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Synchronous and Metachronous Cancers: An Update

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Editorial

Multiple Primary Malignancies (MPM) was first described in 1879 by Billroth [1]. The neoplasms may be limited to a single organ or may involve multiple separate anatomical organs. The North American Association of Central Cancer Registries (NAACCR) classifies MPM into two categories: (1) Synchronous, in which the cancers occur at the same time (the Surveillance Epidemiology and End Results Programme (SEER) definition is within two months) and (2) Metachronous, in which the cancers follow in sequence, that is, more than six months apart [1]. According to Warren Gates criteria a diagnosis of MPM require the following criterias to be fulfilled (a) each tumor should present a definite picture of malignancy (b) each tumor should be histologically distinct (c) the possibility that one is metastasis of the other must be excluded [2]. Meta–analyses show the frequency of second primary tumor (SPT) as 3-5%, third tumor (TT) as 0.5%, and fourth tumor, that is, quadrant tumor (QT), as 0.3%, in different organs and of different histogenesis. Metachronous primary malignancies are becoming increasingly common because of an increase in the number of elderly cancer survivors, greater awareness and improved diagnostic modalities [3]. The exact pathophysiology for MPM remains unknown. However certain factors have been postulated which includes the common carcinogen induced multiple cancers in an exposed epithelial surface, called as "field-cancerization" as seen in head-neck tumors. In addition other causative factors includes ionizing radiation, increased use of organ transplant, and the increasing use of newer treatment modalities like hormonal manipulation, target therapies, genetic manipulation, and immunomodulators [4]. In a study conducted by Chakrabarti et al. [5] it has been reported that the over a period of 2 years, 12 cases of MPM were detected against a total of 1255 cases. Of these, five cases were synchronous malignancies and seven cases were metachronous. Head and neck was the commonest site of index malignancies with seven cases followed by the breast cancer with three cases and next gynaecological malignancies with two cases. Most common sites for second primary malignancies (SPM) were head and neck with (four cases). Male to Female ratio was 1:1.5 in the synchronous primary group and 1:1.3 in the metachronous group. Median age of presentation of the primary tumour was 52 years and 6 months. The age range for the SPM was 17-72 years with the highest incidence in the 6th decade of life. Studies have reported that that the relative risks of SPM ranges from 1.08 to 1.3. [6] SPM are often missed during follow-up and are detected accidentally. The paucity of awareness about SPM has also prevented the formulation of population-based screening protocol [7]. Multiple tumors that have been pathologically confirmed at the time of presentation should be evaluated and staged as independent tumors. The treatment plan should be decided after staging of both the primary and secondary tumors in view to attain maximum clinical response. Proper counseling and patient's understanding of magnitude of the disease is paramount [8]. Operable synchronous SPM can be operated in a single setting with minimal morbidity with better survival and is less taxing on the patient and his/her relative both psychologically and financially. A regular follow-up on the patient by the clinician increases the chances of early detection of metachronous SPM and the formulation of the treatment plan at the earliest with better overall survival [9].

Availability of data regarding incidence of MPM, particularly those from developing countries is very limited and hence further studies are needed. SEER is working in this direction with an aim to define and develop appropriate and reliable criteria's for synchronous and metachronous cancers. It is imperative that patient with a primary malignant tumors should be thoroughly, closely, and regularly followed. Genetic counseling, risk estimation, cancer screening and chemoprevention must be emphasized. Appropriate cancer prevention strategy in with proper emphasis on synchronous and metachronous cancer needs to be designed and incorporated in the National Control Programme as multiple primary cancers have unique, biological behavior requiring specific diagnostic and therapeutic interpretation.

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References

1. SEER Program Code Manual, Third Edition. Bethesda (MD): National Cancer Institute. January 1998.
2. Warren S, Gates O. A survey of the literature and statistical study. Am J Cancer. 1932; 16: 1358-4142.
3. Bittorf B, Kessler H, Merkel S, Bruckl W, A Ballhausen WG, Hohenberger W, Günther K. Multiple primary malignancies: An epidemiological and pedigree analysis of 57 patients with atleast three tumours. Eur J Surg Onocl. 2001; 27: 302-313.
4. Braakhuis BJ, Tabor MP, Leemans CR, van der Waal l, Snow GB, Brakenhoff RH. Second primary tumors and field cancerization in oral and oropharyngeal cancer: Molecular techniques provide new insights and definitions. Head Neck. 2002; 24: 198-206.
5. Chakrabarti S, Chakrabatri PR, Desai SM, Agarwal D, Mehta DY, Somanath S. Spectrum of second primary malignant neoplasms in central India: case series from a tertiary care centre. Niger Postgard Med J. 2015; 22: 233-236.
6. Curtiz RE, Freedom DM, Ron E, Ries LA, Hacker DG, Edwards BK, et al. New malignancies among cancer survivors: SEER Cancer Registries, 1973-2000. NIH Publ: National Cancer Institute; 2006.
7. Buchler T, Kubankova P, Boublikova L, Donatova Z, Foldyna M, Kanakova J, et al. Detection of second malignancies during long-term follow-up of testicular cancer survivors. Cancer. 2011; 117: 4212-4218.
8. Morris LG, Sikora AG, Hayes RB, Patel SG, Ganly I. Anatomic sites at elevated risk of second primary cancer after an index head and neck cancer. Cancer Causes Control. 2011; 22: 671-679.
9. Shin DW, Kim YW, Oh JH, Kim SW, Chung KW, Lee WY, et al. Knowledge, attitudes, risk perception, and cancer screening behaviors among cancer survivors. Cancer. 2011; 117: 3850-3859.