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Title: Predictive factors for succeeded thoracoscopic treatment in patients with retained hemothorax-experience from two centers

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Body: Introduction: In 5-35% of retained hemothorax cases the chest tube dosen't allow adequate evacuation of hemothorax. Video-assisted thoracis Surgery (VATS) decrease the need of thoracotomy in 70% of the cases. Aim of study: A retrospective analysis of patients, operated on for retained hemothorax, was performed in two thoracic surgery centers in order to investigate the predictive factors for succeeded VATS treatment. Materials and methods: For five years period a total of 50 patients were operated on for retained hemothorax (35 by VATS and 15 by thoracotomy). The demographics and clinical parameters (age, sex, type of trauma, side of hemothorax, days after chest tube insertion, diameter of chest tube, antibiotic use, quantity of hemothorax, additional diaphragmatic injury, ribs trauma, days after trauma, injury severity score and abbreviated injury severity score) of all cases were investigate with univariate analysis by logistic regression analysis (statistical significance when $p < 0,05$). Results: The perioperative antibiotic prophylaxis (OR, 2,4[1,9-4,9]; $p=0,03$), the volume of hemothorax >900 cc. (OR, 4,2[2,1-6,8]; $p=0,01$), the diaphragmatic injury (OR, 3,4[2,0-8,6]; $p=0,04$) and the period between the trauma and surgery (OR, 4,8[3,4-12,1]; $p < 0,001$) were found to be the leading factors predicting conversion to thoracotomy. Conclusion: VATS is effective in patients with performed perioperative antibiotic prophylactic, with no diaphragmatic injury, early performed chest tube drainage and hemothorax with volume less then 900 cc.