

Intrapleural Streptokinase for the Treatment of Childhood Empyema

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Abstract

BACKGROUND: Pleuritis with empyema is a serious complication of bacterial pneumonia, which often causes substantial morbidity and mortality among pediatric patients. Currently percutaneous catheter drainage is the mainstay therapy for loculated empyema. Intrapleural instillation of streptokinase, urokinase, and recombinant tissue plasminogen activator has been reported to facilitate the drainage of viscous fluid and fibrinous debris or multiple loculations from the pleural space of such patients. **METHODS:** In this study, we compared with the treatments of pleural empyema by instillation of streptokinase through the chest tube and using the conventional chest tube drainage alone. **RESULTS:** We collected 21 cases from 1999 through 2005. The results of the study showed that streptokinase (SK) group patients revealed a larger volume of drainage in the beginning days of the instillation and required fewer days of drainage than tube drainage (T) group patients [8 (4.5 - 10) days vs. 16 (5.8 - 20.3) days, $p = 0.02$]; that the SK group patients required average 2.6 instillations. The SK patients had a shorter febrile course than the T group [12.5 (9.5 - 15.5) days vs. 16 (9.5 - 22.5) days, $p = 0.14$]. None of the SK patients needed additional video-assisted thoracoscopic surgery (VATS) whereas 5 patients in the T group did. The length of hospitalization in the SK group was 21.5 days and the T group patients was 24 days. **CONCLUSIONS:** Intrapleural instillation of streptokinase seldom caused clinical adverse effect and appears to be a safe adjunctive therapy to facilitate the drainage of empyema in pediatric patients. Further studies with better research design to compare the fibrinolytic agent instillation and the VATS as the first step treatment of childhood empyema are needed.