GE Port J Gastroenterol. 2014;21(5):192–200

Portuguese Journal of Gastroenterology
Jornal Português de Gastrenterologia
www.elsevier.pt/ge

REVIEW ARTICLE

Management of rectal cancer: Times they are changing

Marilia Cravo[a,b,*], Tania Rodrigues[c], Susana Ouro[d], Ana Ferreira[e], Luis Féria[d], Rui Maio[d,f]

[a] *Serviço de Gastrenterologia, Hospital Beatriz Angelo, Loures, Portugal*
[b] *Faculdade de Medicina de Lisboa, Lisboa, Portugal*
[c] *Serviço de Oncologia, Hospital Beatriz Angelo, Loures, Portugal*
[d] *Serviço de Cirurgia, Hospital Beatriz Angelo, Loures, Portugal*
[e] *Serviço de Imagiologia, Hospital Beatriz Angelo, Loures, Portugal*
[f] *Faculdade de Ciências Médicas, Lisboa, Portugal*

Received 12 February 2014; accepted 17 June 2014
Available online 5 August 2014

KEYWORDS
Rectal cancer;
Neo-adjuvant chemoradiation;
Post-treatment staging

Abstract Approximately one third of all colorectal malignancies are located in the rectum. It has long been recognized that rectal cancers behave differently from colonic tumors, namely in terms of local recurrence. For this reason, specific protocols have been developed to manage this disease both in staging procedures as well as in neoadjuvant and adjuvant chemoradiation treatments. Magnetic resonance imaging is now obligatory for rectal cancer staging. Also, pre-operative chemoradiation is recommended in the large majority of locally advanced rectal cancers with obvious advantages in downstaging and downsizing tumors, sometimes allowing spincteric-sparing procedures. Total mesorectum excision is now the rule when operating on rectal cancer. Despite these advances, there are still unanswered questions, namely the utility of using neoadjuvant protocols in low lying, early stage tumors with the aim of performing a local excision procedure and the utility of re-staging the disease after neo-adjuvant treatment. In fact, response to neoadjuvant therapy may become a cornerstone of rectal cancer treatment and individualized therapy. Finally, there is the concern that with current protocols, we are overtreating some patients that would not need such extensive treatment.

In this review, we critically examine recent advances in staging, surgery, and chemoradiation in the management of patients with rectal cancer which have not typically been incorporated in published treatment guidelines.

* Corresponding author.
E-mail address: marilia.cravo@sapo.pt (M. Cravo).

http://dx.doi.org/10.1016/j.jpg.2014.06.003

PALAVRAS-CHAVE
Cancro do reto;
Tratamento multimodal;
Terapêutica individualizada

Manejo do cancro do reto: os tempos estão a mudar

Resumo Cerca de um terço de todos os tumores coloretais estão localizados no reto. Desde há longa data que é reconhecido que os tumores do reto têm um comportamento diferente dos tumores do cólon, nomeadamente em termos de recidiva local. Por este motivo, foram desenvolvidos protocolos específicos para manejar esta doença, tanto em termos de estadiamento como em termos de tratamentos neoadjuvantes e adjuvantes. A ressonância magnética é agora obrigatória como método de estadiamento. Por outro lado, a quimioradioterapia preoperatória é recomendada na grande maioria das neoplasias localmente avançadas com vantagens óbvias no *downstaging* e *downsizing* dos tumores tratados, permitindo por vezes procedimentos cirúrgicos com conservação do aparelho esfincteriano. A excisão do mesoreto é a regra na cirurgia destes tumores. Apesar destes avanços, continuam a existir questões para as quais não existe uma resposta clara, nomeadamente a utilização de protocolos neoadjuvantes em tumores do terço inferior e precoces com o intuito de realizar uma resseção local bem como a utilidade de re-estadiar estes tumores depois da terapêutica neo-adjuvante. De facto, a resposta à terapêutica preoperatória poder-se-á tornar um fator decisivo na implementação de protocolos de terapêutica individualizada. Finalmente, estudos recentes também levantam a questão de alguns dos doentes selecionados para terapêutica neo-adjuvante estarem a ser sobretratados.

Na atual revisão, tentámos rever de forma crítica os avanços recentes utilizados no estadiamento e tratamento destas neoplasias e que atualmente ainda não estão incorporados nas recomendações publicadas.

Introduction

Rectal cancers (RC) comprise approximately 25% of all primary colorectal cancers and follow a different natural disease course compared to colonic tumors. It is well established that surgical approach, local recurrence rates and associated complications of early stage rectal tumors are distinct from colonic cancers. This led to the establishment of specific and distinct protocols for staging and treatment of RC, namely the use of magnetic resonance imaging (MRI) for staging as well as the use of preoperative chemoradiation in selected cases.[1] These advances in the management of patients with RC in the last decade contributed to a marked improvement in patients' outcomes. In the United States five-year survival increased from of 49.2% in the 70s' to 68.5% in the 2000–2005 period. The same trend was observed in Europe.[1–3] This improvement may be related not only to disease detection at an earlier stage and widespread use of optimal surgery with total mesorectal excision (TME) but also to a multidisciplinary approach in specialized centers with an increased use of both radiotherapy and chemotherapy, ideally in a neoadjuvant context.[3,4]

Despite these advances, many issues remain unanswered, namely whether the surgical approach after chemoradiation can be modified based on tumor response, the wait and watch strategy for complete responders and more recently, whether preoperative radiotherapy should be selective, probably based on MRI findings.

In this review, we will review recent changes in the multimodal approach to this tumor.

Tumor staging

Pre operative

Preoperative staging of RC has two main objectives: to define the pertinent anatomy for surgical planning and to determine prognosis. Staging process begins with digital rectal examination. The accuracy of T assessment by digital examination ranges from 58% to 88%, largely depending on the surgeon's experience.[5] For the precise localization of tumors, especially those beyond the reach of an examining finger, rigid proctoscopy is obligatory and should be considered as the single most useful tool.

In the initial preoperative setting, superficial, RCs are probably best staged by endoscopic ultrasonography (EUS), whereas MRI should be used in all other RCs because of its proven high sensitivity and specificity in determining N-stage, extramural vascular invasion (EMVI) and circumferential resection margin (CRM).[6–8] EUS more accurately determines T category as compared to MRI, although low-lying, very high or near-obstrutive tumors are major drawbacks to the use of EUS. Both MRI and EUS share the risk of understaging small lymph nodes (LN) especially when criteria to distinguish inflammatory from pathologic LN rely mainly on size, as many as 25% of positive LNs are smaller than 3 mm.[9] Although not included in TNM classification, tumor proximity to the mesorectal fascia (MRF) increases the risk of compromised CRM (CRM+), which is better predicted by MRI and which has been shown to be an independent risk factor of LR when determined by pathological examination.[10] The MRF with tumor in close proximity