Management of Persistent or Locally Recurrent Epidermoid Cancer of the Anal Canal with Abdominoperineal Resection

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We retrospectively evaluated the outcome of 22 patients with epidermoid cancer of the anal canal who underwent surgical salvage after failure of primary chemoradiotherapy. Patients who required surgery had significantly more advanced T-stage than those who did not fail chemoradiotherapy. Eighteen patients failed surgical salvage. Invasion through the muscle wall of the bowel was present in 16 of 18 patients compared with two of four patients who have no evidence of disease (follow-up 5–10 years). Failure occurred only in the pelvis in 13 of the patients who died of disease. The mean time to death after surgery was 19 months. We confirm the overall poor results of conventional abdominoperineal resection in those patients who have failed previous therapy. Most failures occur in the pelvis. Transanorectal ultrasound and magnetic resonance imaging (MRI) may allow better selection of patients for exenterative procedures and identify those not amenable to successful salvage.

Primary chemoradiotherapy leads to cure in 64–90% of patients treated for carcinoma of the anal canal (1–3). Individuals in whom this regimen fails often develop recurrence or have persistent cancer in their pelvis. A significant number of these treatment failures are considered for salvage surgical procedures such as abdominoperineal resection (APR). Success in these cases has generally been modest (4–9). We evaluated our experience with salvage APR in patients with recurrent epidermoid cancer of the anal canal initially treated with combination chemoradiotherapy. We conducted a retrospective review of patients at Princess Margaret Hospital who developed locally recurrent anal cancer and underwent surgery with the intent of cure during a 12-year period.

MATERIAL AND METHODS

From 1978 to 1989, 134 patients received primary treatment for epidermoid cancer of the anal canal at the Princess Margaret Hospital. During this period patients were treated with intermediate to high dose radiation therapy (> 45 Gy) and chemotherapy (5-FU ± Mitomycin C) (10). Patients in whom this treatment protocol failed to produce regression of the primary tumor and those who had evidence of primary and/or pelvic recurrence of disease were identified. The pretreatment characteristics of the patients who underwent salvage surgery are listed in Table 1. Neoplasms of the anal canal were defined as those arising between the anal verge and the palpable upper border of the anal sphincter and tumors were classified histologically as squamous, basaloid, or mucoepidermoid.

Table 1

Pretreatment characteristics of 22 APR patients

Demographics	
Median age (range)	55 (30–88)
Males/females	8/14
Histologic type of primary cancer	
Squamous	19
Basaloid	2
Mucoepidermoid	1
AJCC staging information of primary cancer	
T1 (<2 cm)	1
T2 (2.1–5 cm)	11
T3 (> 5 cm)	1
T4 (invading adjacent organs)	6
N1–3 (perirectal, inguinal or iliac nodes)	6
Stage I	1
Stage II	12
Stage III A/B	9

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Table 2

Outcome of salvage APR

	Patients dead of anal cancer	Patients alive with no disease
Number of patients	18	4
Extent of disease		
Disease through muscle at surgery or histologically	16/18	2/4
Pattern of recurrence following APR		
Pelvic only	13/18	—
Pelvic and extrapelvic	5/18	—
Follow-up [mean months (range)]		
From initiation of primary therapy to APR	11 (2–22)	6 (4–10)
From salvage APR to death	19 (5–70)	—
Total follow-up	30 (11–76)	90 (60–122)

Primary tumors were staged in accordance with the criteria of the American Joint Committee on Cancer (AJCC) (11, 12). The diagnosis of lymph node metastasis was made clinically, with radiological investigations such as computerized tomography (CT) scanning, and confirmed histologically whenever possible. Following primary chemoradiotherapy, patients were followed according to a standard protocol (10). Patients who were managed with APR all had thorough physical examinations and CT scanning prior to operation in an attempt to assess the extent of disease. Operative and pathology records of patients undergoing salvage APR were reviewed.

RESULTS

Failure of disease regression or the development of recurrent anal canal cancer was documented in 36 of 134 patients treated for primary cancer of the anal canal. APR was performed on 22 patients in this group whereas 14 patients were deemed unresectable on account of locally extensive disease or distant metastases. There was a higher proportion of T2 or larger primary tumors in the group that failed primary chemoradiotherapy than in the group that did not fail initial treatment (98 vs. 82%, $p < 0.05$) (10).

Recurrent anal cancer developed in 18 of the 22 patients who underwent APR and all of these patients have died of cancer. Five of these patients had lymph node metastases at the time of their initial presentation whereas one of four survivors had positive nodes before initial treatment ($p =$ ns). Surgical pathology and follow-up data is summarized in Table 2. Invasion through the bowel wall did not preclude curative operation but a large proportion of individuals (10 of 18) who died of disease had residual disease left behind at the time of salvage surgery. Among the survivors, two women with apparent invasion of the vagina achieved long-term survival. These patients had resection of the vagina in continuity with the rectum as a part of the salvage APR. There were no deaths attributable to operation. Although most recurrences occurred early, one patient developed recurrent cancer 50 months after APR and died 20 months later. Recurrent disease after surgery was isolated to the pelvis in 13 of 18 patients but in five cases there were also metastases in extrapelvic sites.

DISCUSSION

Despite overall good results obtained in controlling primary epidermoid cancer of the anus, 10–36% of patients develop persistent or recurrent disease following primary chemoradiotherapy regimens (1, 2, 10). In a significant proportion of these individuals persistent or recurrent cancer is present at the primary site or in the pelvic area proximate to the initial lesion. Although these lesions often appear to be resectable, many surgeons have not achieved satisfactory long-term survival following salvage procedures.

Our results confirm the guarded prognosis for those patients not cured by primary treatment. Four of 22 patients undergoing salvage APR were cured in this series. With the exception of one patient, individuals who developed recurrences after salvage surgery did so within a relatively short time period and succumbed to their disease in a mean time of 19 months. Neither histology nor the T and N stage of the primary cancer predicted the outcome of salvage APR. Extensive imaging preoperatively in order to assess the full extent of tumor prior to operation is critical to plan for complete tumor resection. Increasing experience has been gained with transrectal ultrasound and magnetic resonance imaging (MRI) in the assessment of cancers of the rectum. Such advanced imaging should be considered when characterizing the extent of recurrent anal canal cancer (13–16).

Resections that do not encompass 100% of the residual or recurrent disease are of little or no palliative benefit. The two patients in this series requiring partial resection of the vagina incontinuity with the anorectum reflect the necessity for extended operations in some patients. Importantly, the technique of anorectal resection has undergone significant refinement in past years with the increasingly widespread application of total mesorectal excision (TME) (17). Close adherence to the principles of TME (sharp dissection, wide excision of the entire mesorectum) is expected to be important in achieving optimal results in the highly selected patients undergoing salvage surgery for anal cancer. In addition, wide excisions of the perineum may necessitate use of omentoplasty or musculo-cutaneous flaps to insure healing of the large defects created in an irradiated field (18, 19).

APR with wide resection was the operation of choice in those individuals recommended for salvage surgery. Patients with disease that extends through the entire bowel wall still have a chance for cure if it is possible to remove all gross disease. Importantly, the second failure was restricted to the pelvis in the majority of patients in this report. It is possible that attention to the principles of total mesorectal excision or more aggressive exenterative procedures may afford the best chance for cure in carefully selected patients (15, 20).

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