

A Spanish thoracic surgeon visits China—reflections on the surgical treatment of lung cancer

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There's more than one way to skin a cat.—English proverb.

Introduction

No, I did not go to Shanghai, the city that has become the Mecca of thoracic surgery in these first decades of the 21st century. I went to two cities that can be considered remote, and that are not integrated into the typical tourist or professional routes: Shenyang and Suining. In Shenyang, Liaoning Province, I participated in the 2017 Liaoning International Symposium on Lung Cancer, and had the opportunity to visit the Liaoning Cancer Hospital and Institute (*Figure 1*). In Suining, Sichuan Province, I spent two weeks visiting the Thoracic Surgery Service of the Suining Central Hospital (*Figure 2*). This visit was an activity within the frame of the collaboration agreement between the Suining Central Hospital and Hospital Universitari Mútua Terrassa. These three weeks of full immersion in Chinese clinical practice facilitated the interaction with Chinese colleagues and helped me understand the medical system and practice in China. The comments that follow derive from what I saw there, and are meant to describe some of the differences between the Chinese and the Western ways of doing things that struck me.

Invasive clinical staging

In Shenyang and in Suining, I observed several lung resections by video-assisted thoracoscopic surgery skilfully and elegantly performed. I saw wedge resections for

ground glass opacities, segmentectomies for small tumours, lobectomies for larger ones, and even a uniportal right upper sleeve lobectomy. Many of these tumours were centrally located and a few were rather large. However, none of the central or large tumours had been staged invasively as the current guidelines of the American College of Chest Physicians (ACCP) and the European Society of Thoracic Surgeons (ESTS) recommend (1,2). These guidelines are the result of a thorough review of the literature and are based on the best available data. They represent the most solid recommendations for clinical practice that the thoracic oncology community around the world has ever had. The original (3) and the revised ESTS (2) guidelines on preoperative mediastinal nodal staging have been validated prospectively and retrospectively, with the resulting negative predictive values for mediastinal nodal disease of 0.94 and 0.95, respectively (4,5).

Diagnosing mediastinal nodal disease at clinical staging helps us in many ways. Firstly, it tells us that the prognosis of a lung cancer is worse than that indicated by the primary tumour alone. Secondly, mediastinal nodal disease is a contraindication for resection in many institutions, and then the patients are treated with concomitant chemo-radiation, if they are fit enough for this alternative radical treatment. Thirdly, the patients may be treated with induction therapy either chemotherapy alone or chemo-radiotherapy, with the intention to resect after induction if no progressive disease is evident during induction or if nodal downstaging has been proven at restaging. And fourthly, some lung cancers with nodal disease limited to a single mediastinal station

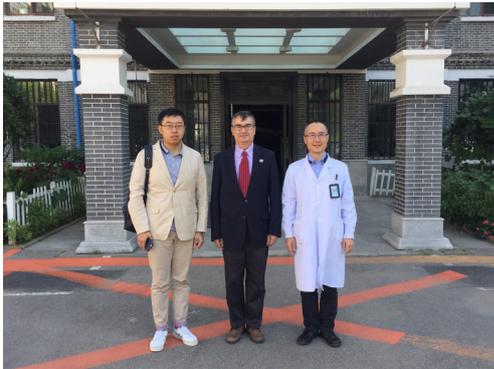


Figure 1 From left to right: Dr. Gebang Wang, resident in thoracic surgery who was my guide and interpreter during my stay in Shenyang; the author; and Dr. Hong-Xu Liu, Deputy Director and Chief of Thoracic Surgery of Liaoning Cancer Hospital and Institute.



Figure 2 From left to right: the author and Dr. Hai-Ning Zhou, Chief of Thoracic Surgery, Suining Central Hospital.

or zone may be resected upfront, because the prognosis of single station/zone N2 disease is similar to that of multiple station/zone N1 disease (6-8). In China, the indication for surgery or induction therapy is based on the findings of computed tomography and, in some cases, on those of positron emission tomography. ‘Tissue is the issue’ and ‘no meat, no treat’, that are so frequently heard in our meetings in Europe, make little sense in China, at least, in the visited institutions. The median positive predictive value of computed tomography is 58%. If we rely on computed tomography with no invasive staging, more than 40% of lung cancers will not be properly staged (1). Some patients will undergo resection without induction therapy and others will receive it unnecessarily. In the latter, if systematic nodal dissection does not reveal nodal disease, credit for presumed downstaging cannot be given to the induction therapy

because there was no tissue diagnosis before the start of treatment.

Systematic nodal dissection

Systematic nodal dissection is skilfully performed in every case, but after tumour resection, at the end of the operation. Systematic nodal dissection was defined in an international and multidisciplinary workshop that took place in London, United Kingdom, in 1996, and published the year after (9). It consists of two basic steps: the *en bloc* removal of the mediastinal lymph nodes and fat and, then, in a centrifugal manner, the removal of the hilar and the intrapulmonary nodes. It was recommended to perform it at the beginning of the operation, because the information derived from it may alter the resection plan. When I asked why systematic nodal dissection was performed at the end of the operation instead of at the beginning, the reply was that in the big institutions of Beijing and Shanghai the surgeons performed it at the end. That must be a good reason in China, and I admit that for most patients it does not really matter whether systematic nodal dissection is performed at the beginning or at the end of the operation. However, there are certain technical and strategic advantages in doing it at the beginning. Firstly, the mediastinal part of the dissection requires the opening of the mediastinal pleura around the lung pedicle, the opening of the upper mediastinal pleura and the section of the pulmonary ligament. These manoeuvres facilitate the dissection of the vessels and the bronchi, and may help in the subsequent parenchymal resection. Secondly, if mediastinal nodes are suspicious of being invaded, they can be sent for frozen section and, if positive, maybe the operation can be terminated depending on the extent of nodal disease and the fitness of the patient. For example, a pneumonectomy with N2 disease has very poor prognosis in most instances. Thirdly, if hilar or intrapulmonary nodes are found to be invaded at frozen section examination, the planned resection may be converted from a lobectomy to a bilobectomy or even to a pneumonectomy to achieve a complete resection (10), or the operation may be terminated if the patient cannot undergo the additional lung resection required because of the involved lymph nodes. However, these situations are not considered, and the resection is performed regardless of nodal status. Patients undergoing exploratory thoracotomies, with no tumour resection, are not generally informed to avoid, I was told, important

psychological distress.

Patient's autonomy

To complete a resection of little therapeutic value or to fail to inform the patients of an unsuccessful operation to please the patient's family, to give unrealistic hope or to avoid psychological damage to patients seems very important in the Chinese cultural setting. This practice is identical to what was done in Mediterranean countries, including Spain, half century ago. Like in China, family had a high specific weight in southern European countries, being so protective and paternalistic with their diseased members that it annulled the patient's will. However, over the past decades this has changed in our current practice, and nowadays most patients, if not all, know the seriousness of their diseases, are fully informed of the nature of their diseases and of the treatment details, and are consented not only because the law requires it, but because there is personal and social acceptance that the patient's freedom and autonomy have to be respected and preserved. In fact, autonomy, together with non-maleficence, beneficence and justice, is central to bioethics, at least as we understand it in the western world. Autonomy probably is the most important principle because it allows the exercise of self-determination and choice for patients (11). Freedom and autonomy go hand in hand, and freedom is one of the core socialist values that have been emphasized in the Congress of the Chinese Communist Party held in 2017. Hopefully, as these core values are implemented, patients' freedom will be recognized as an important part of Freedom as a general concept. Culture is deeply rooted in the collective mind of peoples and in the individual minds of persons, but it does not mean that culture is a static value. In fact, it is more valuable when it evolves according to the advances in the understanding of science, ethics, sociology, anthropology, politics and every aspect involving human life. Static cultures get out-dated.

But the patient wants

The above contrasts, paradoxically, with the fact that in many instances the doctor is under pressure to do what the patient (or the family) wants. Many of our discussions on how to manage certain lung cancers ended with '... but the patient wants'. Different and unrelated surgeons in both cities told me that the doctor-patient relationship is not very good in China, and that the doctor is not a respected professional as it usually is in the West. I was very

much surprised to hear that, and when I inquired further I was told that this originates in the Confucian tradition that values civil servants as the professionals on top of the ranking. This is a striking difference with the West, where civil servants and bureaucrats rather pass unnoticed, while physicians are held in high esteem and respect, although now, I have to admit, not so much as half century ago. In China, the degree of mistrust is high, to the point that the surgeon leaves the operating room, even before ending the operation, to show the removed specimen to the patient's relatives as evidence of what has been done. It is also true that on other occasions, the specimen is shown to explain how the operation has been done or to explain the possible prognosis. I have not seen this in Spain, but I have been told that some surgeons used to do it. However, the objective of showing the specimen to the relatives was merely informative and not to prove that the operation had actually been done.

I think it is in the hands of the Chinese doctors to revert this social attitude against them. The doctor has the knowledge, the skill and the authority to assess the patients and the conditions that afflict them, and to indicate a certain treatment. Of course, the patients may choose not to follow the doctor's recommendation. In some instances, when valid alternatives are available, the patients are certainly entitled to choose, but the patient should never be empowered to tell the doctors what to do. This situation arose in the discussion of patients with ground glass opacities that, at least by Western standards, had no indication of resection, but that were resected simply because the patient wanted to have it out.

Final comments

China has an old, rich, varied, amazing and fascinating culture. In three weeks I do not pretend to have understood it. I simply wanted to point out striking differences in the ways lung cancer is managed. Chinese medical institutions are willing to open up internationally and to cooperate with institutions worldwide. In order to do so, there must be some homogeneity in the way the international medical community does certain things. Perhaps, besides North American and European guidelines, we need guidelines with Chinese input, too, so that we can work together. Another fundamental aspect of surgical practice is the assessment of outcomes. This is a difficult task in China, where follow-up is rather poor because of the intrinsic characteristics of a vast country with a huge population, but it is not an unsolvable

problem. All patients and their relatives that I saw in China have cellular phones. Cellular phones already are used to monitor postoperative courses (12), for skill training (13) and to collect data (14). There is no reason why they cannot be used to follow the patients up. This would solve, at least in part, the problem of follow-up in China.

The benefits of the big number of thoracic surgery procedures performed in China every year and the difficulties in assessing outcomes have been adequately highlighted (15). For those interested in technique, China offers the best opportunity. On the other hand, Western professionals can provide advice on multidisciplinary treatment strategies based on data and suggestions for follow-up. Information means power and data are the gold of the 21st century. China generates an enormous amount of data that need to be properly registered to allow for their analysis. Data managers are indispensable professionals in today's China. Their inclusion into the multidisciplinary teams dealing with lung cancer patients is essential, because what the Chinese surgeons do differently from what we do in the West needs to be validated and justified by the outcomes. This is what I failed to see in my short stay in China. Many patients with N2 lung cancers are operated, but their survival rates are unknown because follow up is lacking. This needs to be addressed urgently or important data will be lost.

My stay in China was both personally and professionally rewarding. I recommend the experience to all those with open minds who want to see beyond their own professional settings. As our English colleagues say 'there's more than one way to skin a cat'; there is no one exclusive way to do things. A visit to China proves that this is true.

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Footnote

Conflicts of Interest: The author has no conflicts of interest to declare.

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