



Intestinal microbiota and colorectal cancer

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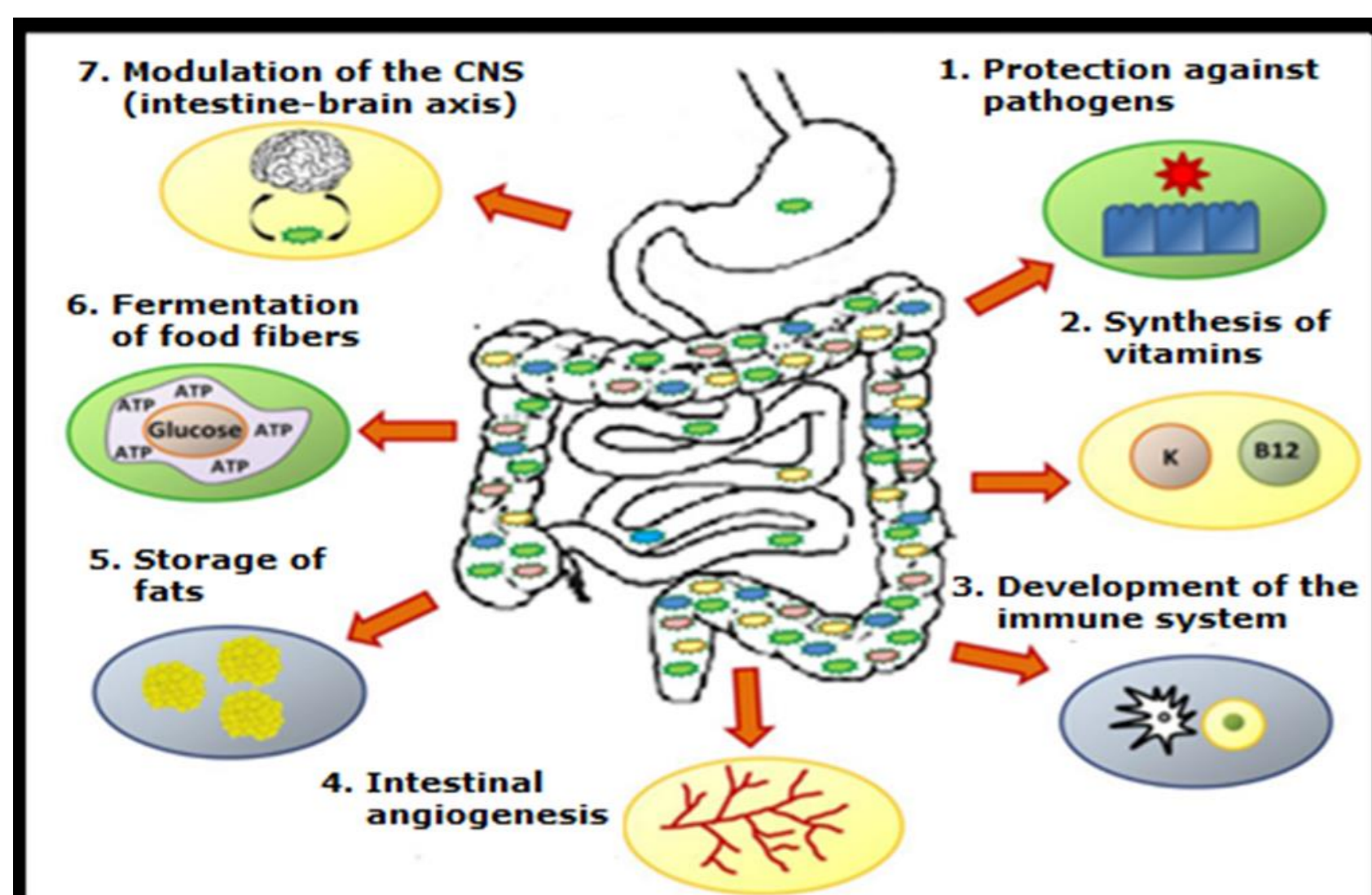


Figure 1: Roll of gut microbiota. Amon P., Sanderson I., What is the microbiome?, Archives of Disease in Childhood - Education and Practice 102(5): edpract-2016-311643, 2017.

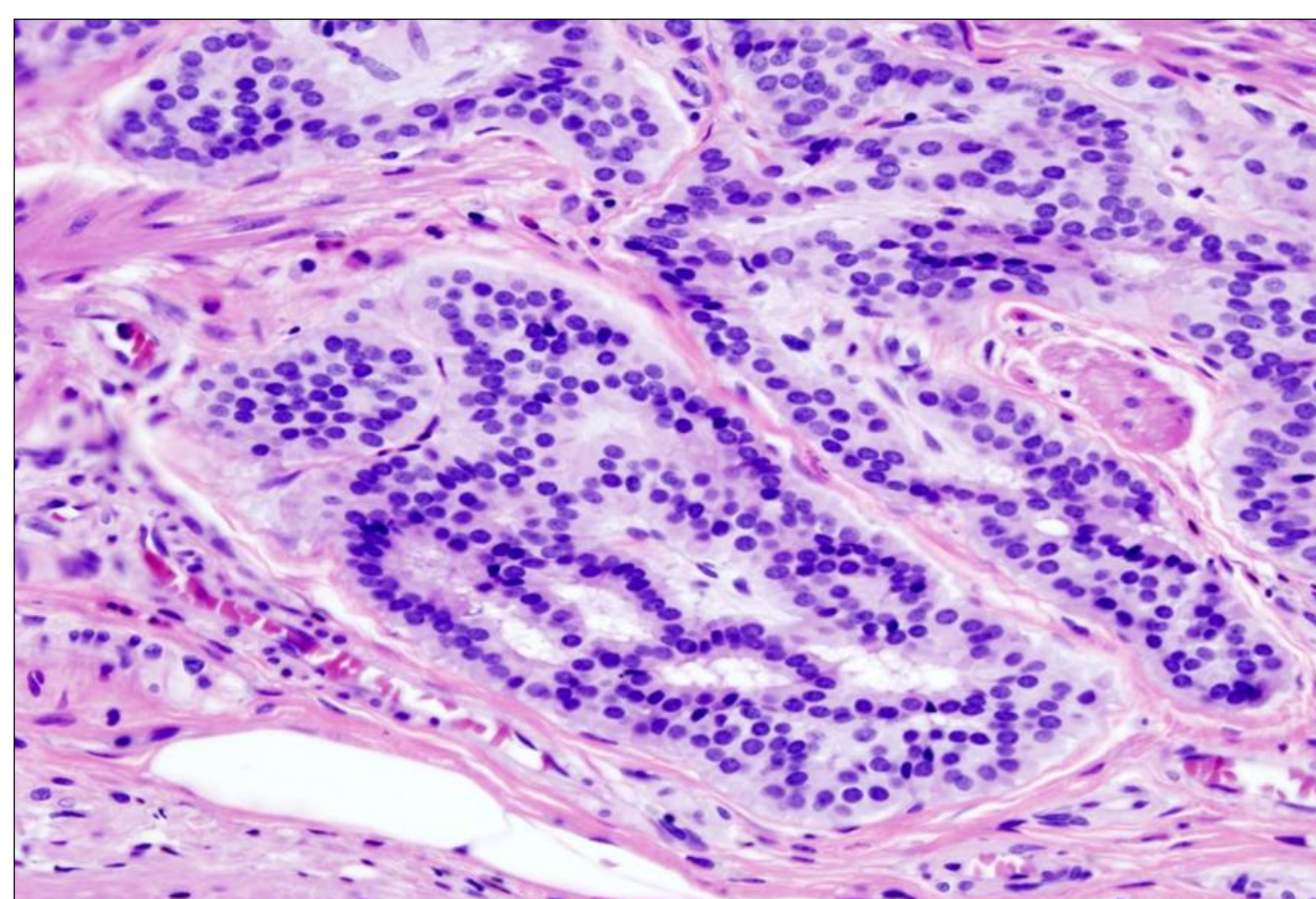
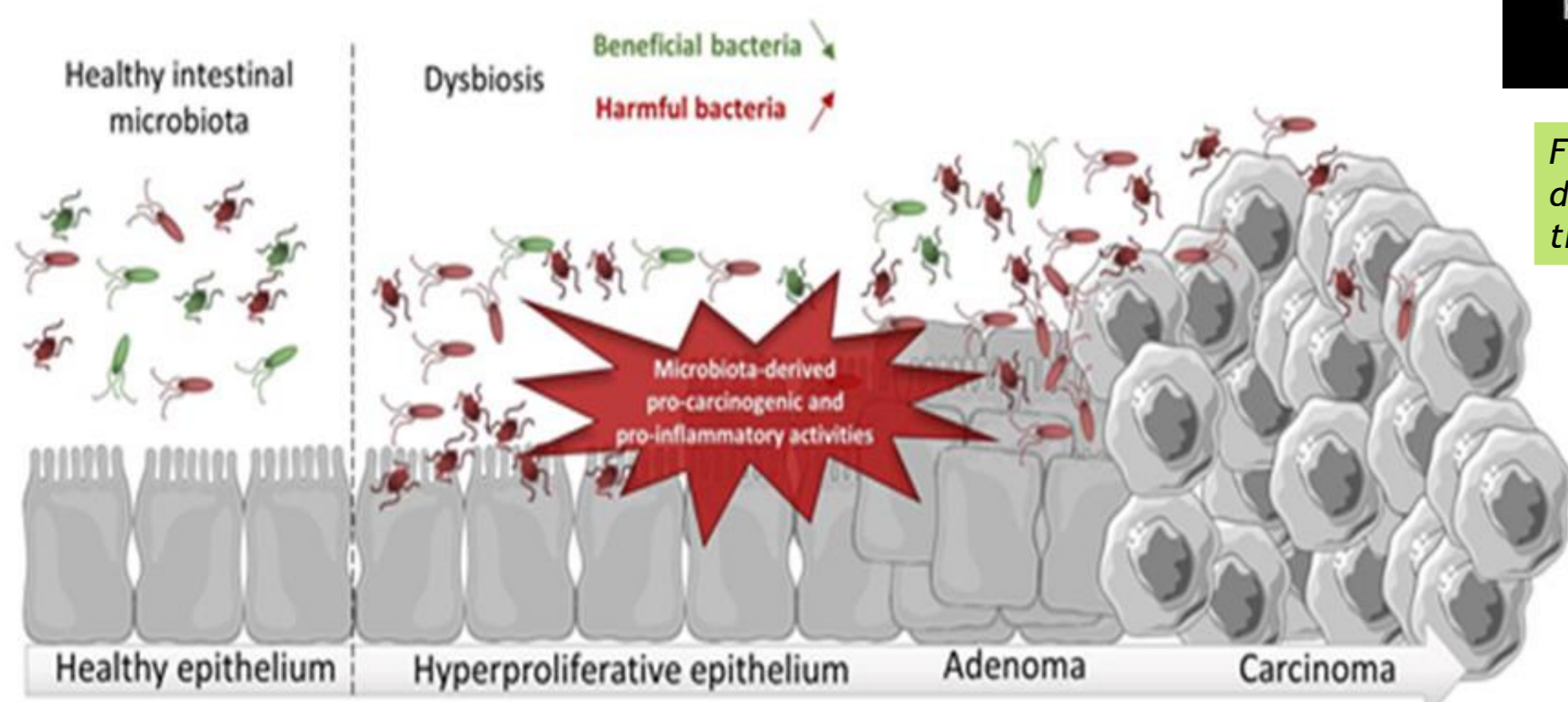


Figure 2: Histopathologic image of colonic carcinoid stained by hematoxylin and eosin. GNU.



Introduction

Cancer is a disease of multifactorial etiology in whose genesis different microorganisms could be involved. The intestinal microbiota is the set of microorganisms that make up the intestinal flora. **Colorectal cancer may be influenced by changes in the intestinal microbiota** that affect the mucosa and cause an immune response capable of producing inflammatory effects. Although there are still few studies in this regard, it is necessary to emphasize the need to expand the studies on this topic and to state the usefulness of the new technologies based on metagenomics.

Objectives

To study the current state of knowledge about the relationship between intestinal microbiota and colorectal cancer. To highlight the need to expand these studies taking advantage of new technologies based on metagenomics for the study of intestinal microbiota.

Material and methods

A review of 75 journal articles in different multidisciplinary databases (Scopus, Pubmed, Medline ...) was carried out using the following keywords: "Intestinal microbiota", "Gut microbiota", "Colorectal cancer", "Intestinal microbiota and colorectal cancer" "Metagenomic and microbiota".

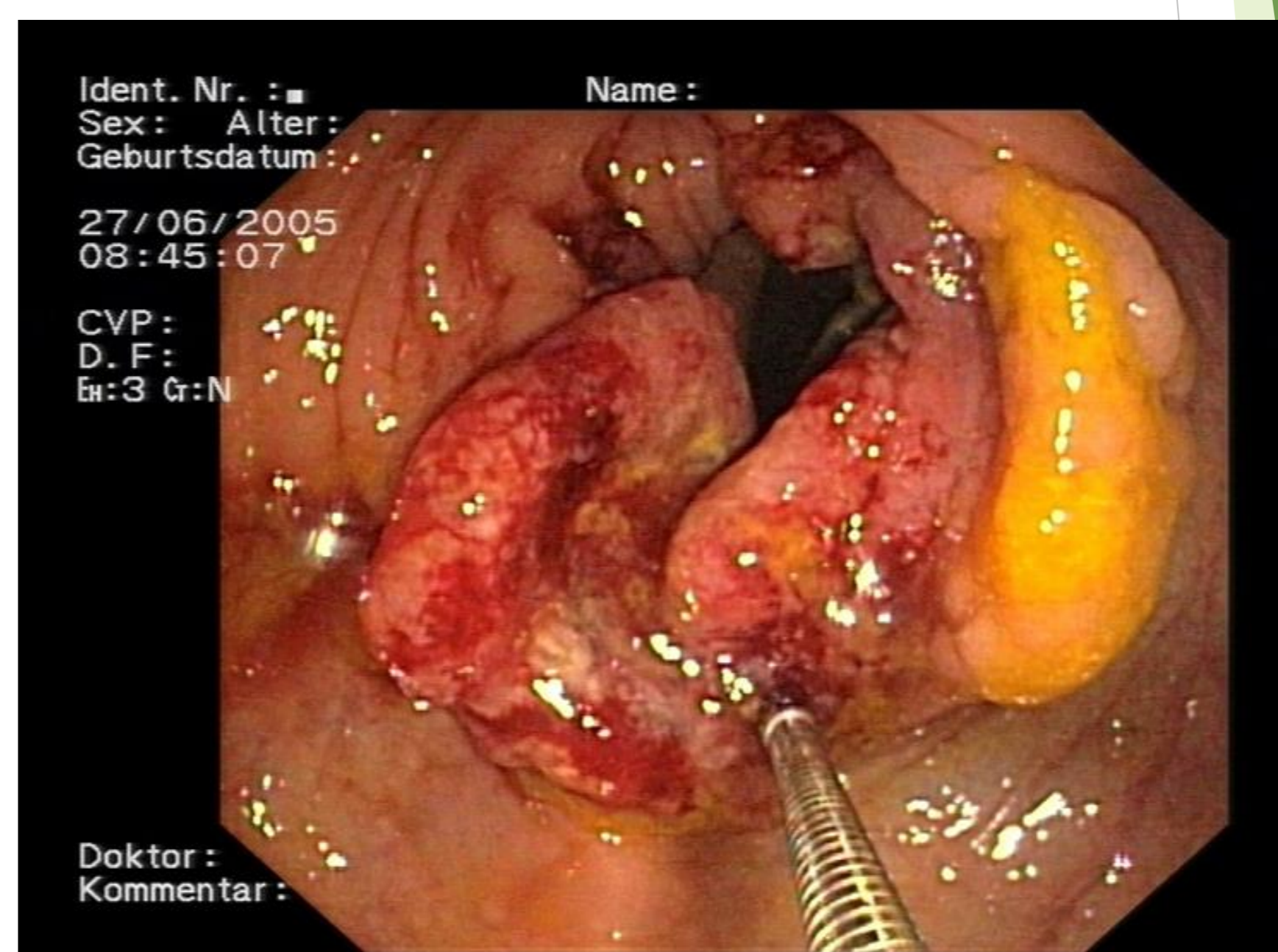


Figure 3: Photograph of a carcinoma of the ascending colon during a colonoscopy. A biopsy is taken with the instrument at the lower edge of the picture. Doctor Silke.

Figure 4: Colorectal cancer progression. Source: Microbiota, Inflammation and Colorectal Cancer, Int. J. Mol. Sci. 2017, 18(6), 1310; doi:10.3390/ijms18061310.

Results and Conclusions

There is evidence that the human microbiota can affect the risk of developing cancer, as well as the response to treatment during the disease. Inflammation as an immunological response to the presence of bacteria that promote the development of cancer is the most accepted mechanism to explain the microbiome-cancer relationship. The fact that effectiveness of chemotherapy treatments depends on the presence of certain bacteria can be based on the immune response that produces inflammation in the presence of some microorganisms. Inflammatory bowel disease is caused by a complex interrelation between genetic, environmental and intestinal microbes. New metagenomic techniques have been essential in the study of intestinal microbiota and cancer. It would be interesting to conduct intestinal microbiota studies in people with predisposition to colon cancer, who have not yet developed it, and in people with colon cancer at different stages to check if a stool analysis can be predictive of the patient's condition. It is necessary to carry out studies that indicate if a treatment with prebiotics and probiotics is able to help fight some pathologies.