Can post Pulmonary Biopsy Tract Embolization Protect against Further Complications.

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AIM OF THE WORK

Our study aims to assess the efficiency of post lung biopsy Gelfoam slurry embolization in decreasing the risk of post procedural complications in the form of pneumothorax, hospital admission and need for further intervention.

Patients and Methods

This is prospective randomized control study where 70 CT guided biopsies performed with tract embolization were compared to 68 controls. After the biopsy, patients were kept under 4-6 hours observation. Pre- procedural, procedural risk factors were recorded.

Complications were recreded as pneumothorax, pneumothorax requiring chest tube insertion, hemorrhagic complications in general divided as (hemothorax, hemoptysis, pulmonary parenchymal hemorrhage). The total rate for hospital admission were recorded.

Logistic step wise regression analysis for the risk factors of pneumothorax, hemothorax, chest tube placement and hospital admission were performed to detected the highest relevance for the development of complications or any protective effects.

Results

The provided study group full filled the criteria of randomization where no significant difference comparing both groups regarding risk factor representation was detected. Inspite of that, there was no significant reduction in the rates of pneumothorax and total hemorrhagic complications. However, there was a

significant decrease of rates of pneumothorax requiring chest tube insertions (19.1% vs. 7.1%, p=0.037), hemothorax (13.2 vs. 2.9%, p= 0.024) and hospital admission rates (19.1% vs. 4.3%, p= 0.007). The only common factor increasing the odds of complications was needle pleural angle more than 70◦, where pneumothorax increased by 2.859 times (p=0.005), chest tube increased by 3.1 times (p=0.034). None of the gel foam embolized cases or controls, required further surgical intervention and no distant embolization, air embolism or mortalities were recorded.

Conclusion

CT guided lung biopsy is widely used method diagnosing lung masses pathology.Although considered safe, lung biopsy techniques can be associated by potential complications.

In a randomized control study design a total of 138 cases (68 controls) and (70 embolized cases).We couldn't detect significant statistical reduction in pneumothorax rates in total hemorrhagic complications. However, embolized cases required significantly less chest tube insertion, suffered less major hemorrhages (hemothorax) & reduced their hospital admissions and thus hospital expenditures and patient compromise.

Key Words:

Lung biopsy, Gel foam slurry, pneumothorax, Chest tube