients (10). Bokemeyer et al. also confirmed the therapeutic role of chemotherapy in cases of contralateral testis sparing surgery (15).

The treatment of patients with synchronous BGCT is based upon the clinical stage and the histopathological type of the tumours, determined by the most malignant component present (8) and should not be different from the standard initial management in unilateral testicular carcinoma (9). After bilateral orchidectomy many adjuvant forms of therapy are advocated.

In the case of synchronous bilateral stage I seminomatous germ cell tumours, surveillance, adjuvant radiotherapy, or platinum-based chemotherapy is a reasonable option following orchiectomy. The current standard of care is adjuvant radiotherapy (12).Radiotherapy doses of 20–25 Gy, directed to the retroperitoneal lymph nodes with excellent local control. There are several series reporting adjuvant radiotherapy in bilateral seminoma (16).

Surveillance is an option for stage I seminoma, now accepted as category 1 evidence in the USA. Currently there are no any literatures supporting surveillance in case of bilateral seminoma.

In stage IIA/IIB seminoma chemotherapy with three cycles of BEP is an alternative to radiotherapy. Whenever the stage is >IIC, three or four cycles of BEP should be used.

In Stage I NSGCT, treatment options are surveillance, primary chemotherapy and retroperitoneal lymph node dissection (RPLND).

In Stage IIA/IIB NSGCT optimal treatment are controversial. RPLND (with or without adjuvant chemotherapy) and induction chemotherapy (with or without RPLND) are the accepted treatment option.

In stage IIC/III NSGCT, with good risk patient is treated with 3 cycle of BEP. 3 cycles or 4 cycles of EP with 5 years survival is 91-95%. In intermediate and poor risk patients 4 cycles of BEP is the standard regimen.

Teratoma is resistant to chemotherapy and presence of metastatic teratoma is a limitation to any strategy of NSGCT for which chemotherapy & post chemotherapy surgery should be considered.

Our patient presented stage III disease, so we proceeded with left radical orchidectomy with 4 cycles of adjuvant chemotherapy (BEP).

Our patient presented with large abdominal mass with lung metastasis so we advocated left radical orchidectomy with FNAC from the pelvic mass. Reports revealed teratoma. Systemic chemotherapy was started with standard BEP regimen for 4 cycles. Our patient responded only partially, so 2nd line chemotherapy was planned but unfortunately the patient expired after 6 months.

Conclusion

Bilateral synchronous testicular germ cell tumour is a rare entity. Mostly histology is similar on both sides usually being seminoma. But in our case the histology was teratoma which is rare. Treatment is not different from unilateral testicular tumour. In young individual sperm cryopreservation and testosterone replacement therapy should be contemplated. We are reporting this case due to the rarity of bilateral synchronous germ cell tumour in our region and aggressive nature of the disease. We like to mention that such cases should be dealt with combine surgery and chemotherapy.

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