

Primary Spontaneous Pneumothorax: To Operate or not to Operate?

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Objectives: Management of primary spontaneous pneumothorax (PSP) differs widely among medical centers and between specialties. Disagreement regarding optimal initial management of PSP continues to exist. To improve management of PSP patients, this study assessed which initial management method leads to less recurrences and evaluated the significance of each recurrence.

Materials and Methods: Medical records at a single institution were analyzed for all patients with PSP from years 2009-2018. Recurrence rate with type of intervention necessitated for each recurrence and demographic/clinical characteristics were assessed. Management types were medical observation (MO), chest tube placement (CTP), or surgical intervention (SI). Statistical analysis with fisher's exact test and multivariate logistic regression models was performed.

Results: 213 patients treated for PSP were identified with an average follow-up period of 6.6 years. Of these, 15.3%, 43.3%, and 41.3% underwent MO, CTP, and SI, respectively. Recurrence rate was significantly lower in the SI group, 11.7%, compared to the MO and CTP groups, 43.5%, 44.4%, respectively ($p < 0.001$). Of those recurrences that initially underwent MO or CTP, 70% and 96.4%, respectively, underwent a CTP or SI at time of recurrence. The most common management at time of recurrence was SI.

Conclusions: Disagreement and paucity in the literature exists regarding the best initial management of PSP. This is the largest study with the longest follow-up period addressing this issue. Results from this study demonstrate a nearly 4x higher rate of recurrence with MO or CTP compared to SI. Additionally, the majority of recurrences required SI. These findings support early surgical consultation and SI for PSP.