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Editorial Office
Dr. Nagraj G. Huilgol
Division of Radiation Oncology
Dr. Balabhai Nanavati Hospital
S. V. Rd, Vile Parle (W),
Mumbai - 400 056, India
Tel. 91 22 26182255 ext 618,
Telefax (direct) 91 22 26119363
E-mail: nagrajh@vsnl.net

Publication Office
Medknow Publications,
A-108/109 Kanara Business Centre,
Ghatkopar (E), Mumbai - 400075,
India.
Phone: 91-22-6649 1818 / 1816
E-mail: publishing@medknow.com
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Synchronous dual malignancy: Successfully treated cases

ABSTRACT

The occurrence of a second malignancy in a patient with a known malignant tumour is not uncommon. Synchronous primary malignancies are still unusual We are presenting two cases treated successfully at our centre. Case report 1-A 70 year old female presented to us with lump in right breast for two years and bleeding per vaginum for two years.Histopathology of cervix showed squamous cell carcinoma (large cell non keratinizing) and clinical stage was IIIB. HPE mastectomy specimen showed infiltrating duct carcinoma and stage II. Patient was treated with external beam radiotherapy for carcinoma cervix and breast simultaneously and chemotherapy as required. Patient is on regular follow up and clinically no evidence of disease. Case Report 2 -A 40 year old female presented with mild headache off and on for one year, projectile vomiting for three months and right side facial swelling for three months. HPE brain tissue showed astrocytoma grade II and HPE parotid tumour showed low grade muco-epidermoid carcinoma. Patient was treated with surgery first then radiotherapy. Patient is in regular follow up,having no complain,clinically no neurological dysfunction and no evidence of disease at right parotid and neck region. Thus it was concluded that patients responded well to treatment. Treatment strategies in case of synchronous double malignancy depend on treating the malignancy that is more advanced first or sometimes both could be treated simultaneously. In our case we concluded that synchronous double malignancy may be treated successfully. Both sites should be treated fully as if they were occurring separately considering toxicities.

KEY WORDS: Double malignancy, synchronous, treatment

Rashi Agrawal

Dept. of Radiotherapy, J. K. Cancer Institute, Kanpur, U.P, India

For correspondence: Rashi Agrawal, 117/139, 'O' Block, Geeta Nagar, Kanpur, UP - 208 025, India. E-mail: roopsi_roopal@rediffmail.com

INTRODUCTION

The occurrence of a second malignancy in a patient with a known malignant tumor is not uncommon. It has been observed that a person with a malignant tumor may be more prone to develop another malignancy than would be expected by mere chance alone. Metachronous primary malignancies are becoming increasingly frequent because of an increase in the number of elderly patients and improvements in diagnostic techniques. However, synchronous primary malignancies are still unusual. Data regarding treatment and its outcome in such cases is sparse. We present two cases treated successfully at our center.

CASE REPORTS

Case 1

A 70-year-old female presented to us with a lump in her right breast for two years and bleeding per vaginum for two years. On examination, the right breast had a 4 × 4 cm lump in the upper outer quadrant. The axillae and neck regions were free of any adenopathy. The clinical stage was T2N0M0. On pelvic examination, there was an ulceroproliferative growth arising from the cervix, involving all the fornices and extending to the lower third of the vaginal walls. It had involved the parametrium bilaterally up to the lateral pelvic wall—stage IIIB. A modified radical mastectomy (MRM) was done on 08.09.2004 for the right breast lump. She was thoroughly investigated. Complete blood count, liver function tests, renal function tests, X-ray chest PA view, and ultrasound (whole abdomen) were within normal limits. Histopathological examination (HPE) of the mastectomy specimen (09.10.2004) showed that the breast tumor was an infiltrating duct carcinoma and was 5 × 4 × 4 cm in size. Pathological staging was pT2N0M0. Lymph node showed chronic lymphadenitis [Figures 1 and 2].

We decided to administer external beam radiation therapy with cobalt-60 for both cervix and breast malignancy at the same time. The chest wall and the supraclavicular fossa were treated with a radiation dose of 45 Gy in 22 fractions. The duration was 4½ weeks with five fields from 19.10.04 to 17.11.04. For the pelvis, 45 Gy was given in 22 fractions. For this also the duration was 4½ weeks with two fields, AP-PA, from 19.10.04 to 17.11.04. On 27.11.04, a pelvic examination showed an ulceroproliferative lesion reaching up to the upper 2/3rd of the vagina;

Figure 1: HPE mastectomy specimen

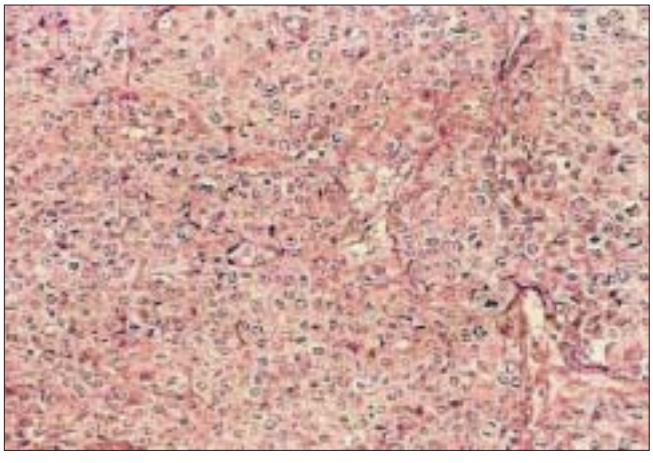

Figure 2: Histopathology cervix squamous cell carcinoma

Figure 3: Plain and contrast CT scan brain shows large

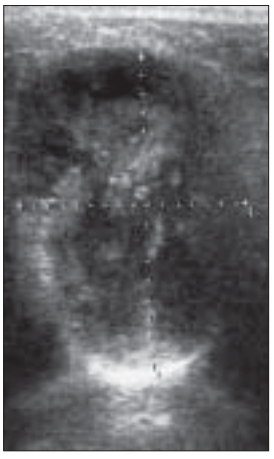

Figure 4: USG neck revealed right parotid mass with we

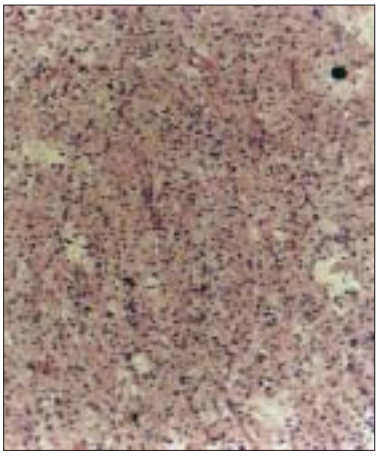

Figure 5: HPE brain tissue—astrocytoma grade II

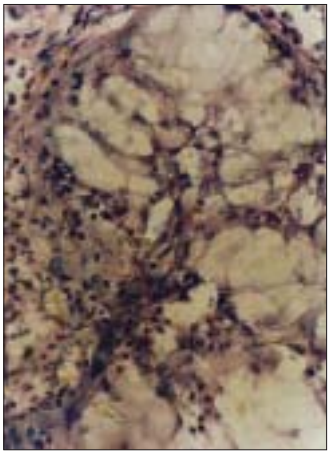

Figure 6: HPE parotid tumor—low grade muco-epidermoid

the parametrium was bilaterally free. CT scan of the lower abdomen revealed a heterogeneously enhancing cervical mass measuring 4.13 × 2.32 cm, with hematopyometra and bilateral parametrial lymphadenopathy; there was no hydroureteronephrosis. Phase II radiation to the pelvis was planned. A radiation dose of 26 Gy in 13 fractions was given in 2½ weeks by four fields between 07.12.04 and 23.12.04. After completion of radiotherapy, the patient reported on 02.02.05 with complaints of continuing discharge per vaginum. On examination, the chest wall, axillae, neck, and opposite breast were within normal limits but the pelvic examination showed a proliferative lesion involving the cervix and the

vaginal walls; the parametrium was bilaterally free. In view of the residual disease in the cervix and pending adjuvant chemotherapy for carcinoma of the breast, 6 cycles of cisplatin 70 mg day-1, doxorubicin 70 mg day-1, and cyclophosphamide 700 mg day-1, repeated 3-weekly, were delivered between 03.02.05 and 04.08.05. On 03.09.05, the patient again reported with complaints of continuing discharge per vaginum. On examination, her chest wall, axillae, neck, and opposite breast were within normal limits but the pelvic examination showed a proliferative lesion involving the cervix and vaginal walls; the parametrium was bilaterally free.

She was advised surgery for the local lesion; on 08.11.05, she had a total abdominal hysterectomy with bilateral salpingo-oophorectomy done at the government hospital. Histopathological examination of the specimen showed myometrium lined by nonsecretory endometrium, with benign cystic hyperplasia and endometrial polyps.

Patient is on regular follow up and clinically there is no evidence of disease.

Case 2

A 40-year-old female presented with mild headache off and on for one year, projectile vomiting for three months, and right-sided facial swelling for three months.

On examination, the patient had intact higher functions. There was no sensory or motor deficit and no facial nerve involvement. Bladder and bowel functions were within normal limits. The right parotid was enlarged, 3 × 3 cm, firm, mobile, and nontender. Plain and contrast CT scan of the brain revealed a large low-attenuating lesion on the left side, involving the frontoparietal region and crossing the midline frontal horns and the anterior part of the corpus callosum; the mass was ~53 × 48 mm in size [Figure 3]. USG of the neck revealed a right parotid mass—a well-defined mixed echogenic lesion 3.1 × 3.4 cm in size, with anechoic areas [Figure 4]. Histopathological examination of the brain tissue showed astrocytoma grade II [Figure 5 and 6].

The initial treatment was for the astrocytoma. Decompression of the malignant mass was done by the surgeon on 27.06.05. External beam radiotherapy with cobalt-60 was delivered by two lateral opposed fields to the local area between 01.08.05 and 16.09.05.

The radiation dose was 60 Gy in 30 fractions; the total duration was 6 weeks. After this, surgery for the parotid tumor was planned and a partial parotidectomy was done on 10.12.2005. External beam radiotherapy with cobalt-60 was delivered to the tumor bed from 27.12.05 to 31.01.06. The radiation dose was 50 Gy in 25 fractions delivered over the 5 weeks.

Patient is on regular follow-up; she has no new complaints and clinically there is no neurological dysfunction and no evidence of disease at the right parotid and neck region.

Figure 7: Healthy scar mark over chest wall

Figure 8: Healthy scar mark over parotid area

Thus, it was concluded that patients responded well to the treatment [Figures 7 and 8].

DISCUSSION

Multiple primary malignant neoplasms in a single patient have been well documented in the literature over the past hundred years. The lesions can be limited to a single organ or may involve multiple organ systems. These lesions generally fall into two categories: (1) synchronous—in which the cancers occur at the same time (as was the case in our patients) or within two months and (2) metachronous—in which the cancers follow in sequence (more than two months apart).[1]

The prevalent coincidence of microsatellite instability suggests that the genetic defect of mismatch repair deficiency may be responsible for a small subset of double cancers of the colorectum and stomach. Germ-line mutations of P53, tumor suppressor gene, were found in children and young adults

with a second malignant neoplasm. Kimura *et al*. also found germ-line p53 mutation in a patient with multiple primary cancers.[2]

Bongers *et al*. concluded that, in addition to external carcinogens, an intrinsic susceptibility may influence the risk for the development of second primary tumors in patients with head and neck squamous cell carcinoma.[3]

It is relatively common for patients with colorectal carcinoma or carcinoid tumors to have more than one primary neoplasm. Mitchell reported a patient with five primary synchronous neoplasms of the gastrointestinal tract, involving the stomach, small bowel, and colon.[4]

Synchronous primary cancers of the breast and cervix as reported by us has also been reported by Verstovsek *et al*.[5] An interesting case of double malignancy—carcinoma lung and rhabdomyosarcoma of scapula—has also been reported by Masood *et al*.[6] These cases illustrate the need for a thorough search for additional neoplasms when treating patients with cancer.

Multiple primary carcinomas in patients with head and neck malignancies have been studied intensively. Grosjean *et al*. retrospectively studied patients who had been treated for head and neck cancer. They concluded that early diagnosis and treatment of second primary tumors results in a survival rate very similar to that of patients with a single head and neck cancer. This provides indirect evidence that in patients with curable initial head and neck cancer intensive screening for second primary tumors may result in an improved overall outcome.[7]

Di Martino *et al*. also retrospectively studied patients treated for head and neck cancer. They concluded that the treatment of a second primary is often less successful than that for the same malignancy occurring primarily. The prognosis of synchronous tumors is significantly lower when compared to malignancies of a metachronous nature, despite some encouraging individual results. Only the early implementation of aggressive treatment methods for second primaries is successful in terms of survival. In one study, an aggressive treatment strategy was employed wherever clinically appropriate and yielded the most favorable results, with a five-year survival rate of 66.8% and 35.9% for index tumors and second primary malignancies, respectively.[8]

Thus, treatment strategies in case of synchronous double malignancy depend on treating the malignancy that is more advanced first or sometimes both could be treated simultaneously. In our case, we concluded that a synchronous double malignancy can be treated successfully. Both sites should be treated fully as if they were occurring separately considering toxicities.

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