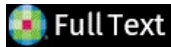


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[Multicenter Study](#) [Ann Surg.](#) 2022 Oct 1;276(4):589-596. doi: 10.1097/SLA.0000000000005594.

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Efficacy and Safety of Radiofrequency Ablation of Thyroid Nodules: A Multi-institutional Prospective Cohort Study

Emad Kandil ¹, Mahmoud Omar ¹, Mohamed Aboueisha ^{1 2}, Abdallah S Attia ¹, Khalid M Ali ³, Ruba F Abu Alhuda ¹, Peter P Issa ⁴, Samantha Wolfe ³, Sara Omari ¹, Yusef Buti ¹, Omar Abozaid ¹, Eman Toraih ^{1 5}, Mohamed A Shama ¹, Grace Lee ⁶, Ralph P Tufano ³, Jonathon O Russell ³

Affiliations

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Abstract

Background: Radiofrequency ablation (RFA) has been recently adopted into the practice of thyroidology in the United States, although its use as an alternative to traditional thyroid surgery in Asia and Europe came near the turn of the 21st century. In the United States, only a few studies with small sample sizes have been published to date. We examined outcomes of benign thyroid nodules treated with RFA from 2 North American institutions.

Methods: We performed a prospective, multi-institutional cohort study of thyroid nodules treated with RFA between July 2019 and January 2022. Demographics, sonographic characteristics of thyroid nodules, thyroid function profiles, procedural details, complications, and nodule volume measurements at 1, 3, 6, and 12 months follow-up were evaluated. Adjusted multivariate logistic regression analysis was performed to identify sonographic features associated with treatment failure.

Results: A total of 233 nodules were included. The median and interquartile range of volume reduction rate (VRR) at 1, 3, 6, and 12 months were 54% [interquartile range (IQR): 36%-73%], 58% (IQR: 37%-80%), 73% (IQR: 51%-90%), and 76% (IQR: 52%-90%), respectively ($P < 0.001$). Four patients presented with toxic adenomas. All patients were confirmed euthyroid at 3-month postprocedure follow-up. Two patients developed temporary hoarseness of voice, but no hematoma or nodular rupture occurred postprocedure. Elastography was significantly associated with VRR. Compared with soft nodules, stiff nodules were more likely to have a lower VRR (odds ratio: 11.64, 95% confidence interval: 3.81-35.53, $P < 0.05$), and mixed elasticity was also more likely to have a lower VRR (odds ratio: 4.9; 95% confidence interval: 1.62-14.85, $P < 0.05$).

Conclusions: This is the largest multi-institutional North American study examining thyroid nodule treatment response to RFA. RFA is a safe and effective treatment option that allows preservation of thyroid function with minimal risk of procedural complications.

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