Fibrin glue for sealing the needle track after percutaneous lung biopsy: Part I--Experimental study.

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Abstract:

PURPOSE: Evaluate the effectiveness of fibrin glue for the embolic occlusion of needle tracks following percutaneous lung biopsy (PLB).

METHODS: Twenty-six rabbits underwent computed tomography (CT)-guided PLB using a coaxial system consisting of 19- and 22-gauge needles. Thirteen rabbits were used as controls (group A). In 13 other rabbits (group B), fibrin glue labelled with I131 fibrinogen and contrast medium was injected into the track. Both groups were examined by CT for the presence and severity of pneumothorax (mild: less than 20%; severe: more than 20%). Group B was also examined scintigraphically and their lungs were studied histologically.

RESULTS: In group A, pneumothorax developed in eight animals (61.6%) and was severe in six (46.1%) whereas in group B, pneumothorax developed in five animals (38.5%) and was severe in one (7.7%). Though the difference between the two groups in overall incidence of pneumothorax was not significant ($p > 0.1$), it was significantly higher ($p < 0.025$) for severe pneumothorax in group A. No signs of systemic embolism were observed.

CONCLUSIONS: Based on this animal model, fibrin glue is a safe and useful sealant following PLB and reduces the incidence of severe pneumothorax.