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Local excision after neoadjuvant chemoradiation therapy in advanced rectal cancer: a national multicenter analysis

Chang Sik Yu, M.D.[a], Hae Ran Yun, M.D.[b], Eung Jin Shin, M.D.[c], Kang Yong Lee, M.D.[d], Nam Kyu Kim, M.D.[d], Seok-Byung Lim, M.D.[a], Seong Taek Oh, M.D.[e], Sung-Bum Kang, M.D.[f], Won Joon Choi, M.D.[g], Woo Yong Lee, M.D.[b,*], Colorectal Cancer Study Group, Korean Society of Coloproctology

[a]Department of Surgery, University of Ulsan College of Medicine & Asan Medical Center, Seoul, Korea; [b]Department of Surgery, Samsung Medical Center, Sungkyunkwan University of School of Medicine, Ilwon-dong 50, Gangnam-gu, Seoul 135-710, Korea; [c]Department of Surgery, Soonchunhyang University Hospital, Bucheon, Korea; [d]Department of Surgery, Yonsei University College of Medicine, Seoul, Korea; [e]Department of Surgery, Seoul St. Mary's Hospital, The Catholic University of Korea, Seoul, Korea; [f]Department of Surgery, Seoul National University Bundang Hospital, Seoul National University College of Medicine, Seongnam, Korea; [g]Department of Surgery, Konyang University College of Medicine, Daejeon, Korea

KEYWORDS:
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Local excision

Abstract

BACKGROUND: The aim of the current study was to evaluate the clinical availability of local excision (LE) for advanced rectal cancer without lymph node metastasis after neoadjuvant chemoradiation therapy (nCRT) in Korea.

METHODS: From June 2000 to October 2009, 40 patients with cT2-3N0M0 rectal cancer underwent nCRT followed by LE according to a retrospective multicenter analysis.

RESULTS: Of the 40 patients, 22 were men and 18 were women. Eighteen patients were cT2, and 22 patients were cT3. The median follow-up duration was 38 months. Three patients (7.5%) had morbidity after LE. Four patients (10%) had recurrence (local recurrence [1 patient] and systemic metastasis [3 patients]). The 3-year disease-free survival rate was 85.9%. Only pCR was a recurrence-related prognostic factor ($P = .040$).

CONCLUSIONS: Although the current study was not a randomized controlled study, LE after nCRT in T2-3N0 rectal cancer patients appears to be a safe and effective treatment, especially in pCR patients.

Neoadjuvant chemoradiation therapy (nCRT) is increasingly being viewed as the gold standard for rectal cancer management. With the frequent use of nCRT for the treatment of locally advanced rectal cancer, there is growing interest in the application of local excision (LE) for select circumstances.[1,2] Although nCRT has been shown to reduce the local recurrence rate,[3,4] LE in advanced rectal cancer remains a controversial issue. Reluctance to adopt LE for advanced rectal cancer after nCRT is primarily related to concern about inadequate treatment of the locoregional lymph nodes.[3,5]

There are several reports about the feasibility of LE in advanced rectal cancer,[2,6,7] most of which are single-center

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* Corresponding author. Tel.: +82-2-3410-0261; fax: +82-2-3410-6980.
E-mail address: lwy555@skku.edu
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studies that cannot be extrapolated to other centers because of vagueness in the selection criteria, patient information, and methods of nCRT. In the present study, we aimed to evaluate whether nCRT with LE in cT2N0 or cT3N0 distal rectal cancer patients is a valid alternative to radical resection and to analyze the prognostic factors from multicenter analysis.

Methods

This multicenter, retrospective study was conducted based on data from 6 hospitals with colorectal cancer centers in Korea. Between June 2000 and October 2009, we enrolled 49 patients with lower rectal cancer who underwent nCRT and subsequently underwent LE. Inclusion criteria were rectal cancer below 5 cm from the anal verge, clinical classification of T3N0M0 or T2N0M0, and full-thickness LE after nCRT for curative intent. If a patient had a positive circumferential margin at the initial pathologic report, that patient underwent repeat LE to obtain a clear resection margin.

Exclusion criteria included clinically perirectal lymph node metastasis, distant metastasis, partial-thickness LE, or chemoradiation therapy as palliative treatment. Furthermore, patients who had unsufficient data for analysis were excluded.

Based on the inclusion criteria, we reviewed a total of 40 patients for sex, age, clinicopathologic features of the primary tumor, regimen of nCRT, interval between nCRT and surgery, complications during chemoradiation therapy, morbidity after LE, and recurrence rates.

Pre- and post-nCRT clinical T (cT) staging was defined using the best available imaging modalities including abdominal and pelvic computed tomographic (CT) scans, magnetic resonance imaging (MRI), and transanal ultrasonography. Operative morbidity and mortality were defined as occurring within 30 days after the primary operation.

Data for continuous variables are presented as mean or median (range) values. The cumulative probability of recurrence was estimated with the Kaplan-Meier method.

Surveillance

Patients were scheduled for follow-up visits every 3 to 4 months for the first 1 year, every 6 months for up to 4 years, and then annually thereafter. Follow-up evaluations included physical examination, pelvic evaluation (abdominal and pelvic CT scans or ERUS or magnetic resonance imaging (MRI)), chest x-rays, and endoscopy). Abnormal physical findings or laboratory results mandated further screening with Endorectal ultrasound (ERUS), ultrasonography, abdominal and pelvic CT scans, chest CT scans, MRI, or positron-emission tomography scanning as indicated based on the clinicians' decisions.

Results

Patient characteristics

Demographic data for the patient group are summarized in Table 1. During the study period, based on the inclusion criteria, a total of 40 patients were analyzed, including 22 men and 18 women. The patients had all undergone LE via transanal endoscopic microsurgery (n = 18) or transanal excision (n = 22). The mean age was 59.5 years (range 35 to 82 years). The median follow-up duration was 38 months (range 6 to 108 months).

Eighteen patients had T2N0M0, and 22 patients had T3N0M0 for pre-nCRT staging. All patients received nCRT with a mean of 4,648 cGy (range 3,200 to 5,040 cGy); 5-fluorouracil or capecitabine was used as the main chemotherapeutic agents. LE was performed at 7 weeks (range 2 to 10 weeks) after nCRT. Eighteen patients had additional adjuvant chemotherapy after LE.

The clinicopathologic results of primary rectal cancer are presented in Table 2. The mean distance from the tumor to the anal verge was 3.1 cm (range 1 to 5 cm). The mean diameter of tumors was 1.8 cm (range 1 to 5 cm) before nCRT and .8 cm (range 1 to 5 cm) after LE. Most tumors exhibited low-grade differentiation (31 patients [77.5%]) and ulcerofungating features (27 patients [67.5%]).

Table 3 summarizes the clinicopathologic response to nCRT. Of the 40 patients staged as having cT2 or cT3 lesions before nCRT, 38 (95%) showed definitive histologic downstaging. Nineteen patients (47.5%) showed pathologic

Table 1 Patient demographics (N = 40)

Sex (n) (%)	Male	22 (55.0)
	Female	18 (45.0)
Age, y (range)	59.5 (35–82)	
Pre-CRT T staging	cT2	18 (45.0)
	cT3	22 (55.0)
Post-CRT pT staging	pCR	19 (47.5)
	pTis	3 (7.5)
	pT1	12 (30.0)
	pT2	5 (12.5)
	pT3	1 (2.5)
TRG	Total	19 (47.5)
	Near total	9 (22.5)
	Minimal	5 (12.5)
	Moderate	7 (17.5)
Dosage of radiation (cGy)	4,648 (3,200–5,040)	
Regimen of chemotherapy (n) (%)	5FU	19 (47.5)
	Capecitabin	19 (47.5)
	Others	2 (5.0)
Interval of LE after CRT (wk) (range)	7.0 (4–13)	
Post-LE adjuvant chemotherapy (n) (%)	No	22 (55.0)
	Yes	18 (45.0)

CRT = chemoradiation therapy; LE = local excision; TRG = Tumor regression grade.