



EFFICACY OF EARLY AUTOLOGOUS BLOOD PATCH APPLICATION ON PRIMARY SPONTANEOUS PNEUMOTHORAX IN ADOLESCENTS

Betül Altundal, Sefer Tolga Okay, Mete Kaya

Aim: Treatment of primary spontaneous pneumothorax (PSP) generally consists of spontaneous resolution with conservative approach, insertion of a vacuum chest tube, and surgery in severe cases. Although it is known that autologous blood patch (ABP) application is effective in secondary pneumothorax and prolonged air leakage, the effect of its early application is not fully known. In this study, we aimed to examine the effectiveness of ABP application in PSP patients in our clinic.

Methods:

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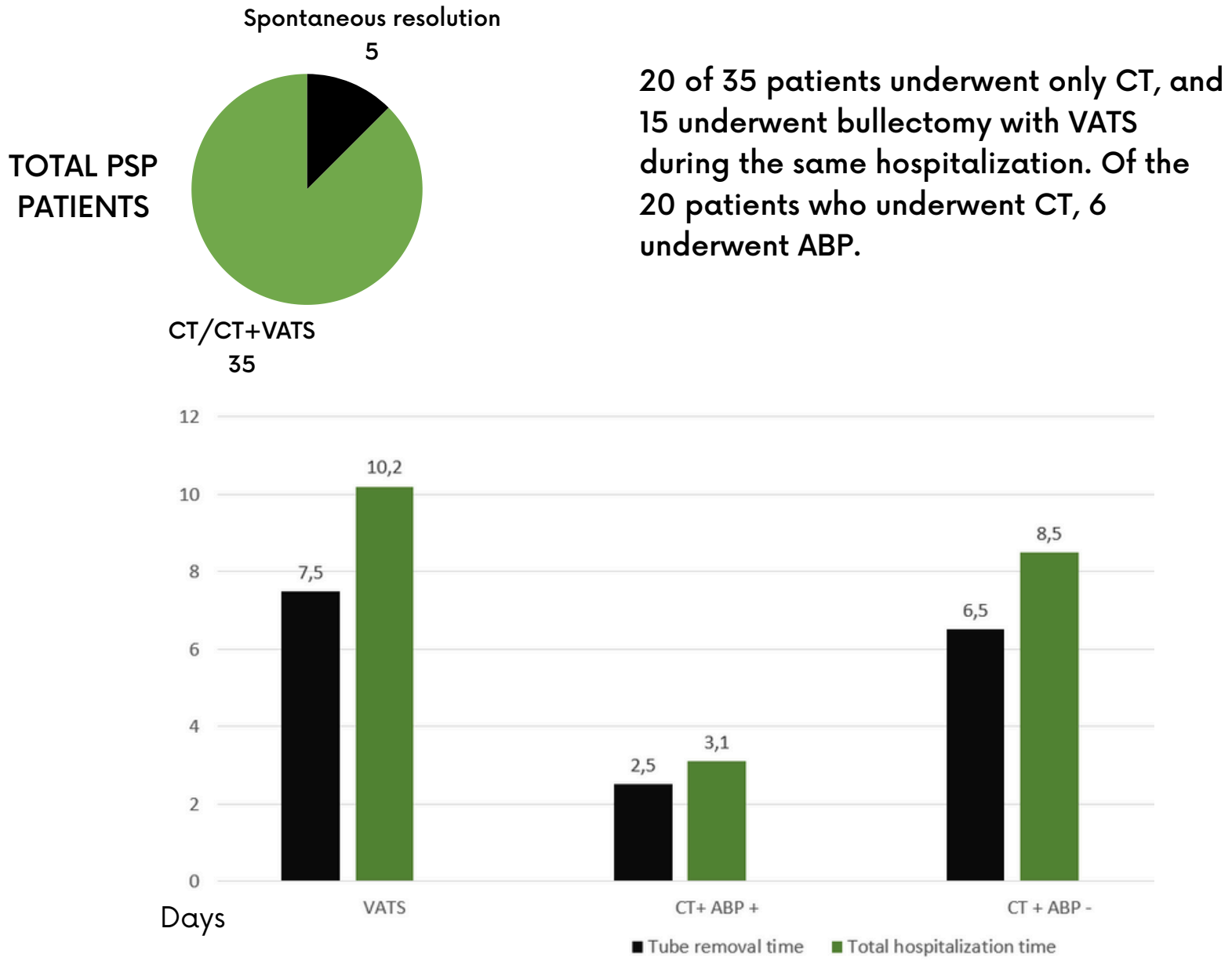
Patients were grouped as those who underwent only chest tube (CT) placement and those who underwent bullectomy with video-assisted thoracoscopic surgery (VATS). Patients were divided into two groups as those with ABP (CT+ABP(+)) and those without (CT+ABP(-)).

Technique:

- Sterile, bedside
- 1–2.5 ml/kg of fresh whole blood, from a large peripheral or central vein
- Immediate injection into the pleural cavity via the chest tube.
- Clamped for three hours and then placed to water seal.

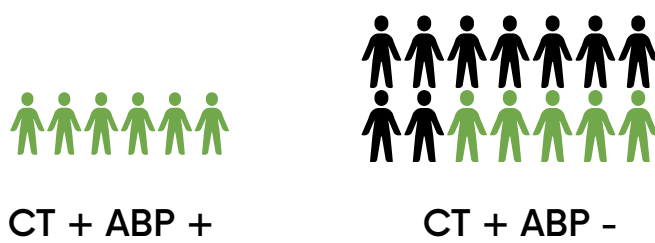


Results: 40 patients (37 M, 3 F), mean age 16.2 years



The mean tube removal times in the VATS, CT+ABP(+) and CT+ABP(-) groups were 7.5 days (2-17), 2.5 days (2-3) and 6.5 days (2-12), respectively. The duration was significantly shorter in those who underwent ABP than in both other groups ($p<0.05$). The duration of hospitalization was 10.2 days (5-22), 3.1 days (3-5) and 8.5 days (3-13) in the VATS, CT+ABP (+) and CT+ABP (-) groups, respectively. It was significantly shorter in the CT+ABP (+) group ($p<0.05$).

Recurrence:



No recurrence was observed in any of the patients who underwent ABP, and 9 of 14 patients in the CT+ABP (-) group developed recurrence, the difference was significant ($p<0.05$).

Conclusion

ABP application, which is mostly used in postoperative prolonged air leaks, is an effective treatment method that shortens the tube removal time, hospital stay and recurrences in PSP when applied in the early period.

References:

- Lillegard JB, Kennedy RD, Ishitani MB, Zarroug AE, Feltis B. Autologous blood patch for persistent air leak in children. J Pediatr Surg. 2013 Sep;48(9):1862-6.
- Umar Z, Nassar M, Ashfaq S, Foster A, Sandhu JK, Ariyaratnam J, Lopez R, Trandafirescu T. The Efficacy and Safety of Autologous Blood Patch for Persistent Air Leaks: A Systematic Review and Meta-Analysis. Cureus. 2023 Mar 21;15(3):e36466.