# SURGICAL DIAGNOSIS OF TUMORS

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Surgical diagnosis of tumors by A. Luecke



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# THE SURGICAL DIAGNOSIS OF TUMORS.

GENTLEMEN, there is no doubt, I believe, that you are accustomed to rank those pathological formations commonly called tumors in a wholly different order among the pathological phenomena in the body from that which was assigned to them by the generation of students to which I belonged. Much labor, and abstraction from established prejudice, have been required to bring us to the position which we now occupy in regard to the tumors. Although we must confess, that while in this branch of pathology, much is still left for investigation, and the views of students are by no means unanimous, still the study of tumors has, if I may say so, certainly advanced out of the stormy period. Writing upon this subject — which was at one time enormous, and reflected the contradiction of opinions, and the competition in discovery and exhaustive investigations — has given place to quiet work at this chapter; and we have reached a resting-place, as it were, on

the height we have to climb, upon which we can draw breath, and look back over what we have already won.

Opinions concerning the pathology, and especially concerning the genesis, of tumors, must be various. There is in pathology as yet no finished chapter. We are everywhere in the midst, or rather, often at the commencement, of our labor. But all that has been accomplished in the way of pathological anatomy and clinical observation has already led to very tangible results in practical treatment; and in my opinion we have made most important advances in the *certainty of diagnosis of tumors.*

It would be difficult for you to-day to form an idea of the uncertainty with which the examination of a tumor was formerly undertaken. This was especially due to the fact that it was the universal opinion that we here had to do with something wholly strange and peculiar, for which our ordinary methods of diagnosis were insufficient. Hence the most general diagnosis was satisfactory. And now, wherever ideas of pathological anatomy are not incorporated in a physician's flesh and blood, you still hear the simple diagnosis made of "a tumor." Pathological anatomy has, then, been mainly instrumental in clearing up our views, and in bringing the tumors within the reach of clinical diagnosis; for we have attacked the new growths with the same diagnostic methods and means used in other

forms of disease; and the services which *Virchow* has rendered in this direction cannot be too highly estimated.

I confess to you, that, when I first had to step forward as a clinical teacher, I was not over-pleased at facing the tumors, although I knew that I had duly worked out their anatomical relations. A saying of *C. O. Weber*, that an error in the diagnosis of a tumor was with him a rarity, seemed to me to contain too much self-confidence. Only after a long personal clinical experience can I say that *Weber* was right. It is possible, in all but a constantly diminishing minority of cases, to determine the histological character of tumors before their removal or anatomical examination. And we must note, that while on the one side the anatomical investigation of tumors was the indispensable condition to their proper understanding, the other factor, clinical observation, is not to be under-estimated. Clinicians, provided with the weapons of anatomy, have long been able to observe tumors through their whole course with unprejudiced eyes: they must now, therefore, be in a position to bring the anatomical in unison with the clinical observations, and so, out of the clinical facts, be able to draw an inference as to the structure of a new growth.

The clinician has a decided advantage over the anatomist in the recognition of the characteristics of a

tumor; for he has the living material itself before him, in which many properties are to be observed which are absent after death, or removal of the part, and these, properly interpreted, form most valuable diagnostic signs.

We must not, however, seize upon the clinical diagnosis superficially, and presume to found a classification of tumors upon purely clinical characteristics, as has mistakenly been done from time to time. A proper clinical classification must always coincide with the anatomical; for, in the end, all clinical knowledge rests upon anatomy and physiology. I believe, then, that we can gradually escape more and more from the purely clinical nomenclature, and in time give up certain current names, such as cancer, sarcoma, &c.: for, in Germany at least, the clinical division of the new growths has generally given place to the purely anatomical system; which movement I have, I believe, helped not inconsiderably.

Before we take up our subject proper, it is doubtless of importance for its right understanding, to come to an agreement concerning certain fundamental ideas and principles. And first we must properly define the *idea of tumor.*

We are, as yet, not far enough advanced to be in the position to characterize the group of diseases which we call tumors, in accordance with etiological considera-

tions, and so to be able to place them, perhaps, in a like line with the products of inflammation.

The true etiology of the new growths rests as yet on a feeble foundation: therefore, in fixing the limits of this group of diseases, we must keep to other considerations, by the application of which we are able definitely to separate the tumors from other new formations.

The idea of *new growth* we must hold fast; and with this view, in my exposition of the meaning of *tumor*, I have excluded a large group usually reckoned among them, namely, the cysts. This I have done, because there are no cysts which are not to be referred back to other pathological processes, — either to retention of secretion (which may be due to the closure of ducts by inflammation), or to extravasation or exudation. If we exclude the cysts, I believe that the definition which I have formerly given is the most applicable; namely, *Increase in size through the new growth of tissue by which no physiological end will be gained.*

In accordance, then, with what I have just said, I classify the tumors as follows: —

I. The Cysts.

II. The Real New Growths.

A. *New growths in the type of connective tissue.*

1. Type of normal connective tissue.

a. Fibroma (and Myoma).

*b.* Lipoma.
*c.* Chondroma.
*d.* Osteoma.

2. Type of embryonic connective tissue.
*a.* Myxoma.
*b.* Sarcoma.

B. *New growths in the type of epithelial tissue.*
*a.* Carcinoma.
Appendix: Melanoma.

C. *New growths in the type of more highly developed tissues.*
*a.* Papilloma.
*b.* Angioma.
*c.* Neuroma.
*d.* Adenoma.

I have good reason, looking from the stand-point of the surgical clinician, to be well pleased with this classification; for the first and main question in every case is, In what tissue did the tumor originate? That is conclusive for its pathological character, and consequently for the diagnosis: and, through the above arrangement, we are directed, for our understanding of the real new growths, to that very thing, — to give our attention to the parent tissue of a neoplasm. And, if we have recognized from whence a tumor has started, then we have made the better half of the diagnosis.

In advancing this view I have really acknowledged to you that I am a supporter of the theory of *Thiersch* and *Waldeyer*, — of the blastodermic theory, if you will.

I am a believer in this theory as well on clinical as on histological and embryological grounds. Although I must confess that the embryological as well as the histological side of the blastodermic theory is much disputed, still I can assert that clinical experience speaks greatly in its favor, and I must especially add, that this theory has greatly facilitated most important advances in certainty of diagnosis.

I to-day hold firmly to the principle, that tumors of the connective tissue series, remain always within the type of that tissue, and that epithelial tumors can only originate from epithelial cells. Further, in the majority of cases, the new growths remain within the type of their parent tissue, even in the details of their structure; so that from cartilage arise cartilaginous tumors, and fatty tumors from fat cells. In the epithelial class they retain their character even more closely; thus, cylindrical epithelium gives rise to cylinder-celled carcinoma, of which the secondary nodules usually preserve the same type; and glandular epithelium always reproduces itself in a carcinoma in the same form, and, even in the secondary tumors, often has the same arrangement as in the original gland. Pigment-cells, whether connective tissue or epithelial, have the peculiar property of always producing pigment, — a power which even the immediately contiguous cells do not possess; thus, if they form neoplasms, these consist of pigmented cells, in short, are melanotic tumors.