

APPENDECTOMY OR RIGHT HEMICOLECTOMY IN THE TREATMENT OF APPENDICEAL CARCINOID TUMORS?

Rosario Fornaro, Marco Frascio, Camilla Sticchi, Luigi De Salvo, Cesare Stabilini, Francesca Mandolino, Barbara Ricci, and Ezio Gianetta

Department of Surgery, University of Genoa, Genoa, Italy

Aims and background: Carcinoids of the appendix continue to be of interest, despite their low incidence. There is still considerable controversy surrounding these tumors, especially with regard to the role of right hemicolectomy in the surgical management. The aim of this work was to explicate the current therapeutic knowledge and to review the criteria for the indications of appendectomy or hemicolectomy.

Methods: The records of patients who underwent appendectomies from 1990 to 2000 were analyzed. Seven patients were included in the study. The clinical data were reviewed for demographic details, tumor size, localization in the appendix, histological patterns and surgical procedures. All patients underwent appendectomy including removal of the mesenterium, and in one of them a right hemicolectomy was performed 3 weeks later. The mean follow-up was 7 years (range, 4-14). Follow-up data included symptoms, urinary 5-hydroxyindoleacetic acid, ultrasound examination, computerized tomography, and octreotide scanning.

Results: Seven patients (0.9% of all appendectomies) were reported to have carcinoid tumors of the appendix. They were 3 men and 4 women with a mean age of 29 years. All patients were admitted for appendicitis. None suffered from the carcinoid syndrome. The site of the tumor was the apex of the appendix in 4 cases, the body in 2 cases and the base in 1 case.

Key words: appendiceal carcinoid tumors, surgical treatment.

Mean tumor diameter was 8 mm (range, 5-29 mm); in 6 patients it was <2 cm. Treatment was appendectomy in all cases; additional right hemicolectomy was necessary in one case because of a tumor of more than 2 cm with invasion of the mesoappendix and lymph nodes. The 7-year survival rate is 100%. Six patients are without disease, while 1 patient (the one who underwent a right hemicolectomy) developed metastases in the liver 6 years after the operation. This patient, who was treated with a liver resection, is still alive.

Conclusions: According to current guidelines, an appendectomy may be performed for small carcinoid tumors (<1 cm). Reasons for more extensive surgery than appendectomy are tumor size >2 cm, lymphatic invasion, lymph node involvement, spread to the mesoappendix, tumor-positive resection margins, and cellular pleomorphism with a high mitotic index. The criteria that direct us towards major (hemicolectomy) or minor surgery (appendectomy) are controversial. Tumor size is still considered the most important prognostic factor, with a presumed increase in the risk of metastasis for tumors greater than 2.0 cm. The accepted treatment of such tumors is a right hemicolectomy. However, there is no evidence demonstrating a survival benefit for right hemicolectomy over simple appendectomy in patients with carcinoids greater than 2.0 cm in diameter.

Acknowledgments: We wish to thank Professor Edoardo Berti Riboli for his support and effective stimulus to the research.

Correspondence to: Prof Rosario Fornaro, Dipartimento di Chirurgia, Largo R. Benzi 8, 16132 Genoa, Italy. Tel +39-010-3537240; fax +39-010-3537240; e-mail rfornaro@unige.it

Received November 6, 2006; accepted June 14, 2007.