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Colorectal Cancer Prevention: A Case Report - Review of Medical Literature

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Abstract

Preamble: *Colorectal Cancer is a major cause of tumor-related morbidity and mortality worldwide. Its peril begins to increase after the age of 40 years and rises sharply at ages 50 to 55 years; the risk doubles with each succeeding decade, and continues to rise exponentially. According to GLOBOCAN 2018 data, colorectal cancer (CRC) is the third most deadly and fourth most commonly diagnosed cancer in the world. Nearly 2 million new cases and about 1 million deaths were expected in 2018. CRC incidence has been steadily rising worldwide, especially in developing countries that are adopting the "western" way of life. Obesity, sedentary lifestyle, red meat consumption, alcohol, sweat drink, and tobacco are considered the driving factors behind the growth of CRC (2,3,29,30). However, recent advances in early detection screenings and treatment options have reduced CRC mortality in developed nations, even in the face of growing incidence. Genetic testing and better family history documentation can enable to identify the Hight risk individuals' group. Meanwhile, the general population can reduce their risk by lowering their red meat, alcohol, and tobacco consumption and raising their consumption of fiber, wholesome foods, and certain vitamins and minerals. The GLOBOCAN 2020 estimates that in 2020 the incidence of colorectal cancer will expand worldwide in the range of 1,15 million new cases, this means in 2040 this expansion will reach 1,93 especially in young people and 0,94 million people will die from this neoplastic disease (4,5,6 31,32). In this paper, we are presenting a case of a distal rectal mucinous adenocarcinoma in a young male Patient with a family history of first-degree relative with sigmoid colon cancer.*

Aim: *To emphasize the prevention of colorectal cancer with a testimonial case of a young male Patient from our Surgical Department.*

Keys words: *Colorectal Cancer, Prevention*

Case Report

We are reporting a case of a 48-year-old man who came to our Surgical department presenting rectal bloody mucus discharge. The patient was shifted to clinical assessment which stated the hemodynamic stability and the digital ano-rectal examination located a tumoral mass at the distal rectal region. Blood analysis within normal range. A Thoracic and abdominal CT scan without finding of secondary neoplastic lesions. A Perineal MRI found out a distal rectal tumor invading muscularis propria < 4 mm above the sphincter apparatus, with invasion of adjacent lymph nodes. A Lower GI Endoscopy confirmed the tumoral mass without evidence of a synchronous lesion, a biopsy from endoscopy revealed a well differentiated rectal adenocarcinoma. The patient was shifted to neoadjuvant chemo-radiation therapy, then a lower anterior resection with total mesorectal excision followed by anastomosis and protective ileostomy was performed. The post-operative pathology's results concluded to a mucinous adenocarcinoma of the distal rectum stage IIIB (T3a N2a M0) and the patient took also adjuvant chemotherapy. The cover ileostomy was taken down 6 months later, a regular follow-up was undertaken.

Discussion

Cancers of the colon and rectum are among the most common and deadly neoplasms, and their global incidence and mortality are likely to increase in the coming decades. According to current epidemiological analysis, colorectal cancer affects more young individuals of the age group of less than 50 . This means if there is no intervention regarding life's behaviours modification in different communities, especially in young people, this cancer will be a major issue of public health in the two future decades. Whenever dealing with

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colorectal cancer in a young patient, it is good to keep in mind that the more the patient is young the more the cancer 's biology is aggressive thus, the therapeutic approach must be very aggressive in young individuals presenting colorectal cancer (1,7,8,14,). In our case, we are dealing with a 48-year-old male patient diagnosed with a Stage III b mucinous adenocarcinoma of the distal rectum- without distant metastatic disease neither synchronous colon's tumour, the patient was treated using neoadjuvant chemo-radiation therapy which allowed to perform a lower anterior resection by sparing the sphincter's apparatus and the patient was shifted to adjuvant chemotherapy to minimise the probability of recurrence. This therapeutic protocol is similar to the one in use in different Canters worldwide.

Etiologically, CRC usually begins with the non-cancerous proliferation of mucosal epithelial cells. These growths are known as polyps and can grow gradually for 10–20 years before becoming cancerous. The most common form is an adenoma originating from granular cells, whose function is to produce the mucus that lines the large intestine. Only about 10% of all adenomas progress to invasive cancer, although the risk of cancer increases as the polyp grows larger. Invasive cancer arising from such polyps is known as adenocarcinoma and accounts for 96% of all CRCs (33,34). Certain dietary and lifestyle choices can promote intestinal inflammation and modify the intestinal microflora to promote an immune response, both of which can facilitate polyp growth and conversion to cancer. Likewise, hereditary or spontaneous mutations in oncogenes and tumor-suppressor genes can provide certain mucosal cells with a selective advantage and encourage hyper-proliferation and ultimately carcinogenesis. Lifestyle modification, early colorectal screening, and genetic testing hold promise in preventing CRC. Variations and trends in CRC incidence suggest that the disease has a large behavioral component and that effective prevention is possible. Advances in CRC screenings have fueled the reduction in mortality in the developed world, even in the face of growing incidence in many nations. There are several recommended methods for screenings, all of which have a comparable ability to improve survival if performed appropriately. Among these screenings are colonoscopies every 3 years in High-risk individuals or each 5 years in low-risk one, a computed tomographic colonography (CTG), double-contrast barium enemas. Annual high-sensitivity stool tests for occult bleeding are also comparably effective and less invasive (9,10,11,12,13,15,25,27).

Modifications of the diet can further reduce CRC risk. Calcium and vitamin D from supplements or low-fat dairy products, fiber from fruit, vegetables, and whole grains, and antioxidants such as those in fruit and coffee have yielded some reductions in CRC risk. Other potentially protective foods include garlic, magnesium, fish, and vitamin B_6. Folate supplementation has been shown to be effective in preventing the formation of tumors but may lead to the growth of already-present tumors, and is therefore not recommended for the population. Lastly, a reduction in alcohol, tobacco, and red and processed meat consumption could together lower CRC risk by over 50% (16,17,18,19,20,24,26,28).

Certain medications that are commonly prescribed for other conditions, such as NSAIDs, statins, and bisphosphonates have been shown to protect against CRC, especially when used in combination. These compounds may also facilitate the treatment of CRC in combination with chemotherapeutic agents. However, due to the limited data available and possible side effects, these medications are not recommended to the general public simply for the prevention of CRC. Those with hereditary predispositions towards CRC (the most common of which is Lynch syndrome) are more likely to benefit from genetic testing, lifestyle modification, and prophylactic medication (21,22,23,34,35).

Conclusion

In Latin, we say "in prophilaxeos gratiam lubet proponere" this means that prevention is better than cure. Thus, if our patient was shifted to colonoscopy from the age of 44 years because of the family history of sigmoid colon cancer in his first-degree relative, his rectal cancer could be prevented by an endoscopic resection of a rectal polyp as a premalignant lesion. Therefore, we must keep in mid that a good cancer prevention is focused on family history documentation, individual's life style as well as on the community screening examination such colonoscopy according to age-group and to family history.

Ethical Consideration

This case report is a result of our Surgical Department regular activities; it is reported anonymously after a written consent of our patient.

Author's Declaration

There is no conflict of interest

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