The American Journal of Surgery 221 (2021) 620–621

Contents lists available at ScienceDirect

The American Journal of Surgery

journal homepage: www.americanjournalofsurgery.com

My Thoughts/My Surgical Practice

Long-term oncologic outcomes following neoadjuvant therapy and transanal excision of T2 or T3 rectal cancer

Colorectal cancer is the third most commonly diagnosed cancer in the United States with over 140,000 new cases per year.[1] Of these, approximately 40,000 represent rectal cancer.[1] Surgical management of rectal cancers is typically comprised of neoadjuvant therapy and total mesorectal excision. Yet, total mesorectal excision carries significant risk for morbidity and mortality with complication rates up to 46% including perineal wound dehiscence, deep wound infection, anastomotic leak, fecal incontinence, and sexual dysfunction.[2,3]

Due to the high risk of morbidity associated with total mesorectal excision and patient interest in organ preservation, transanal excision emerged as an alternative in select patients. However, in order to decrease rates of local recurrence, transanal excision is typically only considered for T1N0 rectal adenocarcinoma with favorable prognostic features.[4,5] Higher rates of local recurrence are associated with transanal excision in more advanced stage tumors. Therefore, typically patients offered transanal excision are those with T1 tumors that meet these specific criteria. Yet, some patients with T2 or greater disease, that are risk prohibitive or refuse to undergo total mesorectal excision, choose transanal excision in combination with neoadjuvant therapy. Unfortunately, there remains a large gap in knowledge of the long-term oncologic outcomes associated with transanal excision in patients who have either T2 or T3 rectal cancer without lymph node or distant metastases and are not able to or refuse to undergo a major surgery or life with an ostomy.

Therefore, we performed a retrospective analysis of patients with T2 or T3 rectal cancer who underwent transanal excision in addition to neoadjuvant and/or adjuvant therapy from October 2007 through June 2014to assess their long-term oncologic outcomes at our academic tertiary referral institution. Our hypothesis was that these patients will have overall and disease-free survival rates comparable to that already published for patients with T1 rectal cancer undergoing transanal excision.

Our division of colon and rectal surgery is composed of four surgeons. Patients underwent transanal excision if they were deemed too “high risk” for surgery, if the patients refused radical surgery, and lastly if they had a complete or near complete clinical response based on flexible endoscopy in response to neoadjuvant therapy and chose to undergo a transanal excision with close follow-up. “High risk” was determined based on medical comorbidities including severe COPD, recent myocardial infarction or cerebrovascular accident with stent, and poor functional capacity or performance status. We studied a total of thirty-five patients who underwent neoadjuvant therapy with subsequent transanal excision at a mean of 13 weeks after completion of neoadjuvant therapy. Twenty of these patients were diagnosed with T2 rectal cancer, and fifteen were diagnosed with T3 rectal cancer at initial diagnosis. The average Charlson comorbidity index was 2.9 for the entire cohort. All patients underwent neoadjuvant radiation, while 92% received concurrent neoadjuvant chemotherapy. Fourteen patients had no residual tumor or polyp on final pathology while an additional two had only high-grade dysplasia. The remaining 19 patients had residual adenocarcinoma, of which nine had ypT1 tumors, nine had ypT2 tumors, and one patient had ypT3 tumor. We were able to complete R0 resection for 100% for the T2 cohort, 80% for T3 cohort, and 92% for the cohort overall. Thirty-one of the thirty-five patients had pathology that was down staged after transanal excision. For the entire cohort, the mean follow-up was 59 months with an overall recurrence rate of 8.6%. The T2 cohort had one patient with a recurrence while the T3 cohort had two patients with recurrences. The average time to recurrence was 12.7 months. Of the sixteen patients with a final T stage of either ypT0-Tis, there were zero recurrences in comparison to a 16% recurrence rate in the nineteen patients with a final T stage of ypT1-3. Of the 3 patients with recurrences, two were in the T3 cohort and died from the recurrence. There were four deaths in total during the study period: one from unknown cause but with residual cancer, one from bleeding from radiation proctitis and two deaths from complications of metastatic cancer (1 rectal, 1 pancreatic). At five years, the overall survival for T2 and T3 rectal cancer was 95.2% and 87%, respectively, while overall survival for the entire cohort was 91.4%. The disease-free survival at five years for the T2 cohort was 95%, 87% for T3 cohort, and 91.4% for the entire cohort.

Our results demonstrate comparable long-term oncologic outcomes for patients who underwent neoadjuvant therapy and transanal excision for T2 or T3 rectal cancers when compared to the published literature on transanal excision for T1 rectal cancers. This suggests that for high-risk patients for whom any surgical procedure brings significant risk, those who refuse to undergo radical surgery or refuse to live with a permanent colostomy, transanal excision with neoadjuvant chemotherapy and radiation therapy may be considered as a feasible surgical option. These decisions of course cannot be taken lightly, and patients must be counseled about the standard of care of total mesorectal excision and the possible risks of recurrence. Further, the “watch and wait” approach to following patients with a clinical complete response after neoadjuvant therapy may offer additional details on which patients have higher success of disease-free survival without radical excision. These studies of patients who choose to undergo “watch and wait” may continue to help to understand which patients may be candidates for forgoing radical excision while maintaining the low local recurrence and high survival rates comparable to patients who underwent radical excision.

https://doi.org/10.1016/j.amjsurg.2020.08.029

CRediT authorship contribution statement

Sidrah Khan: Conceptualization, Writing - original draft, Funding acquisition, Data curation, Formal analysis, conception and design, Drafting of manuscript, Acquisition of data, Analysis and interpretation of data, Critical revisions. **Jesse Guardado:** Conceptualization, Writing - original draft, Funding acquisition, Data curation, Conceptualization, conception and design, Drafting of manuscript, Acquisition of data, Critical revisions. **Brandon Mahler:** Conceptualization, Funding acquisition, Data curation, Formal analysis, Conceptualization, conception and design, Acquisition of data, Analysis and interpretation of data, Critical revisions. **Javier Salgado:** Conceptualization, Data curation, Formal analysis, conception and design, Analysis and interpretation of data, Critical revisions. **James Celebrezze:** Conceptualization, conception and design, Critical revisions. **David Medich:** Conceptualization, conception and design, Critical revisions. **Jennifer Holder-Murray:** Conceptualization, Writing - original draft, conception and design, Drafting of manuscript, Critical revisions.

Declaration of competing interest

The authors have no conflicts of interest to report.

Acknowledgments

The University of Pittsburgh holds a Physician-Scientist Institutional Award from the Burroughs Wellcome Fund

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3 August 2020