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Contents

Thrice Monthly Volume 10 Number 33 November 26, 2022

MINIREVIEWS

ORIGINAL ARTICLE

Clinical and Translational Research

Retrospective Study

World Journal of Clinical Cases

Thrice Monthly Volume 10 Number 33 November 26, 2022

Contents

World Journal of Clinical Cases

Thrice Monthly Volume 10 Number 33 November 26, 2022

Contents

World Journal of Clinical Cases

Thrice Monthly Volume 10 Number 33 November 26, 2022

Contents

World Journal of Clinical Cases

Thrice Monthly Volume 10 Number 33 November 26, 2022

Contents

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CASE REPORT

T1 rectal mucinous adenocarcinoma with bilateral enlarged lateral lymph nodes and unilateral metastasis: A case report

Xian-Wei Liu, Bing Zhou, Xiao-Yu Wu, Wen-Bing Yu, Ren-Fang Zhu

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Abstract

BACKGROUND

There are a few cases of lateral lymph node (LLN) metastasis (LLNM) of T1 rectal cancer. Moreover, LLNM is easily missed, especially in patients with early-stage rectal cancer. To our knowledge, the possibility of bilateral LLNM before surgery has not been reported in previous studies.

CASE SUMMARY

A 36-year-old woman underwent endoscopic submucosal dissection at a local hospital owing to a clinical diagnosis of a rectal polyp. The pathology report showed a diagnosis of T1 rectal mucinous adenocarcinoma. She was considered to have bilateral LLNM after the examination at our hospital. Laparoscopic total mesorectal excision plus bilateral LLN dissection was performed and the pathological outcomes indicated unilateral LLNM. The patient received long-course adjuvant chemoradiotherapy with no recurrence or metastasis observed during the 1-year follow-up period.

CONCLUSION

T1 rectal cancer could lead to LLNM and possibly, bilateral LLNM. Therefore, adequate clinical evaluation is essential for these patients.

Key Words: T1 rectal cancer; Lateral lymph node metastasis; Lateral lymph node dissection; Brief literature review; Endoscopic submucosal dissection; Case report

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Core Tip: T1 rectal cancer is rarely accompanied by lymph node metastases, and even fewer lateral lymph node (LLN) metastases (LLNM). To our knowledge, the published case reports to date have mainly reported cases of heterochronous LLNM, only two cases with simultaneous metastases, and only one case of missed LLNM after endoscopic submucosal dissection (ESD). For patients with no residual tumor after ESD, in whom LLNM is suspected, it is also inconclusive whether only LLN dissection could be performed.

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INTRODUCTION

The probability of lateral lymph node (LLN) metastasis (LLNM) in locally advanced rectal cancer is 10%-25%[1-3], whereas the corresponding probability of bilateral LLNM is only 2.8%-3.5%[1]. It has been reported that the rate of pelvic extra-regional LNM of T1 rectal cancer is 5.4%[4]. Previous studies have reported that the incidence of LLNM in patients with T1 rectal cancer ranges from 0.5% to 0.9%[5]. However, there have been limited studies in this field, therefore, and more studies are needed. Among the five case reports published to date[6-10], three had focused on heterochronous metastasis and two had reported on simultaneous metastasis. Moreover, four cases had unilateral solitary LLNM (only one LLN had cancer metastasis), and one case had unilateral multiple LLNM (several LLNs at one side had cancer metastasis). In one patient, LLNM was suspected to have been missed before total mesorectal excision (TME) and was found 6 mo postoperatively. In another patient, LLNM was missed before endoscopic submucosal dissection (ESD). The detailed information of the five cases is presented in Table 1. To our knowledge, we report the second case, in which LLNM was missed before ESD, and the first case, where bilateral LLNM was suspected.

CASE PRESENTATION

Chief complaints

A 36-year-old woman underwent a routine physical examination at a local hospital.

History of present illness

Colonoscopy revealed a polypoid lesion with a diameter of 1.5 cm, and the lower edge was located 3 cm from the anal verge. Because the lesion was more likely to be a polyp, ESD was performed at that time. Pathology revealed a mucinous adenocarcinoma, with moderate differentiation and submucosal invasion. There was no residual tumor at the basal edge or in the resection mucosa. The patient visited our hospital immediately for consultation on whether further treatment was needed.

History of past illness

The woman was previously in good health.

Personal and family history

The patient's family history was unremarkable.

Physical examination

Physical examination revealed no abnormalities except several metal clips that could be palpated on digital rectal examination.

Laboratory examinations

We evaluated the carcinoembryonic antigen and carbohydrate antigen-199 levels, which were found to be 2.54 ng/mL and 12.73 ku/L, respectively. Our pathologists also confirmed the pathologic finding of the local hospital.

Imaging examinations

We performed abdominal contrast-enhanced computed tomography (CT) and chest CT for this patient, in addition to a pathological consultation. Magnetic resonance imaging of the pelvis was not performed

Table 1 The detailed information of the previous five cases and our case

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Ref.	Hara *et al*[6], 2008	Sueda *et al*[7], 2013	Ogawa *et al*[8], 2016	Tanishima *et al*[9], 2017	Zhang *et al*[10], 2020	Ours, 2022
Sex	Male	Female	Female	Male	Male	Female
Age (yr)	61	41	35	56	45	36
Risk factors of LNM						
Depth of invasion (μm)	-	-	3000	Head invasion	-	-
Histological type	Well	Moderately	Moderately	Moderately	Well	Moderately
Budding	-	-	-	1	-	-
Time after 1st surgery (mo)	22	6	Simultaneous	6	Simultaneous	Simultaneous
Treatment	Extended, LLND	Extended, LLND	TME + LLND	LLND	TME + LLND	TME + LLND
Bilateral or unilateral LLND	Unilateral	Unilateral	Unilateral	Unilateral	Unilateral	Bilateral
Isolated or multiple LLNM	Isolated	Isolated	Isolated	Multiple	Isolated	Multiple
Adjuvant therapy after LLND	None	None	Tegafururacil + leucovorin	FOLFOX	XELOX + radiotherapy	XELOX + radiotherapy
Follow-up period (mo)	44	12	48	30	10	12
Prognosis	Alive	Alive	Alive	Alive	Alive	Alive

LNM: Lymph node metastasis; TME: Total mesorectal excision; LLND: Lateral lymph node dissection; LLNM: Lateral lymph node metastasis; FOLFOX: Fluorouracil, leucovorin, and oxaliplatin; XELOX: Oxaliplatin plus capecitabine.

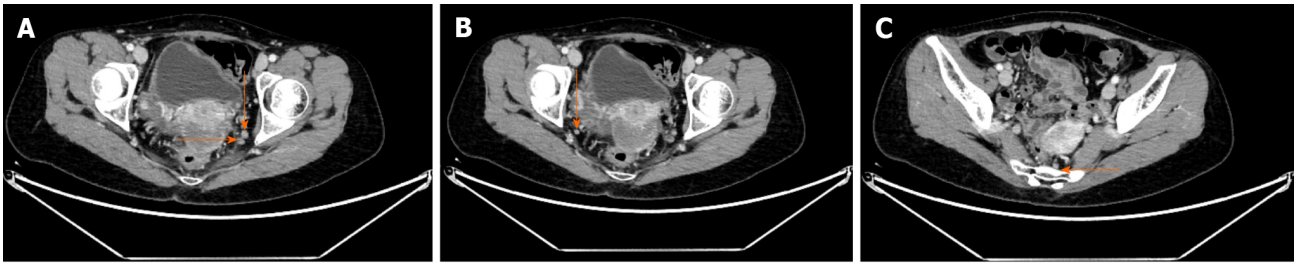

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Figure 1 Computed tomography findings. A: Computed tomography (CT) imaging findings for the two left enlarged lateral lymph nodes; B: CT imaging findings for the right enlarged lateral lymph node; C: CT imaging findings for the largest mesorectal lymph node (arrow).

because there was no residual tumor. The chest CT scan revealed no sign of distant metastasis. However, the abdominal contrast-enhanced CT showed suspected enlarged bilateral LLNs and some enlarged mesorectal LNs (MLN) (Figure 1). Among these, there were two enlarged LLNs in the left lateral area, both located in the distal internal iliac region (263D)[11], with short-axis diameters of 7.1 mm and 6.2 mm, respectively. An enlarged LLN was noted in the right lateral area (distal internal iliac region), with a short-axis diameter of 5.3 mm. These three LLNs had at least two of three malignant features, including a round, irregular border and shape, and heterogeneous density, consistent with a positive LN diagnosis[12]. The maximum short-axis diameter of the enlarged MLN was 4.8 mm, which was insufficient for a diagnosis of LNM.

FURTHER DIAGNOSTIC WORK-UP

After discussions with the multidisciplinary team and after obtaining the consent of the patient and her family, laparoscopic TME with bilateral lateral lymph node dissection (LLND) was performed. The

patient recovered uneventfully and was hospitalized for 10 d with no complications. There was no residual tumor in the rectal specimen and the distal and proximal margins were both negative; only partial mucosal hemorrhage with scattered acute and chronic inflammatory cell infiltration was noted. A total of 31 LNs were harvested, including nine MLNs, 13 left LLNs, and nine right LLNs. The MLNs and right LLNs were confirmed to have no metastasis, but the two enlarged left LLNs were confirmed to have metastasis (Figure 2).

FINAL DIAGNOSIS

T1 rectal mucinous adenocarcinoma with simultaneous LLNM.

TREATMENT

The patient received chemotherapy involving six cycles of XELOX (oxaliplatin plus capecitabine) and radiotherapy (50.4 Gy; 28 fractions).

OUTCOME AND FOLLOW-UP

There was no sign of recurrence or metastasis, and the patient's urinary and sexual functions were normal during the 1-year follow-up.

DISCUSSION

A meta-analysis suggested that there is only a 1.9% risk of LNM in T1 rectal cancers with low-risk criteria[13], which was defined as submucosal invasion of ≤ 1000 μm without poor differentiation, lymphovascular invasion, or budding[14]. Thus, the probability of LLNM is even lower in this type of cancer. Most patients with T1 rectal cancer with a diameter of ≤ 2 mm can be cured with ESD[15]. However, the main problem is that it is often difficult to assess the low-risk criteria prior to ESD[16]. Moreover, LLNM is easily missed, especially in patients with early-stage rectal cancer[9].

In our case, the patient achieved the standard clinical cure because she had no risk factors. If the patient did not take the initiative to come to our hospital for a consultation, the LLNM would most likely have been missed. Moreover, she was even suspected to have bilateral LLNM, although it was finally confirmed that she had only unilateral LLNM. Patients with T1 rectal cancer are at the risk of LLNM and may even have bilateral LLNM. ESD may guarantee a clinical cure for the majority of patients with T1 rectal cancer. However, a few patients may need more in-depth clinical examinations to ensure that there is no missed diagnosis, not only for LLNM, but also for liver or lung metastasis[17,18]. Therefore, we suggest that if the relevant examinations cannot be completed before ESD for evaluating the patient's condition, these examinations should be completed after ESD and according to the standard management for advanced rectal cancer, even if the patients are pathologically diagnosed with T1 stage and have no risk factors. Such an approach would avoid the possibility of missing LLNM or distant metastases.

At present, for advanced rectal cancer with suspected LLNM, although the National Comprehensive Cancer Network guidelines recommend neoadjuvant chemoradiotherapy (nCRT) combined with TME [19], and Japanese guidelines recommend preventive LLND combined with TME[11], neither method can effectively control the lateral local recurrence[20]. Therefore, more and more scholars recommend nCRT combined with TME and selective LLND with the in-depth clinical research[21]. However, there is no guideline or consensus for the treatment of T1 rectal cancer with suspected LLNM. Moreover, the prognosis of advanced rectal cancer with LLNM is significantly worse than that without LLNM, therefore, LLND is necessary[22]. However, no prognostic data have been reported in T1 rectal cancer with LLNM because not enough cases have been reported. Furthermore, we believe that LLND is important in T1 rectal cancer with suspected LLNM according to the prognostic data of advanced rectal cancer.

In addition, in view of the report of Zhang *et al*[10] and the present study, although simultaneous LLNM was considered after ESD, no residual tumor or mesorectal LNM was observed after TME and LLND. Therefore, LLND may only be possible in such patients (without considering residual tumor and mesorectal LNM) after adequate assessment of the patient's status. Instead, the "watch and wait" strategy can be implemented for the primary tumor and MLN. However, we have no clinical practice experience regarding this, and our theory needs to be confirmed by more cases or multicenter studies.

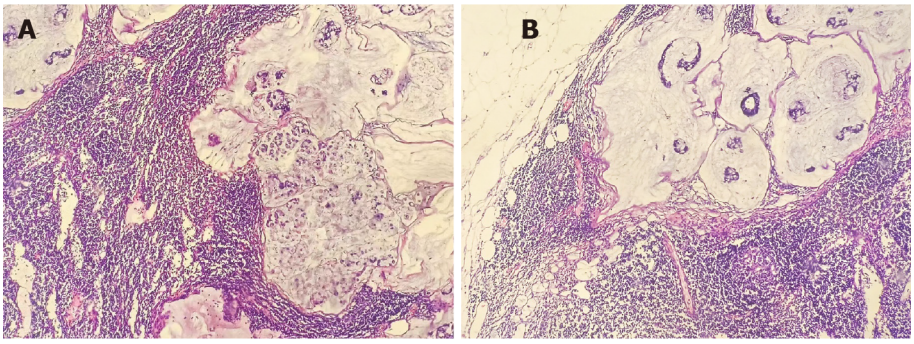

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Figure 2 Pathological imaging for the two positive left lateral lymph nodes (hematoxylin and eosin × 100). A and B: Pathological images of two positive lateral lymph nodes, respectively. The lymphatic structure is destroyed, and numerous mucous lakes are formed in which floating adenosine cells are observed.

CONCLUSION

T1 rectal cancer could lead to LLNM and possibly, bilateral LLNM. Therefore, adequate clinical evaluation is essential in patients with this type of cancer.

FOOTNOTES

Author contributions: Liu XW, Zhou B and Wu XY participated in data collection and manuscript writing; Liu XW, Yu WB and Zhu RF completed the surgery; and all authors read and approved the final manuscript.

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