

# Pleurectomy/decortication for malignant pleural mesothelioma

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*Provenance:* This is an invited Editorial commissioned by the Section Editor Feichao Bao (Department of Thoracic Surgery, The First Affiliated Hospital, Zhejiang University, Hangzhou, China).

*Comment on:* Friedberg JS, Simone CB 2nd, Culligan MJ, *et al.* Extended Pleurectomy-Decortication-Based Treatment for Advanced Stage Epithelial Mesothelioma Yielding a Median Survival of Nearly Three Years. *Ann Thorac Surg* 2017;103:912-9.

Submitted Jan 23, 2017. Accepted for publication Mar 01, 2017.

doi: 10.21037/jtd.2017.03.33

**View this article at:** <http://dx.doi.org/10.21037/jtd.2017.03.33>

In 2016, the *Annals of Thoracic Surgery* published a retrospective analysis of a single institutional experience of pleurectomy/decortication (P/D) plus intraoperative photodynamic therapy (PDT) in patients with malignant pleural mesothelioma (MPM) (1). Out of a total of 90 patients who underwent P/D, 73 patients with pure epithelioid subtype were analyzed. Although most of the patients had advanced MPM, macroscopic complete resection was achieved in all patients, and the overall median survival time was almost 3 years.

Clinical characteristics of the patients were as follows: a median tumor volume of 550 mL (range, 250–2,200 mL), 74% (54/73) with a node-positive disease, and 89% (65/73) showing stage III or IV disease. The 30- and 90-day mortality rates were 3% (2/73) and 4% (3/73), respectively. Postoperative pneumonia developed in 21 patients (28%), and 14 patients (19%) required tracheostomy. The overall median survival time and disease-free survival time for all 73 patients were 36 and 14 months, respectively. Among them, 19 patients with N0 disease had particularly favorable results: 87 months of median overall survival time and 27 months of disease-free survival time.

It is worthwhile to speculate why good survival was observed in this advanced MPM population. First, macroscopic complete resection was achieved in all patients. Second, all the patients underwent bimodality treatment with P/D plus PDT, and 92% (67/73) received trimodality treatment with P/D, PDT, and adjuvant chemotherapy.

Third, a discrepancy between disease-free and overall survival times may be the consequence of good tolerance of chemotherapy after recurrence.

PDT is a light-based cancer treatment. The authors have used intraoperative intrapleural application of PDT as an adjuvant therapy for thoracic malignancies (2,3). It still remains unclear whether or not PDT plays a beneficial role in the multimodality treatment of MPM. However, the encouraging data of the present study suggest that PDT is a significant treatment option for MPM. A randomized phase III trial is being planned (NCT02106599).

The authors also reported that postoperative pneumonia occurred in 21 (28%) patients, and 14 (19%) patients required tracheostomy due to respiratory failure. It should be investigated whether the high rate of postoperative respiratory failure was caused by PDT or not.

There have been controversies over the survival benefit of surgery in patients with MPM (4,5). It may be a consensus that any radical surgery can be justified when its survival rate exceeds that of the nonsurgical arms of clinical trials (e.g., 19 months in the control group of MARS Study: Mesothelioma and Radical Surgery) (6). The results of the present treatment were far superior to those of nonsurgical treatments.

P/D has long been deemed as a palliative surgery (7). After the vigorous works of pioneers in this field, including Friedberg (2,8-10), P/D is now a curative-intent surgery

for MPM (11). The present study will be a milestone for MPM surgery.

## Acknowledgements

None.

## Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

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**Cite this article as:** Takuwa T, Hasegawa S. Pleurectomy/decortication for malignant pleural mesothelioma. *J Thorac Dis* 2017;9(3):460-461. doi: 10.21037/jtd.2017.03.33