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Adrenal Selectivity in Lung Cancer Metastases: Historical Highlights and Present Prospects

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Abstract- Despite the scarcity of autopsy case reports in the 19th century 3 of them are abridged in order to demonstrate that none was recognized as a primary lung cancer despite the striking presence of tumor in the lung. This is explicable on the basis of the striking phenomenon of selectivity of one or both adrenal glands during colonization. Therefore, it is concluded that recognizing such peculiar cases of adrenal selectivity among present-day patients will facilitate the treatment of this fell disease. In fact, recent positive papers on both surgery and radiotherapy are illustrative of this hopeful outlook.

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I. INTRODUCTION

Elsewhere [1], the difficulties experienced generally during the diagnosis of lung cancer in the 19th century were presented. Therefore, the present report concerns a distinct group of as many as 3 cases [2-4] which were identifiable despite the peculiarity of the adrenal colonization. Moreover, it is shown that their recognition can stimulate interest in modern practice including treatment.

II. HISTORICAL MISDIAGNOSIS CASES

The titles are quoted fully. However, the lung involvement is *italicized for emphasis* in the abridged reports which are as follows:

a) "*Primary cancer of the suprarenal capsule*" [2].

Right lung solid throughout. The right bronchial glands were enlarged and mottled white and grey. A large tumor was found behind the liver, five inches in depth, which proved to be the suprarenal capsule. The kidney was healthy as was the left suprarenal capsule.

b) "*New growths in the mediastinum*" [3].

At the root of the left lung the new growth had invaded the main bronchus for half an inch, and actually formed its wall. At this point it also penetrated the lung substance. The bronchial glands were infiltrated. Below the diaphragm the new growth was only to be found in the suprarenal bodies, both of which were infiltrated and enlarged.

c) "*Medullary sarcoma of both suprarenal bodies; horseshoe kidney*" [4].

Both suprarenal bodies are much enlarged, especially in thickness, presenting a rounded outline. On section they were seen to be infiltrated throughout by a soft medullary growth, by which all their proper structural features had been obliterated. The growth was associated with a mediastinal tumour of the same character, which had invaded the left lung from its root.

Clearly, the above three cases were each misdiagnosed because the old masters did not recognize their status as secondary manifestations. Accordingly, in modern times, the emphasis should rightly be laid on the hopeful treatment of lung cancers spreading peculiarly to the adrenals.

III. DISCUSSION

In my review of organ selectivity classes in cancer metastases, 12 classes were discernible [5]. Moreover, the adrenal gland featured in as many as 11 of the classes. This strengthens Bourne's suggestion [6], viz, that the anatomical position of the adrenal glands is probably not fortuitous but related to some evolutionary factor. Hence, I am persuaded that the existence of this inherent factor is supported by my researches on the significant role played by lymphangiogenesis in adrenal selectivity [7,8].

In this context, Internet search was undertaken as regards taking advantage of this unique topography. Firstly, there is the recent report thus: "surgical resection of isolated adrenal metastases from lung cancer appears to have a modest survival advantage over non operative therapy, and it occasionally results in long-term survival" [9]. Secondly, another group agreed that "surgical treatment might improve long-term survival" [10]. Next, in the field of radiotherapy, there are recent papers which convincingly demonstrated its palliative use in cases of symptomatic adrenal metastases [11,12].

IV. CONCLUSION

To promote such successes, there is need to include the upper abdomen so as to improve the detection of adrenal metastases during preoperative screening for metastases in lung cancer [13,14]. In sum, to facilitate current endeavors in the field of lung cancer treatment, extra attention should be paid to these two

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deceptively small upper abdominal organs. In other words, a cohort showing long-term survival can be identified. In sum, since adrenal glands could for long be the only extrathoracic sites of metastasis, this epidemiologically classifiable group of lung cancer patients should be carefully identified and followed up after treatment. In all probability, as Lam and Lo [15] concluded concerning lung cancer, "Long-term survival may be achieved in selected patients in whom an aggressive surgical approach may be adopted."

Conflict of interest

The author wishes to express that he has no conflict of interest.

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