What is the contemporary role for surgery in the management of malignant pleural mesothelioma?

Malignant pleural mesothelioma (MPM) is a relatively locally invasive, asbestos-related cancer responsible for almost 40,000 deaths worldwide annually (1). In the US and many Western European countries, including the UK, its incidence is increasing in view of the time lag of 30–50 years after exposure to asbestos. In the Western world, mesothelioma incidence is expected to be reaching a peak around 2020 with subsequent gradual decline. However the continued use of asbestos in the developing world means that worldwide mesothelioma incidence could continue to increase well into the mid 21st Century. Thus MPM is likely to remain a significant issue globally for decades to come due to the on-going and unregulated use of asbestos in a number of industrialised and developing nations including China, India and Russia (2). The relevance of therapeutic discoveries in the current epidemic in Europe cannot, therefore, be underestimated.

Treatment options for MPM are currently limited. The standard-of-care is chemotherapy, using a cisplatin or carboplatin-pemetrexed, is supported by randomized evidence (3) but is effective in under 30% of patients. It may be used in combination with anti-angiogenic agents with increased survival (4). Other systemic agents are under evaluation. Radiotherapy has little role in local control and is largely used in a palliative setting.

Unfortunately, surgery is underutilised in radical multi-modality possibly due to the perception of its high morbidity and mortality with lack of long-term survival. Its role has therefore been limited to diagnosis and palliation of dyspnoea. New lung sparing radical procedures may change the application of surgery.

In this specially commissioned edition we address the many facets of the surgical management of MPM. We have engaged a diverse panel of experts who manage this condition on a day-to-day basis and who are therefore uniquely qualified to correlate the published literature with their clinical experience. The complementary articles address many of the controversies surrounding surgery in the multimodality management schedule.

Appropriate patient selection is a prerequisite for surgical practice in MPM and advances in imaging techniques and diagnostic methods are covered comprehensively by the groups from Glasgow and Oxford respectively. New advances in contrast enhanced MRI and earlier use of thoracoscopy by pulmonologists may allow surgical intervention at an earlier stage in the disease.

An appreciation of the impact of the new understanding the anatomical TNM stage of MPM is considered by Batirel from Turkey and by Opitz and Lauk from Zurich. The latter group from Zurich also considers the use of composite scores in the selection of those most likely to benefit from surgery. Richards and colleagues from the experienced Boston group explore new possible information which may be obtained from diagnostic material over and above simple histological type and anatomical extent. These include molecular biomarkers and immune-based targets

Surgical management of MPM is considered in detail in several articles. The controversial use of video assisted techniques to achieve symptom palliation is discussed by Coonar, particularly in the situation of the entrapped lung. Several subsequent expert papers detail the contrasting surgical approaches of extrapleural pneumonectomy and pleurectomy/decortication. Spaggiari and Hasegawa provide expert descriptions of the surgical techniques of these procedures which are rarely seen by many surgeons and are, therefore, frequently misunderstood. The controversial Toronto regime of induction radiotherapy and EPP is explained with clear thought by De Perrot together with the potential pitfalls. The importance of recognition, prevention and subsequent management of perisurgical complications is addressed also. The role of radical surgery within multimodality therapy is discussed by Sharkey who contrasts the role of induction versus adjuvant chemotherapy and offers some evidence based decisions.

Future directions for mesothelioma surgery are discussed in an article considering the role of screening for the disease. Rintoul and colleagues evaluate the proposition, much requested by surgeons, with the eyes of the non-surgeon with interesting results.

In conclusion the results of past mesothelioma clinical trials are interpreted by Edwards and the future research directions mapped out which will hopefully establish the evidence-based role of surgery in mesothelioma.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, *Shanghai Chest* for the series "Mesothelioma Surgery". The article did not undergo external peer review.

Conflicts of Interest: Both authors have completed the ICMJE uniform disclosure form (available at http://dx.doi.org/10.21037/shc.2018.12.02). The series "Mesothelioma Surgery" was commissioned by the editorial office without any funding or sponsorship. DW served as the unpaid Guest Editor of the series and serves as an unpaid Associate Editor-in-Chief of *Shanghai Chest*. AS served as the unpaid Guest Editor of the series. The authors have no other conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Received: 05 December 2018; Accepted: 18 December 2018; Published: 19 December 2018.
doi: 10.21037/shc.2018.12.02
View this article at: http://dx.doi.org/10.21037/shc.2018.12.02

doi: 10.21037/shc.2018.12.02
Cite this article as: Waller D, Sharkey A. What is the contemporary role for surgery in the management of malignant pleural mesothelioma? Shanghai Chest 2018;2:96.