

Case Report

Story of a cancer fighter: a case of carcinoma larynx with synchronous carcinoma bladder

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ABSTRACT

Cancer is a leading cause of death globally, and even in cases where the cancer patient stays alive, a normal lifestyle is rarely possible for them. This is even more true for cases of recurrent cancer, where the patients have to go through severe mental pressure from facing possible death multiple times. Various treatment methods are still being discovered and tried for the treatment of recurrent cancer, so that patients can lead a normal life without the fear of recurrence of cancer looming over their head. The present study was conducted with the report of such a case.

Keywords: Cancer, Malignant, Recurrence, Chemotherapy, Radiotherapy, Immunotherapy

INTRODUCTION

Cancer is a complex disease characterized by the uncontrolled growth and spread of certain cells in the body. This condition can arise almost anywhere in the human body, which is composed of trillions of cells.¹ Despite years of basic and clinical research, along with clinical trials of promising new therapies, cancer remains a leading cause of morbidity and mortality worldwide.² Cancer develops when cells in the body begin to grow uncontrollably without receiving signals to do so. These overgrown cells can form tumors, which can be benign or malignant based on various factors. Numerous types of cancer exist, with breast cancer, lung cancer, colon cancer, bladder cancer, leukemia, and kidney cancer among the most common.³ Throat cancer is a relatively uncommon type of cancer that can develop in the throat (pharynx) or voice box (larynx).⁴ It is an umbrella term used to describe any type of cancer that occurs in these regions. In some cases, patients with a previous malignant tumor may develop another tumor, known as a second primary cancer, within six months of the initial diagnosis.⁵ After laryngeal cancer, bladder cancer has the highest excess risk for men in Sweden compared to women, with the excess risk increasing with age.^{6,7} The

current study was conducted with a similar case in mind to advance our understanding of these conditions.

CASE REPORT

A 55-year adult male with diabetes, hypertension and chronic obstructive pulmonary disease had been selected as the subject for this case study. The patient had initially visited the hospital with complaint of voice hoarseness for 5 months. After an MRI on 21st November 2019, an ultrasonography of the whole abdomen on 30th November 2019 and transurethral resection of bladder tumor (TURBT) and biopsy on 04th December 2019, the patient was diagnosed with carcinoma larynx (cT1N0M0), or laryngeal cancer, along with synchronous carcinoma bladder. The patient was then started on bacillus Calmette-Guerin (BCG) therapy, with 80 mg of intravesical BCG inj. for 3-month cycle. The patient was also referred to external beam radiation therapy (EBRT).

For EBRT treatment, patient received EBRT to head and neck by Image guided radiation therapy (IGRT)- VMAT, which is recognized as the most advanced form of IGRT. VMAT is a non-invasive procedure. Volumetric modulated arc therapy (VMAT) is an innovative radiation

therapy technology that continually delivers the radiation dose as treatment equipment spins. This approach precisely molds radiation dose to tumor while minimizing the damage to the surrounding organs.⁸ For the present study patient, the dose of IGRT-VMAT set to 66Gy/30#, and PTV of 95%. The treatment continued for one month, from 19th December 2019 to 20th January 2020. After that, patient was released with regular post-radiotherapy maintenance.

After completion of radiotherapy treatment, patient had a recurrence of symptoms, for which another biopsy was done at 21st October 2020, roughly 10 months after the end of treatment. The biopsy was focused on the left vocal cord and suggested poorly differentiated squamous cell carcinoma. PET-CT scan of the patient found hypermetabolic soft tissue lesion in anterior part of the vocal cord extending to anterior commissure, and anterior part of right vocal cord suggested malignancy.

Treatment history and findings

With a diagnosis of Carcinoma Glottis, the patient had undergone multiple surgeries. On 17th November 2020, a total laryngectomy was performed. On 04th December 2020, neck exploration of the patient was done, along with repair of pharyngocutaneous fistula. 2 weeks later, on 19th December 2020, neck exploration was done again, with secondary suturing, and reconstruction was done with left supraclavicular flap. Pharyngostomy along with neck exploration was done on 23rd December 2020. Histopathological examination of the tissue from stroma of post laryngectomy was conducted on 31st May 2021, which found some lympho-vascular infection and necrosis. The contrast enhanced CT scan done on 02nd June 2021, local recurrence of tumor was observed in above tracheostomy tube, which extended into pyriform fossa involving surrounding muscle, subcutaneous fat and overlying skin, causing skin ulceration and metastatic bilateral cervical lymphadenopathy. Five cycles of adjuvant chemotherapy were given to the patients, during the period of 05th June 2021 to 29th August 2021. After chemotherapy treatment, a 10 ml contrast was used to do a face and neck MRI, which found large necrotic bilateral neck nodes, possibly metastatic. The MRI also observed diffused subcutaneous edema, and enhancement at submandibular region, parapharyngeal region, along soft palate. On 31st October 2021, a whole-body PET/CT scan was done, which found diffused low avid hypermetabolic activity in post-operated site along the tracheostomy tube in the anterior neck, which suggested inflammation. Observation of large bilateral necrotic cervical level II showed peripheral activity and low avid bilateral supraclavicular lymph nodes, which suggested that the metastatic residual nodes were responding to chemotherapy. Other CT findings revealed no abnormal results, and non-avid pre-tracheal, para-tracheal and pre-vascular lymph nodes suggested reactive nodes. On 31st December 2021, CT scan of neck and chest was performed with contrast, where CT scan of neck was suggestive of Koch's Lesion, while CT scan of the chest

found small subpleural bullae in right apical lung. On 23rd January 2022, ultrasound of both necks found bilateral neck masses, suggestive of enlarged lymph nodes having necrosis.

Current treatment

The patient was started on immunotherapy with pembrolizumab from 15th November 2021, and as of 06th January 2022, the patient had completed 3 cycles of treatment therapy. As the patient's condition improved greatly, he took a gap from the immunotherapy treatment and continued his daily lifestyle.

Pembrolizumab neoadjuvant immunotherapy

By boosting anti-tumor immune responses in the presence of a lot of tumor-derived antigen in an immunological milieu that hasn't been exposed to prior therapy, neoadjuvant immunotherapy has the potential to improve clinical outcomes. Advanced head and neck squamous cell carcinoma (HNSCC) cases are currently treated mostly with surgery and radiotherapy, either with or without conventional chemotherapy. The prognosis for advanced HPV-negative head and neck cancer is dismal, despite the multimodal treatment. Neoadjuvant (induction) chemotherapies with platinum-based medicines are not enough to appreciably extend overall life. Immunotherapies for recurrent and metastatic HNSCC have been licensed and used frequently, despite the fact that only 15-20% of patients benefit from them. Checkpoint blockade medicines are now being tested in earlier therapeutic settings as a result of these successes. Neoadjuvant immunotherapy has shown excellent outcomes in recent clinical trials, and this approach may modify the HNSCC treatment protocol.⁹

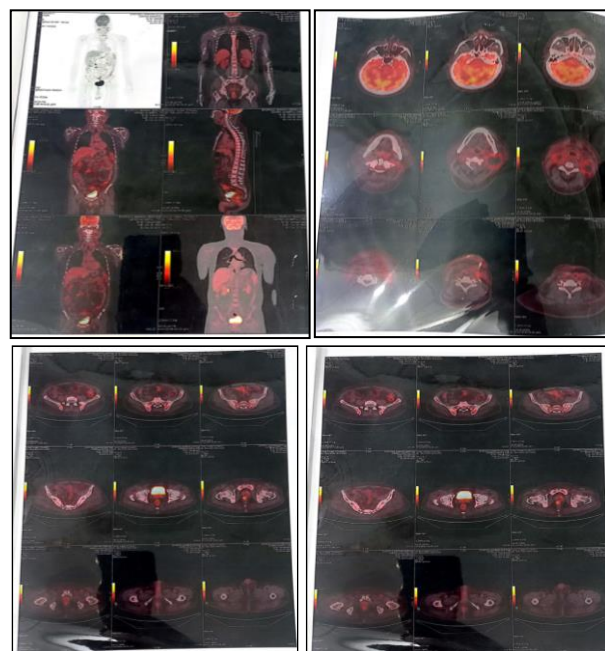


Figure 1: Whole body FDG PET/CT scan on 31st October 2021.

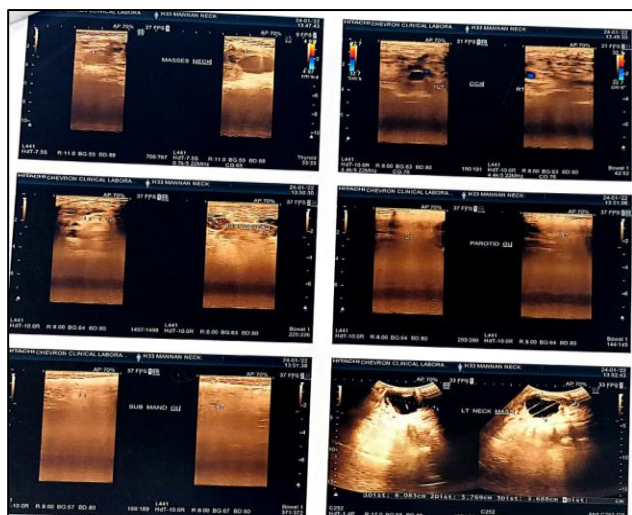


Figure 2: Ultrasound of both neck on 23rd January 2022.

DISCUSSION

Neoadjuvant immunotherapy with nivolumab, ipilimumab, and pembrolizumab have been used in various multiple clinical trials, all with satisfactory outcomes, patient safety and volumetric response.¹⁰⁻¹² Some clinical studies have been conducted to compare the results of pembrolizumab alone against pembrolizumab with chemotherapy. The most notable of such studies would be the keynote-048, where patients were stratified by PD-L1 expression, p16 status, and performance status and randomly allocated to pembrolizumab alone, pembrolizumab with chemotherapy and cetuximab with chemotherapy.¹³ Based on their findings, pembrolizumab with chemotherapy was an appropriate first-line treatment method for metastatic and recurrent cases of HNSCC, while pembrolizumab monotherapy was the preferred treatment for PD-L1-positive recurrent and metastatic cases of HNSCC.

CONCLUSION

Despite multiple treatments with chemotherapy and radiotherapy, the patient had shown recurrence of his cancer over a period of almost 2 years, before being treated with immunotherapy. After 3 cycles of immunotherapy, significant improvement of the patient's condition was noticed, and the patient had continued with his regular life without need for further treatment.

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Ethical approval: Not required

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