

Autologous blood patch pleurodesis: An effective but underused method

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We read with great interest the article entitled, “Use of Autologous Blood Patch for Prolonged Air Leak in Spontaneous Pneumothoraces in the Adolescent Population.”^[1] The authors report two cases of primary spontaneous pneumothorax with prolonged air leak (PAL) that were definitively treated with autologous blood patch (ABP) instilled in the pleural cavity through chest drain. Currently, the most-used method for definitive care of primary or secondary spontaneous pneumothorax is videothoracoscopy, bullectomy if the bullae or bleb is identified by computed tomography or during surgery, and pleurodesis performed via videothoracoscopy by different chemical agents or abrasion. The possibility of definitive cure in spontaneous pneumothorax using autologous blood pleurodesis (ABP) would have the benefit of the pleurodesis without the need of bullectomy or videothoracoscopy. It is reasonable to argue that if the ABP works well in the case of PAL from spontaneous pneumothorax, it could also work for other diseases which require the pleural symphysis.

Pleurodesis is a well-established procedure for malignant pleural effusion.^[2,3] Classically, in patients with primary spontaneous pneumothorax, it can be done after the second episode. However, some studies support the procedure in the first episode, especially in cases of secondary spontaneous pneumothorax. Moreover, pleurodesis has also been used in catamenial pneumothorax, refractory hydrothorax secondary to ascites, chylothorax, malignant pleural effusion, and other medical situations.^[4,5]

Usually, pleurodesis is performed through chest drain or videothoracoscopy, although via open surgery or via transcatheter are possible too.^[3] Videothoracoscopy has the advantage handle with adherences and perform pleurodesis while inspecting the pleural cavity. Moreover, when performing pleurodesis, videothoracoscopy allows to instill the medication under direct visualization.^[3]

ABP via chest drain, although not widely used, is a very well-established procedure, being performed for more than 30 years.^[6] Other agents amenable to use via chest drain may have potential adverse effects that do not occur significantly with ABP, such as allergic reactions and hypersensitivity pneumonitis (talc) and severe pain and

intense systemic inflammatory response (silver nitrate and tetracycline). ABP has the theoretical potential of being an environment for bacterial growth in pleural cavity and promoting a pleural empyema; however, studies and reports regarding this method for pleurodesis did not confirm this hypothesis.^[7,8] Many studies showed that ABP has the same efficacy as tetracycline, silver nitrate, and talc in achieving pleurodesis with less pain and fever, in addition to short length of stay in ABP group.^[8-11] These findings, associated with reports from other studies, allow us to state that ABP induces less systemic inflammatory response than tetracycline and silver nitrate. This is especially relevant in patients with malignant pleural effusion presenting with poor general status.^[2,3] Importantly, besides less systemic inflammatory response, the effectiveness of pleural symphysis is the same as the other chemical agents.

Some reports have stated that the success rate of ABP pleurodesis correlates with air leak duration, with better results related to patients receiving the procedure in the 1st day of the air leak.^[5,9,10] However, most studies report effective pleurodesis nearly 100% when repeating the procedure in the small percentage of patients in whom the first ABP pleurodesis has failed.^[5,9-11]

Regarding the technique of ABP pleurodesis in the article titled, “Use of Autologous Blood Patch for Prolonged Air Leak in Spontaneous Pneumothoraces in the Adolescent Population,” the authors utilized 2 ml of blood/kg.^[1] Reports recommend the use of 50–200 ml in adults, but there are no studies specifically evaluating this issue. Few studies recommend adding low-molecular-weight heparin to ABP, but most authors do not recommend it.^[8-12] The procedure can be performed at the ward and usually requires neither analgesia nor anesthesia. It is paramount to observe rigorously all aseptic conditions as in any surgical procedure. Most authors recommend clamping the chest drain, and it is also our opinion; the period of clamping varies from 15 min to 2 h with similar results.^[5,7,8,12] Our practice is clamping the drain only if there is not active air leak, usually for 1 h. If the leak exists, we just elevate the chest drain system during the procedure aiming that the fluid goes to the pleural cavity and not to the collector system.^[2,3]

Although ABP pleurodesis is not a new procedure and is extremely effective, it is hard to say why so many reports are coming from developing countries, when compared to other methods of pleurodesis. We do not know if there are some cultural or economic factors, but the effectiveness of ABP pleurodesis could justify its use more widely.

ABP is a simple, painless, inexpensive, and effective treatment for patients with persistent PAL or even when performing the ordinary pleurodesis.

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