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Title: Is clamping of chest tubes for air leak necessary?

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Body: OBJECTIVE: Occult air leak, not observed clinically, may lead to the recurrence of pneumothorax. Many clinicians prefer to clamp the chest tube before removal. Aim of the present study is to investigate the need for clamping of the chest tube before removal. PATIENTS AND METHODS: Surgical patients, spontaneous pneumothorax (SP) and traumatic pneumothorax patients after cessation of air leak were randomly categorized into a clamp and no-clamp chest tube removal group. The analyzed variables included; the demographic data, the chest tube drainage duration, the number and size of recurrences of pneumothorax, the needed interventions, the in-hospital stay, the morbidity and mortality. Significance was tested with student's t-test, Mann-Whitney and χ^2 test. $p<0.05$ was accepted as significant. RESULTS: Overall 120 patients (72.5% males, mean age 52.1 years) were included in the study. In the clamp group, relapses of pneumothorax tended to be lesser ($p=0.075$), the mean size of pneumothorax was smaller ($p=0.042$) and eventually fewer interventions were needed ($p=0.042$). Fifteen cases regarded SP patients, whereas 9 regarded cancer and 9 trauma patients ($p=0.06$). In SP no-clamp group, relapses were more ($p=0.028$), with a greater mean pneumothorax size ($p=0.05$) and more intereventions eventually needed ($p=0.048$, more new chest tubes inserted than in other groups $p=0.038$) with longer in-hospital stay ($p=0.048$) when compared to the clamp group. No differences were calculated in the elective surgery and trauma groups. CONCLUSIONS: The chest tube for pneumothorax should be clamped before removal in SP cases. Otherwise, the pneumothorax tends to relapse with greater size, more interventions are needed and in-hospital stay is prolonged.