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Successful Lung Cryoablation for a Bulky Lung Carcinoma

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Title:

Successful lung cryoablation for a bulky lung carcinoma

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Conflict of interest

NA

Text

A 49-year-old man was referred for a 6.3cm lung tumor (Fig.1). Prior history included Hodgkin's disease (1992), tobacco use, right upper lobectomy for lung adenocarcinoma (2013), and chemotherapy for a contralateral recurrence (2015) with a complete response. A 2017 recurrence occurred; he was contraindicated for additional surgery and radiotherapy because of prior radiation and compromised pulmonary function: FEV₁=68%; VO₂max=41%. Lung cryoablation was planned. Using computed tomographic guidance, 7 cryoprobes (IceRoad-Cx[®], Galil Medical) (Fig.2 and 3) were successfully placed and activated for 3 freeze–thaw cycles. A 24 hour intensive care unit recovery and chest tube were required due to a pneumothorax and lung consolidation. He was discharged 12 days later. PET-CT after 2 years of follow-up showed a complete metabolic response and shrinkage of the ablation scar (Fig.4).

Figure caption:

Figure 1: Axial PET-CT image shows the 6.3 cm lung mass in the Fowler segment of the right lower lobe. The hypermetabolic activity of the mass can be seen.

Figure 2: CT volume rendering reformation demonstrated the 7 cryoprobes coursing through the chest wall into the mass.

Figure 3: Multiplanar reconstruction orthogonal to the long axis of the probes shows their distribution within the tumor in order to create an encompassing ice-ball with safety margins.

Figure 4: Axial CT with positron emission tomography fusion obtained 2 years after treatment shows the absence of metabolic activity and shrinkage of the ablation scar.







