Seminom tedavisi sonrası metakron testiküler embryonal karsinom gelişimi. Benzer iki vakanın sunumu

Metachronous testicular embryonal carcinoma after the treatment of seminoma. A report of two similar cases

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Özet

Giriş: Testiküler germ hücreli tümör öyküsü olan hastalar metakron testiküler tümör gelişimi için yüksek risklidir. Seminom, bilateral testiküler germ hücreli hastalığın en yaygın tipidir. Burada, seminom tedavisi sonrası nadir görülen metakron embryonal karsinom gelişen iki vaka sunulmuştur.

Vaka 1: Ocak 2011'de 25 yaşında, sol testiküler kitle nedeniyle orşiektomi yapılan hastanın patoloji sonucu klasik seminom, evre pT1'dir. Operasyon sonrası batın ve toraks bilgisayarlı tomografi (BT) incelemesinde patoloji saptanmamıştır. Profilaktik amaçlı para-aortik alana radyoterapi uygulanmıştır. Aralık 2015'de yapılan sağ testiküler ultrasonda12 x 9 x 11 mm heterojen, hipoekoik alan saptanmıştır. BT ve serum tümör belirteçlerinde patoloji izlenmemiştir. Sperm dondurma sonrası sağ testiküler eksplorasyon yapılmış, frozen biyopsi patolojisi embryonal karsinom rapor edilmesi üzerine de sağ radikal orşiektomi yapılmıştır. Onkoloji kliniği ile konsülte edilen hastaya tek doz karboplatin verilmiştir. Operasyon sonrası 11. ayda hastada tümörsüz olarak takip edilmektedir.

Vaka 2: Ocak 2011'de 26 yaşında, sağ atrofik testis ve sol testiküler kitle nedeniyle sperm dondurma sonrası sol orşiektomi yapılan hastanın patolojisi klasik seminom, evre pT1'dir. Operasyon sonrası kontrol BT'de sol para-aortik ve sol renal hiler lenf nodlarına radyoterapi uygulanmıştır. Ekim 2015'e kadar nükssüz takip edilen hastada, bu tarihte yapılan kontrol sağ testiküler ultrasonda 6 x 5.5 x 5 mm heterojen, solid lezyon saptanmıştır. BT ve serum tümör belirteçlerinde patoloji olmayan hastaya sağ ra-

Abstract

Introduction: Patients diagnosed with testicular germ cell tumors have higher risk of developing metachronous testicular tumors. Seminoma is the most prevalent type of bilateral testicular germ cell disease. We report the cases of two patients with metachronous testicular embryonal carcinoma after the treatment of seminoma.

Case 1: A 30-year-old patient underwent left orchiectomy for a testicular classical seminoma stage pT1 at the age of 25 years on January 2011. A postoperative computed tomography (CT) scan of the chest and abdomen were normal. He underwent prophylactic radiotherapy to para-aortic field. He remained well until December 2015 when an ultrasound scan of the right testis showed an 12 x 9 x 11 mm heterogeneous hypoechogenic areas. A CT scan of the chest and abdomen and the blood serum tumor markers were normal. After the sperm cryopreservation, the patient underwent right testicular exploration of the palpable lesion and excisional biopsy. Analysis of frozen biopsy sections revealed an embryonal carcinoma and radical orchiectomy was performed. Following consultation at an oncology clinic, the patient consented to treatment with a single dose of carboplatin. The patient is free from recurrence 11 months after the treatment.

Case 2: A 31-year-old patient with a history of left testicular seminoma stage pT1 and right atrophic testis (8 cc), underwent left orchiectomy after the sperm cryopreservation on January 2011. A postoperative CT scan of abdomen revealed that the presence of left paraaortic and

dikal orşiektomi yapılmıştır. Patolojisi teratom ve ITGCN ile birlikte embryonal hücreli karsinom olarak rapor edilen hasta, tedavi sonrası 12. ayda nükssüz olarak takip edilmektedir.

Yorum: Testiküler germ hücreli tümör tedavisi sonrası metakron testis tümörü gelişim riski nedeniyle karşı taraf testise fizik muayene ile birlikte testiküler ultrason yapılması, ikincil tümörlerin erken tanısına katkı sağlamaktadır.

Anahtar Kelimeler: Metakron testis tümörü, embryonal karsinom, seminom, radyoterapi

renal hilar lymph nodes. The patient underwent radiotherapy to para-aortic field and left renal hilum. The patient remained well until October 2015 when an ultrasound scan of the right atrophic testis showed an 6 x 5.5 x 5 mm heterogeneous solid lesion. A CT scan of the chest and abdomen and the blood serum tumor markers were normal. The patient underwent radical right orchiectomy. The pathological diagnosis was embryonal carcinoma combined with teratoma and ITGCN. The patient remained under surveillance and he is free from recurrence 12 months after the right orchiectomy.

Conclusion: A closely follow-up protocol included physical examination and scrotal ultrasound evaluation of the contralateral testis made possible early diagnosis of the second tumor.

Keywords: Metachronous testicular tumor, embryonal carcinoma, seminoma, radiotherapy

Introduction

Testicular tumor represents 1% of all cancers and 5% of urological tumours in men, with 3-10 new cases occurring per 100,000 men/per year (1). The incidence of bilateral testicular germ cell cancer is 1.82% of patients with testicular germ cell tumors (2). Bilateral testicular cancers that occur at different times are termed metachronous tumors. Metachronous testicular tumor is diagnosed when there is an absence of a contralateral testicular tumor at diagnosis of the first tumor and when at least six months pass between the appearance of the first and second tumor (3).Seminoma is the most common type of metachronous testicular tumor (4). In this report, we presented two rare and similar cases of metachronous testicular germ cell tumors.

Case 1

A 30-year-old male patient underwent left orchiectomy for a left testicular seminoma at the age of 25 years on January 2011. Preoperative and postoperative tumor markers were normal. The histopathological examination revealed classical seminoma, stage pT1. A postoperative computed tomography (CT) scan of the chest and abdomen were normal. He underwent prophylactic radiotherapy to para-aortic field to a dose of 20 Gy in 15 fractions. A clinical examination at that time was unremarkable with a normal contralateral testis and the patient was kept on a surveillance program. He remained well until December 2015 when an ultrasound scan of the right testis showed an 12 mm x 9 mm x 11 mm heterogeneous hypoechogenic areas. A CT scan of the chest and abdomen showed no evidence of metastases. The blood serum tumor marker levels were within normal limits (α-fetoprotein (AFP) = 4.3 ng/ml, β-human chorionic gonadotropin (β-hCG) = 0.1 U/ml, lactate dehydrogenase (LDH) = 158 IU/l). The patient's serum testosterone level was 2.92 ng/ml. The possibility of testis-sparing surgery and radical orchiectomy was discussed with the patient. **After the sperm cryopreservation, the operation was performed under spinal anesthesia. Through an inguinal approach, the spermatic cord was isolated and clamped fleetingly to occlude the spermatic vessels. Intraoperative identification of the lesion was accomplished by palpation. The tunica albuginea overlying the lesion was incised and the nodule was excised at exploratory surgery. Resected tumor was subjected to frozen section analysis.** Analysis of frozen biopsy sections revealed an embryonal carcinoma and radical right orchiectomy was performed. The final pathological diagnosis was an embryonal carcinoma and multifocal intratubular germ cell neoplasia (ITGCN). Following consultation at an oncology clinic, the patient consented to treatment with a single dose of carboplatin. He also received androgen replacement therapy with testosterone undecanoate every 12 weeks and follow-up was started following standart protocol. The patient is free from recurrence 7 months after the diagnosis of embryonal carcinoma and erection and ejaculation are possible.

Case 2

A 31-year-old male patient with a history of left testicular seminoma and right atrophic testis (8 cc) underwent left orchiectomy after the sperm cryopreservation on January 2011. The histopathological examination revealed classical seminoma which was presented with pT stage 1. Preoperative and postoperative tumor mark-

ers were normal. A postoperative CT scan of abdomen revealed that the presence of 13 x 6 mm left paraaortic lymph node, 18 x 8 mm and 11 x 5 mm lymph nodes at the renal hilum. CT scan of the chest was normal. The patient underwent radiotherapy to para-aortic field and left renal hilum to a dose of 25 Gy in 23 fractions. The patient remained well until October 2015 when an ultrasound scan of the right atrophic testis showed an 6 mm x 5.5 mm x 5 mm heterogeneous solid intratesticular lesion localized to the upper pole of the testis. A CT scan of the chest and abdomen showed no evidence of metastases or lymphadenopathy. The blood serum tumor marker levels were within normal limits (AFP = 1.5 ng/ml, β-hCG = 0.71 U/ml, LDH = 187 IU/l). The patient's serum testosterone level was 1.06 ng/ml. The possibility of testis-sparing surgery and radical orchiectomy was discussed with the patient and he prefered testis-sparing surgery. **After the sperm cryopreservation, the operation was performed under spinal anesthesia. Through an inguinal approach, the spermatic cord was isolated and clamped fleetingly to occlude the spermatic vessels. The tunica albuginea overlying the lesion was incised and the nodule was excised at exploratory surgery. Resected tumor was subjected to frozen section analysis.** The use of frozen section of the enucleated mass demonstrated ITGCN. However, the final pathological diagnosis was embryonal carcinoma combined with teratoma and ITGCN. Due to the final pathology report, radical right orchiectomy was performed for the rest of testicular tissue. Pathological investigation of the testicular tissue indicated absence of malignancy. The patient remained under surveillance and he is free from recurrence 8 months after the right orchiectomy. He received androgen replacement therapy with testosterone undecanoate every 12 weeks and erection and ejaculation are possible.

Discussion

Testicular tumor patients remain at increased risk of developing contralateral testicular tumor duration of follow-up (5,6). In a large cohort study testicular germ cell tumor patients had an approximately 18-fold increased risk to develop a metachronous contralateral germ cell tumor compared with male population (7). A systematic literature review reported the results of 50376 male patient with testicular germ cell tumor from many countries between 1991 and 2011. The prevalence of bilateral testicular germ cell tumor was 1.82% and among those, 69.2% had metachronous tumors and 30.8% had synchronous tumors (2). Fossa et al. reported the results of 29515 testicular germ cell tumor patients and they demonstrated that the 15-year cumulative incidence of metachronous germ cell tumor was 1.9% and showed no increased mortality of patients with metachronous testicular cancer compared with unilateral testicular cancer (5).

Most metachronous tumors are determined by patient self-examination or physician examination or by the physician via scrotal ultrasonography. In the patients described in this case study, the tumors were not palpable, we determined both tumors via routine ultrasonographic scrotal screening. Ultrasonography is an easy and safe screening procedure for discovering metachronous testicular tumor.

In a majority of second testicular germ cell tumors arise within 6 years after the first tumor (5). When the histological type of the second tumor is nonseminoma, the median interval between tumors intends to be shorter compared with that when the second tumor is seminoma (8). In the patients described in our case study, secondary testicular tumors which were diagnosed with embryonal carcinoma occured within 5 years.

Seminoma is the most common histological type of unilateral and bilateral testicular tumor. Sun et al reported that approximately 68% of cases with bilateral metachronous testicular tumors present with seminoma (8). There is not enough information about the histological type of new, second primary testicular germ cell tumor, in the literature. In our case study, first tumors were seminoma and second tumors were embryonal carcinoma, in both cases.

The patients in our present cases received adjuvant radiation therapy after the onset of the first tumor. Jones et al reported that the incidence of contralateral testicular tumor was indicated not to be significantly changed by the radiation therapy for the first testicular tumor (9). In a randomized study, patients with stage 1 seminoma underwent orchiectomy and were given adjuvant treatment with irradiation of retroperitoneal lymph nodes or with a single dose of carboplatin (10). 885 patients received radiotherapy and 560 patients received carboplatin.

New, second primary testicular germ-cell tumours were showed in 10 patients allocated irradiation and 2 patients allocated carboplatin (5-year event rate 1·96% [95% CI 1·0–3·8] vs 0·54% [0·1–2·1], p=0·04). However, Sun et al reported that the incidence of bilateral testicular cancers in the postchemotherapy era was three times higher than that in the prechemotherapy era (8). The patients reported here had radiotherapy without chemotherapy in the past and both patients developed new, second primary tumor.

Another controversial issue is whether first histological type of seminoma or nonseminoma leads to higher contralateral testicular cancer. According to the MD Anderson group, if the first tumor was nonseminoma, it had an incidence of 0.6% and if it was seminoma, its incidence was 1.6%. However, James et al showed the risk of bilateral tumors was 8.4% for nonseminomas compared to 3.6% for seminomas (11).

The etiology and risk factors of bilateral testicular cancer remains unclear. The changing prevalence of known risk factors for testicular germ cell tumor include infertility, history of cryptorchidism, hypospadias, Klinefelter syndrome, familial history of testicular tumors among first-grade relatives, and the presence of contralateral testicular tumor or testicular intraepithelial neoplasia may also be influencing the incidence trends (12-14). Our first patient involved no known environmental or genetic risk factors. But our second patient's medical history was remarkable for atrophy of the right testis. The incidence of ITGCN positively correlates with the presence of atrophic testis. About one-third of patients with testicular germ cell tumor and an atrophic contralateral testis who present before the age of 30 years will have ITGCN in the contralateral testis (15). However, the morbidity of ITGCN treatment, and the fact that most of metachronous tumours are at a low stage at presentation make it controversial to propose a routine contralateral biopsy in all patients.

Conclusion

Patients with a primary testicular seminoma may carry an increased risk of a metachronous second primary testicular nonseminomatous tumor without elevated serum tumor markers. A closely long-term follow-up protocol included physical examination and annual scrotal ultrasound evaluation of the contralateral testis might be an appropriate option. Partial orchiectomy is an option to decrease morbidity in patients with a metachronous germ cell tumor; however, it should be discussed with all patients.

Compliance with ethical standards

Conflict of interest None declared

Ethical standard All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional review board and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

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