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Case Report

Synchronous primary malignancy of head and neck- a case report

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ABSTRACT

The incidence of multiple primary malignant neoplasms increases with age, reflecting an increase in overall cancer risk in older patients. Cases of two or more concurrent primary cancers are still rare, although its incidence is increasing. Here, we report the case of a 41-years female who was referred to our institution with synchronous papillary carcinoma of thyroid and Adenoid cystic carcinoma of submandibular gland. The case is being presented to emphasize that the clinicians should keep in mind that the appearance of another tumour in a patient suffering from cancer could be either a synchronous or a metachronous or a metastatic lesion.

Keywords: Synchronous malignancy, Papillary carcinoma, Adenoid cystic carcinoma

INTRODUCTION

Billroth *et al*., in 1889 first documented multiple primary cancers (MPC) in a single patient.[1] Since then much documentation have been done on cases of double, triple or even quintuple primary malignant neoplasms.[2] Based on the time that the neoplasms are discovered, it has been classified as either synchronous or metachronous lesions.[3,4] Synchronous lesions refer to neoplasms discovered simultaneously, while metachronous indicates distinct neoplasm discovered successively.[5] Warren and Gates, first coined the definition of MPC stating that each neoplasm must represent a distinct malignancy, and that a metastatic origin must be excluded.[6] Ray *et al*., reported that genitourinary neoplasms constitute 13.5% patients with MPC.[7] In this report, we describe the case of a patient who developed synchronous papillary carcinoma of thyroid and adenoid cystic carcinoma of submandibular gland.

CASE REPORT

A 41 years female presented to our surgical OPD with the complaints of swelling over the left side of neck of 6 months duration. She gave no history of pain, fever, dysphagia, change in voice or features suggestive of hyper/hypothyroidism. She also gave no history of radiation exposure in childhood or family history of malignancy. Her vitals were stable and her general examination revealed only a neck swelling. Examination of neck showed a spherical swelling of size 3x2 cm at level III, with smooth surface, hard consistency and mobile with normal skin. Submandibular gland was found enlarged measuring 3x2 cm. There was no thyromegaly. Oral cavity examination was found to be normal. Complete hemogram and thyroid profile was found to be normal. Contrast enhanced computed tomography (CECT) neck showed well defined heterogeneous hypodense lesion in posterior aspect of left submandibular gland with two small hypodense lesions in the right lobe of thyroid with hypo enhancement and level III lymph node. Pre-operative FNAC of the neck node showed metastatic papillary carcinomatous deposits and FNAC of the submandibular gland showed adenoid cystic carcinoma. With the above evaluation, the patient was taken up for elective surgery. Under general anesthesia total thyroidectomy with modified radical neck dissection (type III) and submandibular gland excision was done using half 'H'

incision (Figure 1, Figure 2) Histopathological report confirmed synchronous malignancy of papillary carcinoma of thyroid (follicular variant) with metastatic lymph node and adenoid cystic carcinoma of submandibular gland (low grade). Her post-operative period was uneventful and she was discharged home. Patient was advised to review for adjuvant radiotherapy and for repeat thyroid profile and radio iodine isotope scan.

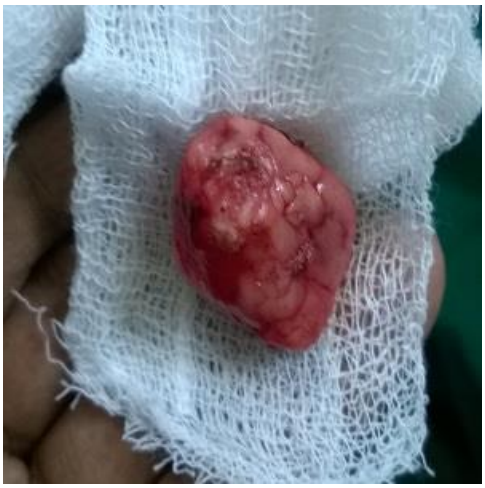

Figure 1: Specimen of submandibular gland excised.

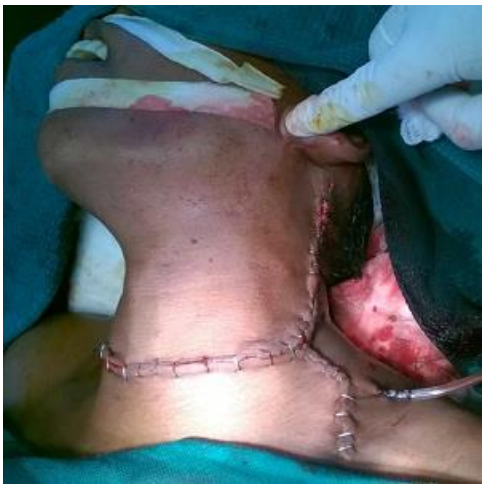

Figure 2: Intraoperative picture showing half H incision.

DISCUSSION

Multiple Primary Malignant Neoplasms (MPMNs) was first used by Billroth in 1889 and the first publication about MPMNs was done by Warren and Gates in 1932.[6] Synchronous neoplasms are defined as ≥ 2 primary neoplasms diagnosed within 6 months of each other, while metachronous neoplasm are defined as those detected after an interval of > 6 months.[5] In case of synchronous MPCs, factors such as the stages of the different neoplasmss, their biological behaviour, the patient's age, life expectancy and comorbidities should be considered, as all of these can affect the treatment strategies and prognosis.

High effectiveness of certain cancer therapies and increase in the older population due to improved standard of living has led to the occurrence of MPMN in the same host. Onset of multiple primary neoplasms are the result of a combination of different factors, including improved cancer survival rates increasing the length of time over which additional cancers can develop.[5] Exposure to common carcinogenic factors such as tobacco and alcohol, genetic predisposition (for example, Li-Fraumeni or Beckwith-Wiedemann syndrome) and side-effect of previous chemotherapy or radiotherapy have increased the risk of developing another neoplasm.[8]Ionizing radiation is the possible cause of a big number of second cancers.[9] The primary factors among environmental causes are smoking and the use of alcohol. Tobacco smoking appears related with cancers of the head and neck, esophagus, respiratory system, pancreas, urinary system and cervix.[10-12] The "Field cancerization" theory supposes that the same carcinogenic effects of tobacco and alcohol that give rise to the primary tumour also promote the growth of secondary tumours located in the same "condemned mucosa" of the aero-digestive tract and bladder.[13]

The case we describe here met the criteria of Warren and Gates[6], namely that each neoplasm must be a distinct malignancy and not a metastasis of the other. In this patient, two primary and histologically distinct cancers were found in two different organs, that is, papillary carcinoma of thyroid with metastatic lymph node and adenoid cystic carcinoma of submandibular gland. All these cancers were considered primary neoplasms; thus, a diagnosis of synchronous primary cancer was made.

CONCLUSIONS

The incidence of MPC is influenced by a combination of environmental and genetic factors. The prognosis for a patient with multiple malignancies is determined by whichever neoplasm is the most aggressive. Summarizing, it is important for the clinicians to keep in mind that the appearance of another tumour in a patient suffering from cancer could be either a synchronous or a metachronous or a metastatic lesion. Epidemiological and clinicopathological studies of MPMN are crucial for early detection and proper intervention of high risk patients.

Consent: All the authors have confirmed that the patient has given her informed consent for the case report to be published.
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Ethical approval: Not required

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