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Predictors of Reoperation Requirement on Iatrogenic Chylothorax After Thoracic Surgery

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Objectives: Optimal management for iatrogenic chylothorax remains a subject of debate. Some authors advocate conservative treatment while others propose early surgery. We reviewed our experience with iatrogenic chylothorax after general thoracic surgical procedures to identify factors that predict the need for reoperation and to evaluate the success of management.

Methods: Between January 2010 and July 2018, 3640 general thoracic surgical procedures were performed at our institution and iatrogenic chylothorax developed in 19 patients. The medical records of these 19 patients were reviewed for age, sex, preoperative history, operative and pathologic findings, amount of daily chest tube (CT) output, and method of management of the chylothorax. We compared the differences in triglyceride value, triglyceride/cholesterol rate, the CT output for the daily before reoperation, the first 24 hours and 5 postoperative days between the conservatively cured group and reoperation group.

Results: Pulmonary operations were performed in 14 patients, mediastinal operations were performed in four, and esophageal operation was performed in one. All patients were initially treated by complete cessation of oral intake and total parenteral nutrition, talc pleurodesis and somatostatin. This treatment was successful for 12 patients. The remaining seven patients (36.8%) required reoperation to control the chylothorax. The approach for the reoperation was through the initial thoracotomy in 5 patients and by video-assisted thoracic surgery in two. The injury to the thoracic duct was identified at reoperation in three of the seven patients (42.8%). The site of ligation was the supradiaphragm in 4 patients and immediately below the fistula in three. Fibrin glue was applied to the posterior mediastinum in all patients. A partial parietal pleurectomy was performed in 5 patients and mechanical pleurodesis was performed in two patients. Reoperation was successful in all patients. There was significant difference between the conservatively cured group and reoperation group for CT output for the first 24 hours and 5 days and triglyceride/cholesterol rate. But no significant differences in daily CT output and triglyceride value were observed among two groups.

Conclusion: When patients present with an iatrogenic chylothorax, we recommend an aggressive conservative management (chest tube drainage, nil per os/total parenteral nutrition, talc pleurodesis, somatostatin). The CT output greater than 950 ml/day for the first day or 1000 ml/day for the first 5 days and the development of a chylothorax after an esophageal operation are significant factors that predicted the need for reoperation.

Keywords: Iatrogenic chylothorax, management, reoperation