Int J Colorectal Dis (2014) 29:769–770
DOI 10.1007/s00384-014-1865-3

LETTER TO THE EDITOR

Rectal cancer only metastasis to the thyroid which has a primary papillary thyroid cancer

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Accepted: 2 April 2014 / Published online: 22 April 2014

Case presentation

A 62-year-old woman had a radical surgery with a permanent colostomy for a Dukes' B rectal cancer in January 2011. Thirteen months after the surgery, the patient demonstrated a gradually elevated carcinoembryonic antigen (CEA) and cancer antigen 19-9 (CA 19-9) value. Ultrasonography, magnetic resonance imaging (MRI) and computed tomography (CT) scans showed no organ or lymph node metastases during reexaminations except a progressively enlarging thyroid mass. And this mass existed early before the elevation of CEA and CA 19-9 levels. Thyroidectomy was performed because of an increased sensation of difficulty breathing, and the pathologic result showed both metastatic adenocarcinoma and papillary thyroid cancer. After the thyroidectomy, an 18F-FDG whole body positron emission tomography (PET) scan was used to evaluate other possible metastases, which showed no other metastasis to lymph nodes or other organs.

The patient with a history of goiter over 50 years showed no obvious symptoms except an enlarged thyroid. After rectal cancer surgery, the patient completed two cycles of XELOX chemotherapy. The patient complained of slowly growing thyroid after the rectal surgery. CT scan taken one month after the rectal cancer surgery revealed an enlarged but homogeneous left lobe of the thyroid. Five months after the surgery, chest CT examinations showed a mass that contains both solid and cystic components in the left lobe of the thyroid. Thirteen months postoperation, CEA value elevated to 6.41 ng/ml, which exceed the mark for the first time (the normal value is 0–5 ng/ml), and CA 19-9 rose to 13.29 units/ml (the normal value is 0–37 units/ml). CEA and CA 19-9 values continuously increased to 22.68 ng/ml and 44.33 units/ml at 17 months after surgery, respectively. During this period, imageological examination demonstrated no metastasis but a thyroid mass. The mass evoked dyspnea 21 months after rectal surgery, and the patient underwent partial thyroidectomy with the left lobe and isthmus of the thyroid resection. After thyroidectomy, both CA 19-9 and CEA levels instantly fell within normal range. Another six cycles of chemotherapy were followed after thyroidectomy to lower the risk of recurrence and metastasis. The patient is still well lived with no metastasis or elevation of CA 19-9 and CEA levels as last checked in September 2013.

Discussion

It is extremely rare to observe metastasis of colorectal cancers to thyroid with a primary thyroid cancer. To the best of our knowledge, only two cases were reported, and cancers in both cases had other organ metastases besides thyroid [1, 2]. We believe that this is the first case of colorectal cancer metastasis to a primary papillary thyroid cancer without other metastases. And the thyroid cancer did not spread, either.

This patient had a history of goiter for over 50 years. And the long-standing goiter of this patient could boost the incidence of papillary microcarcinoma [3]. There were chances that the

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microcarcinoma might already exist before the rectal surgery. Both microcarcinoma and goiter could alter the microenvironment of the thyroid so as to make metastatic cell more prone to settle and survive. And the surgical resection of rectal tumor could accelerate the growth of preexisting metastatic cell and microcarcinoma in the thyroid through immunological mechanisms [4], which led to the initial burst of cancer cells.

It can be inferred from this case that, in clinical diagnosis, an unusual thyroid enlargement of patients after cancer surgery should raise clinicians' attention, and further evaluation needs to be proposed on thyroid in order to rule out metastasis or primary carcinoma, especially when they showed an elevated cancer antigen with or without other organ and lymph node metastases.

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