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ORIGINAL ARTICLE

Aetiology and prevalence of post-colonoscopy colorectal cancer☆,☆☆

María Lourdes Ruiz-Rebollo[a,*], Lourdes del Olmo-Martínez[a], Benito Velayos-Jiménez[a], Maria Fe Muñoz[b], María Álvarez-Quiñones-Sanz[c], José Manuel González-Hernández[a]

[a] *Servicio de Aparato Digestivo, Hospital Clínico Universitario, Valladolid, Spain*
[b] *Unidad de Apoyo a la Investigación, Hospital Clínico Universitario, Valladolid, Spain*
[c] *Servicio de Anatomía Patológica, Hospital Clínico Universitario, Valladolid, Spain*

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KEYWORDS
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Abstract
Background: Colonoscopy is the gold standard for the detection and prevention of colorectal cancer (CRC). However, some individuals are diagnosed with CRC soon after a previous colonoscopy.
Aims: To evaluate the rate of new onset or missed CRC after a previous colonoscopy and to study potential risk factors.
Methods: Patients in our endoscopy database diagnosed with CRC from March 2004 to September 2011 were identified, selecting those with a colonoscopy performed within the previous 5 years. Medical records included age, gender, comorbidities and colonoscopy indication. Tumour characteristics studied were localisation, size, histological grade and TNM stage and possible cause. These patients were compared with those diagnosed with CRC at their first endoscopy (sporadic CRC-control group).
Results: A total of 712 patients with CRC were included; 24 patients (3.6%) had undergone colonoscopy within the previous 5 years (50% male, 50% female, mean age 72). Post-colonoscopy CRCs were attributed to: 1 (4.2%) incomplete colonoscopy, 4 (16.6%) incomplete polyp removal, 1 (4.2%) failed biopsy, 8 (33.3%) 'missed lesions' and 10 (41.7%) new onset CRC. Post-colonoscopy CRCs were smaller in size than sporadic CRCs (3.2 cm vs. 4.5 cm, $p < 0.001$) and were mainly

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* Corresponding author.
E-mail address: ruizrebollo@hotmail.com (M.L. Ruiz-Rebollo).

located in the proximal colon (63% vs. 35%, $p = 0.006$); no difference in histological grade was found ($p = 0.125$), although there was a tendency towards a lower TNM stage ($p = 0.053$).
Conclusions: There is a minor risk of CRC development after a previous colonoscopy (3.6%). Most of these (58.4%) are due to preventable factors. Post-colonoscopy CRCs were smaller and mainly right-sided, with a tendency towards an earlier TNM stage.

PALABRAS CLAVE
Carcinoma colorrectal;
Colonoscopia;
Prevención;
Carcinoma de intervalo

Etiología y prevalencia de los cánceres colorrectales poscolonoscopia

Resumen
Introducción: La colonoscopia es el *gold standard* en la detección y prevención del cáncer colorrectal (CCR). No obstante, en la práctica clínica habitual nos encontramos con pacientes que desarrollan un CCR a pesar de que se habían sometido a una colonoscopia previamente.
Objetivos: Estudiar la prevalencia de CCR *de novo* o no detectados tras la realización de una colonoscopia y valorar los posibles factores de riesgo.
Pacientes: Se incluyen los pacientes diagnosticados de CCR registrados en la base de datos endoscópicos de nuestro hospital entre marzo de 2004 y septiembre de 2011. Identificamos los pacientes que tenían realizada una colonoscopia en los 5 años previos. Se recogieron: edad, sexo, comorbilidades e indicación de la colonoscopia, tamaño y localización del tumor, así como su grado de diferenciación, su clasificación TNM y las posibles causas. Posteriormente comparamos este subgrupo de pacientes con los que habían sido diagnosticados de CCR en su primera colonoscopia (CCR esporádico, grupo control).
Resultados: Se incluyeron 712 pacientes diagnosticados de CCR. Veinticuatro de ellos (3,6%) tenían una colonoscopia realizada en los 5 años previos (50% varones, 50% mujeres, edad media 72 años). Estos CCR poscolonoscopia se atribuyeron: uno (4,2%) a colonoscopia incompleta, 4 (16,6%) a resección incompleta de adenoma, uno (4,2%) a biopsia fallida, 8 (33,3%) a «lesiones no detectadas» y 10 (41,7%) fueron CCR de nueva aparición. Los CCR poscolonoscopia eran de menor tamaño que los CCR esporádicos (3,2 vs 4,5 cm, $p < 0,001$), principalmente localizados en colon proximal (62% vs 35%, $p = 0,006$); no hubo diferencias en cuanto al grado histológico ($p = 0,125$), pero sí una tendencia a presentar un mejor estadio TNM ($p = 0,053$).
Conclusiones: La tasa de CCR tras una colonoscopia previa en nuestra serie es del 3,6%. Las posibles causas de estos CCR se atribuyeron en su mayoría (58,4%) a factores relacionados al procedimiento endoscópico y, por tanto, evitables. Estos hallazgos reafirman la importancia de ajustarse a los indicadores de calidad de la colonoscopia. Los CCR poscolonoscopia fueron de menor tamaño, localizados fundamentalmente en colon derecho y con tendencia a presentar un estadio TNM más precoz.

Introduction

Colorectal cancer (CRC) is the second leading cause of death in developed countries.[1,2] Approximately half of the 22 000 cases detected annually in Spain are fatal.[3] Prognosis depends on early detection[4] and, especially, endoscopic removal of precursor adenomatous polyps,[5] as shown in US (The National Polyp Study)[5] and European (The Italian Multicenter Study) studies.[6] Colonoscopy is, in theory, the best diagnostic tool for the early detection of CRC and for removal of adenomatous precursor lesions.[7] However, this technique is not always infallible, even in expert hands, and the development of CRC has occasionally been described in patients in whom this endoscopic examination had previously been performed.[8,9] Thus, in the Polyp Prevention Trial Continued Follow-Up Study conducted in the US, the authors found 9 patients who developed CRC despite periodic endoscopic surveillance.[10] It is therefore necessary to determine the causes and nature of these post-colonoscopy CRCs in order to improve prevention. Post-colonoscopy CRC can occur for 2 reasons: (a) factors inherent to the endoscopic procedure itself, such as incomplete or inadequate endoscopic examination, or incomplete removal of precursor adenomas, or (b) biological factors inherent to the CRC which make it more aggressive and speed up development and progression.