Second Primary Cancers Following Colorectal Cancer

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Compared with the general population, individuals with a previous colorectal cancer have an elevated risk of a second primary cancer [1, 2]. Possible reasons for this phenomenon could be (1) an overall greater predisposition to cancer due to the same environmental and genetic factors that contributed to the first primary cancer [3] and (2) the second cancers possibly being related to the effects of treatment for the first cancer [4].

Lynch syndrome is an autosomal, dominant, inherited disorder of cancer susceptibility caused by germline mutations in DNA mismatch repair (MMR) genes. Mutation carriers are prone to developing cancers of the colon, rectum, endometrium, ovary, stomach, small intestine, urinary tract, kidney, biliary tract, and nervous system, and the diagnosis of these cancers generally occurs at a younger age than it does for non-MMR-related cancers [5]. Second cancers following colorectal cancer have essentially two types of patterns: Lynch-syndrome-associated cancers and cancers with no features of Lynch syndrome, which include breast, pancreas, prostate, and thyroid cancers [6-8].

An increased surveillance strategy could lead to earlier identification and removal of both premalignant lesions and early-stage tumors. Any patients diagnosed with colorectal cancer at a young age are at high risk of having a second colorectal cancer and should be followed-up at regular intervals [6]. Furthermore, in surveillance of these patients, all Lynch-syndrome-related sites should be considered. However, given the limited evidence for the efficacy of screening for breast, pancreas, prostate, and thyroid cancers [8, 9], further studies are needed to verify the validity of screening for these cancers in Lynch syndrome.

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