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# Benign Tumors of the Liver



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Luca Aldrighetti • Francesco Cetta  
Gianfranco Ferla  
Editors

# Benign Tumors of the Liver

Forewords by Gennaro Nuzzo and Antonio Daniele Pinna

In collaboration with Francesca Ratti

 Springer

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ISBN 978-3-319-12984-6

ISBN 978-3-319-12985-3 (eBook)

DOI 10.1007/978-3-319-12985-3

Library of Congress Control Number: 2015934364

Springer Cham Heidelberg New York Dordrecht London  
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Printed on acid-free paper

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## Foreword I

It is a great pleasure for me to introduce the book *Benign Tumors of the Liver*.

Luca Aldrighetti, Francesco Cetta, and Gianfranco Ferla are surgeons with a dedicated commitment to hepatobiliary surgery and also valued friends, so I wish to thank them for the invitation to write this foreword. They deserve praise both for stimulating interest in the role of liver surgery, and especially minimally invasive techniques, in patients with benign liver tumors and for having decided to address this topic despite being well aware of all the associated difficulties.

The topic was a good choice because the extensive use of abdominal ultrasound has led to incidental detection of an increasing number of focal liver lesions that, in the absence of chronic liver disease and previous cancer, are almost always benign. Nevertheless, for patients such findings mark the beginning of an “odyssey”, on which they undergo an infinite number of tests, often unnecessary and expensive, before a definitive diagnosis is obtained. The optimal management of benign tumors of the liver thus remains an open issue, and Drs. Aldrighetti, Cetta, and Ferla have called upon the best Italian and foreign specialists to consider each aspect.

This book provides a wealth of up-to-date information that will enable every physician to provide patients with safe and appropriate care whenever a focal lesion is discovered. It will enable readers:

1. To understand the nature of benign tumors of the liver. Some of these tumors (such as liver adenoma and biliary cystadenoma) have indeed been extensively investigated in recent years thanks to progress in molecular biology, genetics, and histochemistry, and this has proved valuable in deepening understanding of disease characteristics and assisting in choice of therapy.
2. To obtain a correct diagnosis based on the clinical, biologic, radiologic, and pathologic features of each tumor. In particular, current imaging techniques allow very accurate diagnostic definition of benign tumors in most cases, thus reducing the need for a biopsy and avoiding unnecessary interventions. The collaboration between radiologists and surgeons is therefore important, and of course this synergy is even more fruitful if both are especially dedicated to these pathologies.

3. To correctly identify the need for surgical treatment of these tumors, which is rarely required. Indeed, many studies have demonstrated the low risk of development of malignancies and the low incidence of complications such as hemorrhage in the majority of benign tumors. The need for surgical treatment should be re-evaluated when changes in terms of lesion volume and number are registered, taking into account their topography within the liver and potential technical difficulties related to their removal.
4. To define the steadily increasing role of new techniques in interventional radiology and minimally invasive surgery (laparoscopic and robotic). Today the initial fear that the lower invasiveness of these techniques could lead to a broadening of surgical indications has disappeared, especially thanks to the guidance and control provided by scientific societies and national registries, in which Luca Aldrighetti has himself played a fundamental role.

Before closing I wish to congratulate the three editors: Francesco and Gianfranco, who are of similar age to me, lived through the era of discussions on gallstones and odditis and I now find them involved, with unflagging enthusiasm, in a topic that would have seemed very distant from us in that period. Luca, far younger than myself, has devoted much attention to the laparoscopic technique, “accurate” in all gestures and resembling the art of open surgery; furthermore, he has displayed an all-round interest in scientific topics relating to liver surgery and drawn attention to lesser-known aspects of various diseases.

My hope is that doctors who are faced with an incidental focal liver lesion will be able to turn to this book as a reliable guide that will aid them in reassuring patients and in advising them appropriately while acknowledging the duty to refer complex cases to those centers where all the skills required to correctly deal with them are available.

Rome, Italy

Gennaro Nuzzo, MD, MH AFC

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## Foreword II

Benign tumors of the liver are quite frequent lesions affecting approximately 20 % of the population, and their diagnosis has been increasing in frequency lately, owing to the routine use of contrast-enhanced abdominal ultrasound.

To differentiate diagnosis between the several benign and malignant hepatic lesions is a real challenge for radiologists. This difficulty has recently become easier to overcome, by virtue of the improvement in diagnostic tools, in particular to the worldwide availability of magnetic resonance, now considered the gold standard technique for a correct identification of any hepatic lesion.

The need for a precise diagnosis is the key point for the subsequent treatment. Though surgical resection remains the treatment of choice for malignant nodules and some of the benign lesions, most of the latter, such as small haemangiomas, focal nodular hyperplasia, and asymptomatic simple cysts, do not require any treatment. However, data from ELTR and UNOS show that in the last 20 years about 1 % of all liver transplantations in the world have been performed for benign liver tumors. Therefore, these patients should be managed in specialized centres, and a few selected cases may require aggressive surgical strategy.

The development of laparoscopic and robotic surgery has found an interesting application in this field. Although these technologies should not extend surgical indication in any way, benign liver tumors requiring surgery are optimal indications for a mini-invasive approach.

In my opinion, Aldrighetti, Cetta and Ferla have done an excellent job in this book in focusing on all types of benign liver tumors; they have endeavored to summarize the epidemiology and the molecular biology aspects, explained how to reach a precise diagnosis among these different entities, illustrated the available surgical techniques and even the alternative treatments by percutaneous approaches.

This handy and complete volume, covering all the aspects of benign liver tumors, is a state-of-the-art review not to be missed by all professionals and physicians involved in this specific field.

Bologna, Italy

Antonio Daniele Pinna, MD





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## Preface

When I was first asked to choose a topic for a book regarding liver surgery, I realized that one of the less systematically investigated areas of liver pathology is benign tumors. This is despite the fact that up to two-thirds of patients seen at the outpatient clinic have benign lesions and well-defined multidisciplinary management is still lacking.

In editing this book, I wanted to provide an instrument that would be of practical value not only for hepatobiliary specialists but also for surgeons without a specific commitment to liver surgery who are frequently asked for an opinion regarding surgical indications and follow-up of focal hepatic lesions and for general practitioners, who need to correctly refer the patient.

Diagnosis of benign tumors of the liver is now experiencing exponential growth, mainly owing to the diffusion of more accurate imaging techniques, the role of which is precisely described, providing guidance on differential diagnosis. The full range of benign liver tumors and conditions is then systematically reviewed and surgical indications are accurately analyzed with a view to assisting in the avoidance of useless interventions. Transplantation, laparoscopic resection, and robotic surgical techniques are described and illustrated, emphasizing the optimization of intra- and post-operative management in order to avoid potential complications and degeneration.

I asked many well-known and esteemed experts to contribute as authors of this book on the basis of their outstanding knowledge in the field, and I think that the quality of the end product bears testimony to all their efforts. I therefore firstly wish to express my gratitude to the authors, and then to compliment them on the excellent work that they have done.

I would also like to thank the other editors, Prof. Ferla and Prof. Cetta, for their helpfulness and remarkable dedication in the whole field of liver surgery and for their huge enthusiasm in book supervision.

Finally, it is impossible to forget to acknowledge the contribution of Prof. Capussotti, who is surely the pioneer of scientific and technical education of hepatobiliary surgeons in Italy and who represents a model of integrity and accuracy for present and future generations.

Milan, Italy

Luca Aldrighetti



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