



UPDATE IN RADIOLOGY

Pulmonary radiofrequency ablation (Part 2): Procedure and follow-up[☆]



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KEYWORDS

Radiofrequency ablation;
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Abstract Pulmonary radiofrequency ablation requires more than just interventional radiology skills. Patients must be selected carefully, and the acts that need to be done before, during, and after the procedure must be coordinated. To guarantee patient safety, radiologists need to know the variants of the technique, the precautions that must be taken, the complications that can occur, and the risks involved. Early differentiation between tumor tissue and normal changes secondary to treatment on imaging tests will make it possible to repeat the treatment without delays, and this will increase survival. This article describes how to coordinate and carry out pulmonary radiofrequency ablation, the complications of the technique, and the current evidence in follow-up.

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PALABRAS CLAVE

Ablación con radiofrecuencia;
Tumores pulmonares;
Guía de imagen;
latrogenia;
Seguimiento

Radiofrecuencia pulmonar (Parte 2): procedimiento y seguimiento

Resumen Para la ablación pulmonar con radiofrecuencia no solo son necesarias habilidades intervencionistas. Tras seleccionar adecuadamente al paciente, hay que coordinar las actuaciones previas, durante y posteriores al procedimiento. Conocer las variantes de la técnica, las precauciones, las complicaciones, los riesgos y las recomendaciones para el seguimiento garantizará la seguridad del paciente. Diferenciar precozmente en las pruebas de imagen el tejido tumoral de los cambios normales secundarios al tratamiento permitirá volver a tratar pronto al paciente, lo que aumentará su supervivencia. El objetivo de este trabajo es describir cómo coordinar y realizar la ablación pulmonar con radiofrecuencia, sus complicaciones y la evidencia actual en el seguimiento.

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Introduction

Radiofrequency ablation (RFA) is a current alternative to treat localized lung neoplasms with concrete recommendations.^{1,2} It is important to know the procedure and coordinate the process actions from selecting the patient adequately in a multidisciplinary committee that ensures the best therapeutic alternative possible to performing the RFA without delay but with minimal risks and complication impact. It is essential to make a follow-up of the lesion through a method that can detect local tumor persistence early that treated with RFA improves survival.³ Tumors treated through ablation remain "in situ" and they will undergo dynamic changes secondary to therapy for a long time. Distinguishing them from tumor persistence or recurrence is a complex challenge and it can be done with image modalities only.⁴⁻⁶ The type of test, the timing, the technical protocol and the right interpretation will be crucial. Our goal is to describe how to coordinate and perform the pulmonary radiofrequency procedure, get to

know its complications and the current evidence during follow-up.

Actions prior to the proceeding

1. Determining the optimal therapy in multidisciplinary session⁷ with the oncologist, a radiologist experienced in pulmonary procedures, a radiotherapist, a chest surgeon and a pneumologist.
2. Assessing the cardiopulmonary situation and the risk of bleeding and correcting possible contraindications.² Warfarin and acenocoumarol should be withdrawn 4-5 days earlier⁸ though there is no solid evidence to withdraw antiplatelets,⁹ it is recommended that acetylsalicylic acid, clopidogrel and non-steroidal anti-inflammatory drugs to be withdrawn 5-7 days earlier,^{1,7,10,11} as well as the rest of antiaggregants based on their pharmacodynamic properties. In procedures that are not complex, one prior therapeutic dose of low molecular weight heparin of subcutaneous absorption or derivatives should

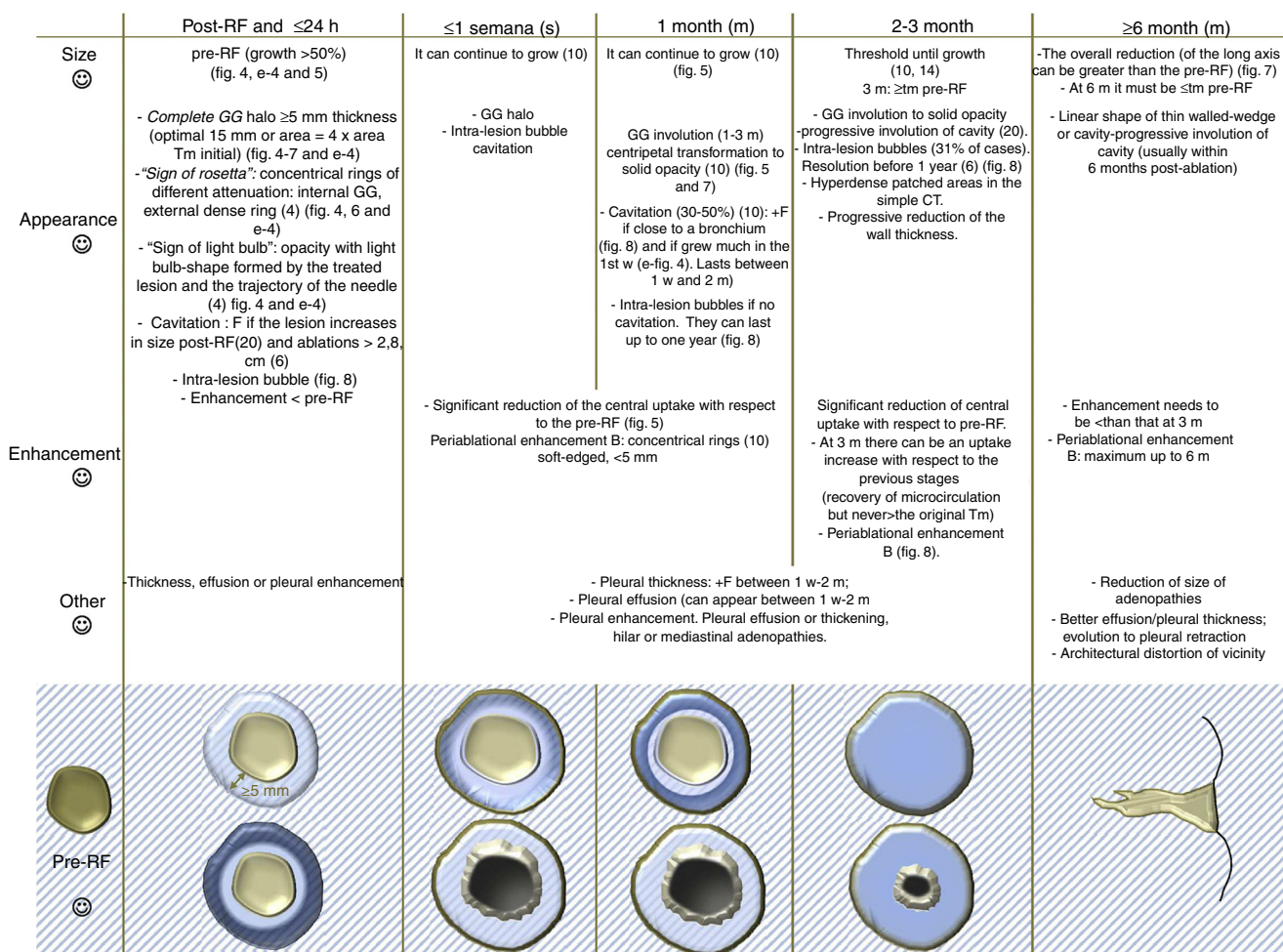


Figure 1 Expected findings in CT after pulmonary radiofrequency ablation. Color code: light blue-translucent: ground-glass; dark blue: consolidation; dark gold: IV contrast uptake; light gold: no IV contrast uptake; gray-black: cavitation. The color of this figure can only be appreciated in the article electronic version. B: benign; F: frequency; m: month; RF: radiofrequency; w: week; Tm: tumor; GG: ground-glass.

Source: Sharma et al.¹, Abtin et al.⁴, Eradat et al.⁵, Chheang et al.⁶, Sharma et al.¹⁰, Sofocleous et al.¹⁴, Pua et al.¹⁵, Schneider et al.¹⁷, Alexander et al.¹⁹, Healey et al.²⁰, Casal et al.²⁷ and Rasmussen et al.³⁵

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