Preface

Speaking on the topic of the sick lobe theory on many occasions, I always watch the reaction of the audience. A new theory awakes three types of reaction: a (very) small minority will accept it as being new and revolutionary; the skeptics will argue against it and will do everything to prove that it is incorrect. But the vast majority will tell you that the theory is correct but not a new one, they have been aware of it for decades.

And the majority is always right. "The theory of the sick lobe and the theory of biological timing are new concepts but have their roots in previous observations and studies." But "The theory of the sick lobe and the theory of biological timing connect the process of carcinogenesis to an existing and well defined anatomic structure, a breast lobe, and provide a possible explanation for the progressive character and morphological heterogeneity of breast carcinoma. These theories are more than a description of morphological patterns. They put these patterns into a unifying concept with genetic, developmental, and morphological perspectives of understanding breast carcinoma as a process that develops over time under endogenous and exogenous influences, not like a photo, but like a life-long movie" (Tot, Chap. 1). "The 'sick lobe' hypothesis asks questions about the development of breast cancer in time and space, and observes that concentrating on events in a few cubic millimetres of tissue is not enough" (Going, Chap. 2). And the originality of the concept can be easily proved with a simple PubMed search.

I presented the sick lobe theory for the first time in Winnipeg Canada, on The First Workshop on Alternatives to Mammography 2004. The body of evidence, pro and contra, generated during the last years will be presented in this book in ten chapters on different subjects. Epidemiological evidence supports the facts that "…the genetic mutations or epigenetic abnormalities involved in breast cancer development are more likely to be perpetuated by cells undergoing continuous branching and ramification while the lobe is being formed, rather than originating within the terminal ductal-lobular units, the majority of which are not developed before birth" (Xue and Michels, Chap. 3). Genetic analysis aiming at "...topographical mapping revealed that the genetic changes were clustered in a segmental distribution in some of the breast samples. The study provided further evidence that a field of genetic instability can exist around a tumour and that this size was greater than one terminal duct-lobular unit" (Smart et al., Chap. 4).

Modern radiology, especially in multimodality approach, gives evidence for the complex and variable morphology of breast carcinoma which will be richly illustrated in this book. "Detecting breast cancer at an earlier phase in its development and at a smaller tumor size is, however, no guarantee that the disease will be localized to a small, confined volume in every case. In fact, multifocal and/or diffuse breast

cancers comprise the majority of breast cancers in every size range" (Tabar et al., Chap. 7). Morphological evidence exists that the components of the cancer and precancerous changes occupy a lobe-like space in the breast and "a more widespread use of large sections in routine pathology will give more accurate knowledge on extent and growth patterns of breast in situ neoplasms" (Foschini and Eusebi, Chap. 6). Ductal endoscopy also showed that "Whether unifocal or multifocal, breast cancers seem to arise within only a single ductal tree" (Dooley, Chap. 9), supporting the morphological data. A special ultrasound approach, ductal echography, provides further evidence for the lobar nature of breast carcinoma, not only scientific but based on everyday diagnostic routine, motivating Dr Dominique Amy to state: "It seems to us that the 'sick lobe theory' …reflects the reality we daily observe 'in vivo'" (Amy, Chap. 8).

These theories have practical diagnostic and therapeutic implications. "The century old magic bullet approach to cancer has not served us well. It became part of the hegemony of biochemistry and later molecular biology, genomics and a massive pharmaceuticals industry with an attitude that there is a drug for every malady. In parallel, over the past century, x-ray and other forms of imaging developed and improved. These are now ready to overtake magic bullets precisely because they are nonspecific, i.e., potentially capable of detecting all tumors" (Gordon, Chap. 10). In addition to radiological imaging, "basic knowledge of the ductal/lobar systems intraductal approach to breast cancer would appear to be essential if the treatment and prevention of breast cancer is to evolve and to be applied in a more logical and less invasive way" (Love and Mills, Chap. 5). On the other hand, data also "suggest that sufficient tissue must be removed at surgery to avoid local recurrence and raises questions about whether such alterations could account for some cases of local recurrence after apparent 'complete excision' of the tumor" (Smart et al., Chap. 4).

Speaking about reactions of the audience, a leading breast surgeon told me after one of my presentations that there is no such thing as correct theory, but some of the theories may be useful. I hope that this book will be useful and stimulate the readers to rethink the established views and to develop new and more efficient approaches in diagnosing and treating breast carcinoma.

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