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Research Article

Can Stem Cell Research Benefit from William Stokes' 1842 Review of 15 Lung Cancers Which Included One Case with Local Extensive Replacement but Without Bodily Deposits?

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Abstract

It is common knowledge that lung cancer (i) is supremely situated with reference to its draining easily into the pulmonary vein, and (ii) gains easy access to the heart and aorta. Moreover, quantitation has shown that millions of these cells circulate in the system. Therefore, both easy entrance and ready colonization should go together. However, an important factor creeps in, i.e., anomaly, which means the occurrence of the unexpected. Elsewhere, I demarcated 10 anomalies. One of them is that of expansive lung cancer, named as "bulky." Accordingly, it is the purpose of this paper to exemplify historical cases in my collection, and to hypothesize that bulky lung cancers constitute a distinct group that is worthyof attentionin the field of stem cell research and therapy.

Keywords: Anomaly; Bulky; Lung Cancer; Research; Stokes; Stem Cells

Introduction

Lung cancer normally gains ready access into the pulmonary vein [1]. On this account, it enters the left atrium and subsequently the cardiac chambers as well as the aorta. Moreover, it has been calculated that millions of these cells circulate in the blood stream [2].Little wonder that their fate necessarily required research [3]. However, one of the surprises is that a large tumor, defined precisely as one over 10 cm across [4], tends not to be associated with extrathoracic metastases [5,6]. Is this a new idea? Or one that had been described in the 19th Century? It was the famous eponymous William Stokes [7]who provided the required data.

Stokes'Historical Citation

A man, aged 43, was admitted to Guy's Hospital, laboring under cough with associated hemorrhage. Extreme dyspnea led to death. The dissection was as follows:

The right pleura was universally and strongly adherent; the entire of right lung, except a small portion at its apex, was converted into a fungoid mass, which was generally white and pallaceous, except near the center, where it was of a pink color, and reduced to a diffluent pulp; and opposite the scapula, near the surface, where there was an irregularly shaped cavity, containing little or no fluid. In the bronchial tubes was much viscid secretion, and the mucous membrane was slightly congested. The left pleura was partially adherent from old disease; but the lung and the bronchial tubes on this side were healthy. Several bronchial glands were much enlarged, but did not appear to have assumed any of the characters of the malignant disease. The right auricle of the heart appeared considerably flattened, and the entire organ was pushed considerably to the left side, by the pulmonary tumour. There was nothing remarkable in the abdomen, except, that at the head of the pancreas was an enlarged gland, about the size of an orange, which contained a straw-colored fluid.

Discussion

Let us make use of the expansive review of the eponymous giant, William Stokes. By 1842 [7],he was the Regius Professor of Physic in the University of Dublin and Secretary to the Pathological Society of Dublin. He was quite expansive in his survey of lung cancer literature. In particular, listen to him: "I propose, in the present paper, to examine into the actual state of our knowledge

of the history of thoracic cancer, and to examine how far its diagnosis, direct or indirect, can be considered to be established." The problems encountered were summarized thus:

I will now give the general conclusions to which we have arrived, marking with an asterisk those which I already stated in my work on the diseases of the chest, and with two asterisks those which have been modified.

*I. That the facility of diagnosis mainly depends on the anatomical disposition of the disease.

**II. That we may divide the cases with a view to diagnosis into those in which isolated tubercles exist, with the intervening tissues healthy; those in which simple degeneration occurs without ulceration, and with ulceration; and those in which a tumour of the mediastinum exists, causing compression.

III. That the diagnosis in the first case is difficult, from our being seldom able to avail ourselves of the signs of irritation and ulceration, so important in ordinary tubercles, and the fact of the equable distribution of the disease preventing comparison.

IV. That in some cases of isolated cancerous masses, the diagnosis may be founded on the same general principles as that of acute phthisis.

**V. That in simple cancerous degenerations of the lung, the principal physical signs are the gradual diminution of the vascular murmur, without rale; its ultimate extinction; and the signs of perfect solidification.

VI. That the evidences of perfect solidification are better found in this disease than in any other pulmonary affection.

VII. That this form of the disease may exist, simply, or in combination with empyema, and may be secondary to cancerous tumors of the mediastinum.

VIII. That the sides may be symmetrical in this affection, and that either dilatation or contraction of the side may occur.

IX. That the mediastinum may be displaced, even though the side be contracted.

X. That under these circumstances we may have the signs of perfect solidification, accompanied by imperfect pectoriloquism, and increased vibration to the hand.

**XI. That the mediastinum may be displaced and the liver depressed without protrusion of the intercostals spaces.

XII. That the heart may be compressed and dislocated in this form of disease.-Hughes, Syms, Houston.

XIII. That the flattening of the upper part of the chest may occur from degeneration of the upper lobe.-Hughes.

XIV. That the absence of signs of ulceration is very characteristic to this disease.

XV. That we have observed these signs in but a single case, and that the phenomena, though they might be produced by other diseases causing the same physical conditions of the lung, have never before been met with.

Indeed, he referred extensively to the works of Laennec, Morgagni, Van Sweiten and Bayle. Altogether, he collected 15 cases. Perhaps, it is desirable to quote fully the contrast provided by thenumerous colonies detected in a woman aged 50 years who had also died at Guy's Hospital as follows:

Dissection

The left pleura was slightly adherent; the left lung was crepitant throughout, and partially emphysematous; the right pleura was universally firmly adherent, and superiorly altered in texture by a white, flaky, malignant deposit; the entire upper part of the right lung was converted into a mass of medullary fungus, the cut surface of which exhibited a dead white, cheesy substance, intersected with bands of cellular tissue. By slight pressure a creamy fluid exuded, together with portions of soft, brain-like matter, from cells, varying in size from a pin's head to a marble. The middle lobe contained some portions of the malignant growth, appearing like elongations or processes of the diseased mass above them, from being clearly connected with and traceable into it, and separated from each other by the intervention of healthy, or simply compressed lung.

The inferior lobe contained a few small detached masses of fungoid matter, and was posteriorly firm, dark-coloured, and lacerable, probably from gravitation. In the branch of the right pulmonary artery, going to the upper lobe, there was a small pedunculated medullary tubercle, and another on its external surface. The heart and pericardium were healthy.

Abdomen

The liver had the nutmeg character, and presented one patch of malignant disease. Both kidneys and renal capsules presented small masses of medullary matter, and near the os uteri were found three pea-like scirrhous tubercles. The gland in the axilla was clearly affected with the same disease.

Interestingly, words like tubercle, medullary matter, scirrhous tubercles, medullary tubercle, malignant disease, and fungoid matter are strewn all over the old scripts. However, I have shown elsewhere [8] that they constituted, as the saying goes, much ado about nothing! The title was fully as follows:"Some nineteenth century ideas on links between tuberculous and cancerous diseases of the lung." Be that as it may, I am persuaded that much of the descriptive pathology of cancer was historically sound [9]!

Coming back to the single depicted bulky cancer, it constituted 6.7% of the entire series of Stokes. Curiously, my Glasgow series of 60 cases revealed 4 examples, i.e., 6.7%[4]! In all probability, this unique class is in keeping with the visionary views of the medical masters of yester years [10]. In sum, in order to hypothesize, now that Stem Cell research is growing [11-13],let this verifiable field be selected for replicative researches whose breakthroughs may lead to thattarget therapy which could conduce to cancer cure.

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