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Complications following symptom-limited thoracentesis using suction

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Symptom-limited thoracentesis using suction is safe even with large volumes. Pneumothorax requiring intervention and REPO are rare. Drainage ≥ 1.5 L with ECOG performance status 3 or 4 increased the risk of REPO. <https://bit.ly/3ds1Hko>

Cite this article as: Sagar AES, Landaeta MF, Adrianza AM, *et al.* Complications following symptom-limited thoracentesis using suction. *Eur Respir J* 2020; 56: 1902356 [<https://doi.org/10.1183/13993003.02356-2019>].

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ABSTRACT

Background: Thoracentesis using suction is perceived to have increased risk of complications, including pneumothorax and re-expansion pulmonary oedema (REPO). Current guidelines recommend limiting drainage to 1.5 L to avoid REPO. Our purpose was to examine the incidence of complications with symptom-limited drainage of pleural fluid using suction and identify risk factors for REPO.

Methods: A retrospective cohort study of all adult patients who underwent symptom-limited thoracentesis using suction at our institution between January 1, 2004 and August 31, 2018 was performed, and a total of 10 344 thoracenteses were included.

Results: Pleural fluid ≥ 1.5 L was removed in 19% of the procedures. Thoracentesis was stopped due to chest discomfort (39%), complete drainage of fluid (37%) and persistent cough (13%). Pneumothorax based on chest radiography was detected in 3.98%, but only 0.28% required intervention. The incidence of REPO was 0.08%. The incidence of REPO increased with Eastern Cooperative Oncology Group performance status (ECOG PS) ≥ 3 compounded with ≥ 1.5 L (0.04–0.54%; 95% CI 0.13–2.06 L). Thoracentesis in those with ipsilateral mediastinal shift did not increase complications, but less fluid was removed ($p < 0.01$).

Conclusions: Symptom-limited thoracentesis using suction is safe even with large volumes. Pneumothorax requiring intervention and REPO are both rare. There were no increased procedural complications in those with ipsilateral mediastinal shift. REPO increased with poor ECOG PS and drainage ≥ 1.5 L. Symptom-limited drainage using suction without pleural manometry is safe.