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Is the Early Postoperative Application of Fibrinolytic Agents Safe in Cases of Empyema?

Meltem Kaba [1, *]

[1] Şişli Hamidiye Etfal Training and Research Hospital, Istanbul, Turkey

[*] *Corresponding author*: Şişli Hamidiye Etfal Training and Research Hospital, Istanbul, Turkey. Email: meltemkaba@windowslive.com

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Dear Editor,

I read with interest the article titled 'the efficacy of intrapleural fibrinolytic agents following surgical intervention for empyema thoracis: A prospective cross-sectional study in a pediatric population' published in the August issue of your journal. First of all, I would like to thank the article's authors and editors. I want to congratulate the authors for this successful article and make some contributions. It was an interesting article, especially for the patient group who could not achieve the desired results after empyema surgery. Empyema surgery with VATS results in severe decortication and, therefore, more or less parenchymal air leaks, predominantly in children with stage 3 empyema (1, 2). Additionally, due to lung parenchymal necrosis and bronchopleural fistulas that may accompany empyema and the air leaks that may occur after decortication surgery, in the experience of our clinic, it is not possible to apply fibrinolytic agents after surgery, especially in the early postoperative period, as stated in the article.

To prevent hematoma development after decortication surgery and to ensure that the lung parenchyma remains expanded, it is recommended that the chest tube be kept on negative-pressure aspiration for 48 - 72 hours (3, 4). The use of digital chest tube drainage systems has advanced the management of air leaks by introducing the advantages of objective assessment and keeping the lung expanded after surgery. For these two reasons, when postoperative fibrinolytic administration is planned, it may be more appropriate to wait for these critical 2 - 3 days.

During decortication surgery, the fibrous peel over the lung was removed to allow the expansion of the lung, and therefore, a wide raw area was created with surface oozing. The phenomenon of fibrinolysis is usually activated after such a procedure, increasing postoperative bleeding. Subsequently, studies have reported rates of pleural bleeding with intrapleural administration of fibrinolytic agents in the context of pleural infection ranging between 1.8% and 12% (5, 6).

As in the literature, stage 3 empyema is the most difficult group to treat (7). The definitive stage 3 of organization requires technically demanding empyema excision or decortication. In the article, the number of stage 3 empyema patients in the alteplase group, where the results are better, is significantly fewer than in the other groups. Since it was a prospectively designed study, it was thought that a more realistic perspective would be to apply a methodology that eliminated this inequality or to compare the results according to empyema grades in the current situation.

In the literature, absolute contraindications for fibrinolytic therapy in empyema include a history of a previous allergic reaction, bronchopleural fistula, recent trauma, or surgery within 48 hours. Additionally, major thoracic or abdominal surgery within the past two weeks is considered a relative contraindication (8). In conclusion, the decision to administer a fibrinolytic agent postoperatively should be based on a careful assessment of the patient's risk factors for clot formation, bleeding complications, parenchymal air leaks, and negative pressure aspiration indication.

Footnotes

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