Conservative Management of Rectal Cancer With Local Excision and Adjuvant Therapy

In their article, Drs. Wagman and Minsky provide an excellent overview of the current status of local treatment strategies for early rectal cancer. They have rightly pointed out that while minimal surgery is an attractive option, it must be balanced against the highly curable outcomes of radical surgical resection. Expanded experience with stapling devices has extended the level at which safe and satisfactory anastomoses can be accomplished in the distal rectum. The promise of enhanced preservation of rectal, urinary, and sexual functions makes local treatment strategies an attractive option. The most important aspect of disease management using this approach remains the process of patient selection.

Importance of Patient Selection

Less than 10% of all patients with rectal cancer present with T1 or T2 disease. Even in this small subgroup, a variety of factors, such as tumor size, stage, location, and patient habitus, often determine suitability for local treatment. Conservative surgery should only be considered if the probability of cure with surgery alone is high. Postoperative adjuvant therapy should be an option reserved for findings of unfavorable histopathologic features and should not be used as salvage therapy for inadequate surgical resections. This would limit local excisions to T1 and "early" T2 cancers (ie, those with minimal infiltration of the muscularis propria).

The greatest value of transrectal ultrasound and magnetic resonance imaging is in staging these early lesions. The results of the Cancer and Leukemia Group B trial of local excision are cause for concern, in that 51 (almost 32%) of 161 patients were found to have more extensive T3 tumors or positive surgical margins.[1]. It remains unclear how an unsatisfactory local excision in these patients may have compromised the subsequent outcome. These patients not only run the risk of tumors seeding the perirectal space, but they may have also lost the opportunity for radical sphincter-preservation surgery.

Challenges of Rectal Tumors

The location of the tumor in the rectum can present unique surgical challenges. In men with an enlarged prostate, tumors of the anterior rectal wall can pose a difficult technical problem. Similarly, in women, the proximity of the vaginal wall can compromise adequate deep margins for resection. Lesion size can also create a substantial challenge. Although the standard recommendation for excision specifies tumors ≤ 3 cm or those occupying less than 40% of the rectal wall’s circumference, a more important consideration is the ability of the surgeon to effect an en bloc excision with a "healthy" circumference and deep margins. Drs. Wagman and Minsky appropriately emphasize the unfavorable outcomes in patients with positive surgical margins and in patients undergoing piecemeal excision of their tumors.

There is considerable controversy, however, as to what constitutes an adequate margin. Different
authors have considered margins of 1-, 2-, or 3-mm cancer-free zones as adequate. Others have held that a "healthy" margin is satisfactory. Clearly, there is a need to develop greater precision in defining a suitable margin for cure by local excision. Normal considerations of 1-cm margins around grossly visible tumors may not be practical, especially with larger lesions, although it is often the larger lesions that require the most generous margins. It is, therefore, imperative that standardization and uniform reporting be developed for this technique.

A particular concern arises with the endoscopic removal of large villous adenomas that are found to harbor invasive cancers upon histologic examination. This situation should not be considered in the category of local excision. Many of these adenomas are removed piecemeal and may not have a full-thickness removal. It is our experience that these tumors fare poorly because the adenomatous components can implant and grow in a surgical wound and perirectal spaces. These cells are particularly resistant to ionizing radiation, and many local recurrences that occur after local excisions are remnants of adenomatous tissue that have been misconstrued as recurrent invasive cancers. They are considered invasive because of their location in deep tissue planes.

It is also interesting to note that the presence of lymph node metastasis is often the rationale for considering adjuvant therapy. However, as pointed out by Drs. Wagman and Minsky, recurrences following local excision in T1 and T2 cancers are invariably local, occurring at the site of resection in the rectal wall.

In extensive experience with endocavitary irradiation without pelvic irradiation, excellent local control was obtained with few regional nodal failures. This raises the question of whether higher doses of radiation to more limited volumes may prove to be more advantageous than conventional doses (45 to 50 Gy) to large pelvic volumes.

At the present time, long-term data are still insufficient to assess the results of postoperative pelvic radiation on bowel, bladder, and sexual functions following local excision. While significant stool clustering and urgency are common after radical resection and postoperative radiation, these problems seem to occur less frequently following local excision. Vaginal dryness and dyspareunia in women and loss of sexual abilities in men are potential side effects following treatment of other pelvic malignancies.

Preoperative Adjuvant Therapy

While our experience, as pointed out by Drs. Wagman and Minsky, indicates an exceedingly favorable outcome with preoperative radiation and local excision, there are only a few similar reports in the literature.[2] The expanding use of preoperative chemoradiation for the treatment of rectal cancer has created new opportunities for extending the scope of conservative surgery to patients with more advanced disease.

Several reports indicate significant downstaging of tumor (by 70% to 80%), with pathologic complete responses of 20% to 30% even in patients with advanced rectal cancers.[3-5] These results are likely to be better for early-stage and smaller-sized lesions. One effect of tumor downstaging is the uncertainty of defining the tumor-bearing area for local excision. Prior to the treatment, it is imperative that the tumor margins be tattooed by India ink so that resection with appropriate margins can be undertaken with confidence. The question of what constitutes adequate margins with preoperative treatment remains to be determined, as does the question of whether resection should include the pretreatment tumor-bearing area or the posttreatment residual tumor with margins.

In our experience with preoperative radiation, minimal resection margins of 1 to 2 mm appear to be adequate. The major attraction of this approach is the potential application of conservative treatment for T3 rectal cancers. Our data strongly suggest that tumors downsaged to T0-T2 lead to excellent local control and survival. However, patients who have persistent postradiation T3 disease require radical surgical resection.

While there are no ongoing randomized studies in the United States to evaluate this approach, an Italian surgical group is currently undertaking a study comparing preoperative chemoradiation followed by transanal endoscopic local excision using microsurgery and radical surgical resection.
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with total mesorectal excision. The results of this study should provide useful data (personal communication, E. Lezche, 1999).

Intracavitary Irradiation

Enthusiasm for intracavitary irradiation of rectal cancer has waned over the past decade. However, several large series reported by Papillon and others indicate excellent local control rates of 76% to 93%. [5,6] Results of this technique are especially favorable for tumors of the anterior rectal wall, which may be the most technically difficult site for local excision. Furthermore, endocavitary irradiation has not been extensively studied in combination with preoperative chemoradiation, which together represent another potential option for conservative treatment of early rectal cancer.

In summary, elective, conservative management of invasive rectal cancer is an exciting new strategy that requires a great deal of discernment, clinical judgment, and technical expertise.

References:

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