Abdomino-Perineal Recto-Sigmoidectomy with Pelvic and Para-Aortic Lymph Node Dissection for Synchronous Anal and Rectal Tumor

Nicolae BACALBASAa; Irina BALESCUb; Vladislav BRASOVEANUc

a “Carol Davila” University of Medicine and Pharmacy, Bucharest, Romania
b “Ponderas” Hospital, Bucharest, Romania
c Department of General Surgery and Liver Transplantation “Dan Setlacec”, Fundeni Clinical Institute, Bucharest, Romania

Address for correspondence:
Nicolae Bacalbasa, Dimitrie Racovita Street, no. 2, Bucharest, Romania.
E-mail: nicolae_bacalbasa@yahoo.ro

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ABSTRACT

Colorectal cancer represents the third most encountered malignancy worldwide and the third cause of death in United States of America. A special subgroup is represented by the patients presenting an association of a colic tumor and intraluminal colo-rectal metastases. In these cases the distal tumor is believed to be rather a distant metastasis originating from the proximal one. Another significant mechanism which can lead to the apparition of synchronous tumors is related to the possibility of lymphatic dissemination, which is supported by the presence of positive lymph-nodes surrounding of the most important blood vessels collectors such as the inferior mesenteric vein. We present the case of a 67 year old patient diagnosed with synchronous sigmoidian and inferior rectal tumor associated with enlarged para-aortic lymph nodes in whom we performed an abdomino-perineal rectosigmoidectomy with pelvic and para-aortic lymph node dissection.

Keywords: colorectal cancer, synchronous tumor, abdomino-perineal resection, lymph node dissection

INTRODUCTION

Colorectal cancer still represents an important problem of health, ranking for the third most frequently seen malignancy worldwide and the third cause of death in United States of America (1). Anal metastases of colorectal cancer represent a rare condition which usually appears by tumor exfoliation and distal implantation of the malignant cells originating from colic tumors. Another possible mechanism is by lympho-vascular dissemination. We present a case of a 67-year-old patient diagnosed with a rectal tumor associated with anal metastases and enlarged pelvic and para-aortic lymph nodes in whom an abdomino-perineal resection with lymph node dissection were performed.

CASE REPORT

67-year-old male presented for constipation and weight loss over the last 3 months, pel-
vic pain and association between rectal bleeding and the apparition of a tumor located at the exterior surface of the anus (Figure 1A). The local examination revealed the presence of a tumor located at the level of the ano-tegumentary line measuring 4 cm in diameter. The colonscopy revealed the presence of a second tumor starting at 8 cm from the anal orifice with extension up to the recto-sigmoidian junction. The biopsy revealed histology of poorly differentiated adenocarcinoma for both tumors. The imagistic studies also revealed the presence of enlarged lymph nodes at pelvic and para-aortic levels, including the origin of the inferior mesenteric vessels. A total abdomino-perineal rectal resection with left terminal colostomy was performed (Figure 1B-H). We also proceeded to an extended pelvic and para-aortic lymph node dissection. The postoperative outcome was favorable, the patient being discharged in the 15th postoperative day. The histopathological examination revealed the presence of a poorly differentiated recto-sigmoidian carcinoma associated with an anal metastasis with the same histology, with no signs of submucosal or serosal involvement of the inter-tumoral rectal region. The microscopic examination of the lymph nodes revealed the presence of positive lymph nodes at pelvic and inter-aortico-caval level.

**DISCUSSION**

Anal metastases originating from a rectal or recto-sigmoidian malignant tumor is a rare condition. The two main mechanisms responsible for the apparition of this kind of tumor dissemination are represented by the intraluminal mechanism and lympho-vascular dissemination. The intraluminal mechanism consists in tumor cell seeding from a more proximal tumor resulting in a distal implantation, while the lympho-vascular theory is sustained by the high number of collaterals and common vascular and lymphatic territories for different segments of the colic region. In our case it seems that both mechanisms can be incriminated: the histopathological confirmation of the same tumor cell type without any contiguity intramural solution between the two lesions sustains the first theory while the presence of enlarged positive lymph nodes surrounding the inferior mesenteric vein comes to sustain the second theory.

In order to establish the different outcomes of the two mechanisms, Takahashi et al retrospectively reviewed patients presenting anal metastases of colorectal origin who were surgically treated between 2002 and 2009 in Osaka. Of 851 patients with primary colorectal cancer treated in this period of time, 6 patients...
presented anal metastases. Location, depth, lymph node status, synchronous or metachronous type, therapeutic protocol and outcomes were reviewed. Based on the histopathological results, the mode of dissemination was classified as either luminal or lymphovascular; the authors concluded that whenever lympho-vascular mechanism is incriminated, an extended lymph node dissection associated with adjuvant chemoradiation must be taken in consideration. They also reviewed available literature data and concluded that 38 patients with anal metastases originating from colonic cancer had been reported. The primary tumor was located in the left colon in all cases. When it came to the mechanisms of development of the anal metastases, the lymphovascular route was identified in 8 cases.

Another explanation for the presence of the two tumors is the possibility of synchronous lesions. According to Cunliffe, synchronous adenocarcinoma refers to 2 or more tumors detected intra-operatively or within the first six months postoperatively. The lesions should be separated by at least 4 cm of normal tissue, with no adjacent submucosal spread between them. In a study conducted by Tziris 268 patients with colic tumors were identified. Only 12 (4.3%) of them were identified to have multiple primary tumors. Synchronous tumors were seen in 3 cases while metachronous tumors were seen in the other 9 patients. When it came to the modality of diagnosis, 2 patients were diagnosed pre-operatively at colonoscopy while the third patient was diagnosed intra-operatively due to the fact that he presented in emergency for intestinal obstruction. The most frequent locations were rectum and sigmoid colon. In cases presenting synchronous tumors, extended colectomies were needed in order to remove both tumors. In 2 cases curative resections were performed, while in the third case only a palliative resection was performed due to the locally extended disease. When discussing about the most appropriate surgical treatment the authors conclude that a radical local resection is the most effective procedure, while other studies conclude that a more extended resection should be performed in order to remove all the possible synchronous polyps or lesions which might have been misdiagnosed during the preoperative examinations. However, most authors agree that the specimen should include the regional lymph nodes in order to impede the local spread and enough intestinal length in order to prevent the local recurrence.

King-Yin et al retrospectively reviewed all the literature data published between 1981 and 2013 concerning the synchronous colorectal cancer topic and found 51 series of eligible patients. The established prevalence of synchronous colorectal cancer ranged between 1.1and 8.1% while the mean age at presentation was 63 years. The most important predisposing conditions were inflammatory bowel disease, familial adenomatous polyposis and hereditary non-polyposis colorectal cancer while the most common locations were sigmoid and rectum. Some authors reported that most synchronous tumors develop in the same segment of the colon. When estimating the impact on survival, different results were obtained. Nosho et al conducted the first prospective study in which outcomes of patients with synchronous colo-rectal carcinomas and solitary colo-rectal cancers were compared and concluded that patients with synchronous tumors report a worse outcome. Other studies which estimated the influence of synchronous tumors on survival failed to demonstrate a worse prognostic for these cases.

In our opinion, an important prognostic factor is the extent of lymph node dissection. As demonstrated in the previous studies, lymphatic spread is responsible for a high number of distal recurrences.

In order to determine which are the cases who benefit most from para-aortic lymph node dissection, Liu et al retrospectively reviewed 181 patients with stage N+ rectal cancer below the peritoneal reflection. They concluded that patients diagnosed in N1 or N2 stages benefited from pelvic and para-aortic lymph node dissection when compared to those who were submitted to pelvic lymph node dissection alone (p=0.001). Furthermore, patients who presented positive para-aortic lymph nodes reported a shorter disease free survival and overall survival.

Uehara et al conducted a study on 285 patients diagnosed with stage II/III lower rectal adenocarcinoma and studied the effect of upward lymph node dissection on the overall survival. They demonstrated the effectiveness of lymph node dissection at the origin of the inferior mesenteric artery (UD3) and of the para-aortic lymph node dissection (UD4) and the
improved overall survival in cases in which all these positive lymph nodes were resected (14).

However, an extended lymph node dissection can provide a better staging of the malignancy in order to establish the most appropriate adjuvant therapeutic protocol and also it can diminish the risk of recurrent disease (15).

CONCLUSION

Although colorectal cancer is one of the most frequently encountered tumors worldwide, the particular situation of the presence of two synchronous lesions is a rare condition, in which there are no standard therapeutic guidelines.

In our case, whether the anal tumor was an intraluminal metastasis originating from the rectal tumor, whether the two lesions were synchronous tumors, it seems that the most important predictive prognostic factor is related to the complete excision of the tumor and the adjacent lympho-vascular territory.

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REFERENCES