Supplementary

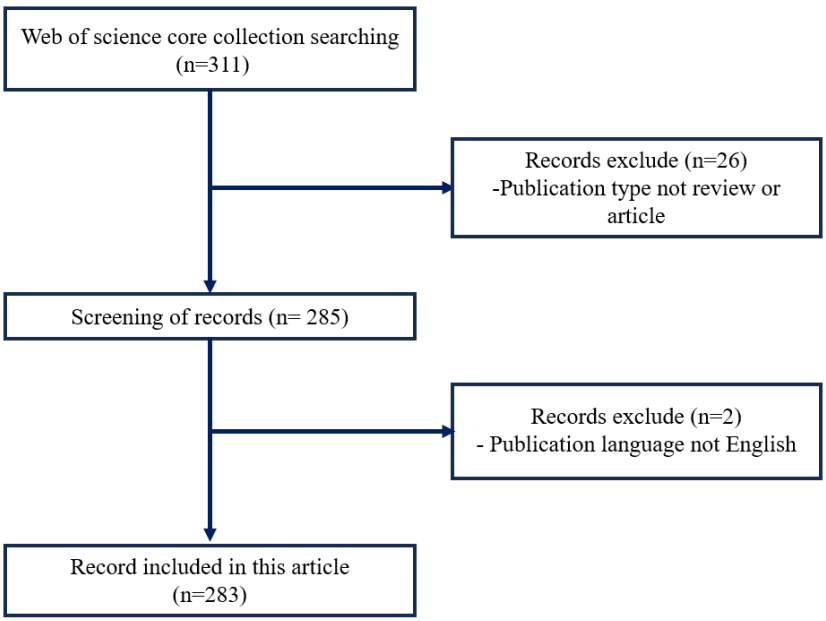

Figure S1 Screening flowchart for the inclusion studies.

Table S1 Top 10 countries in the field of thermal ablation of papillary thyroid cancer

Country	Counts	TC	Average citations
China	167	2,587	15.50
USA	32	838	26.20
Korea	32	1,121	35.00
Italy	22	785	35.70
France	7	277	39.60
Canada	4	42	10.50
Japan	3	19	6.30
Greece	3	11	3.70
Brazil	3	54	18.00
Colombia	2	8	4.00

TC, total citations.

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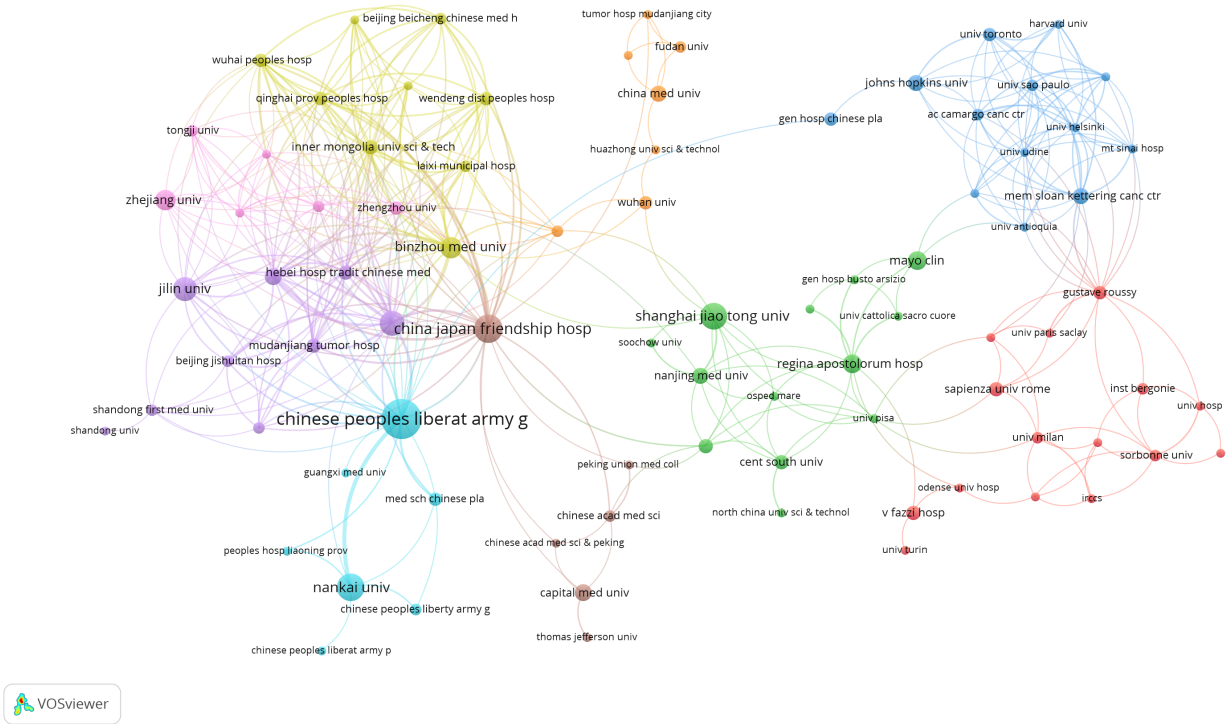

Figure S2 Network diagram of collaboration between agencies.

Table S2 Top 10 co-cited journals in the field of thermal ablation of papillary thyroid cancer

Journal	Citation	IF (2023)	JCR (2023)
Thyroid	1,666	5.8	Q1
International Journal of Hyperthermia	816	3	Q2
Journal of Clinical Endocrinology & Metabolism	628	5	Q1
European Radiology	422	4.7	Q1
Korean Journal of Radiology	377	4.4	Q1
Radiology	372	12.1	Q1
World Journal of Surgery	334	2.3	Q2
Surgery	255	3.2	Q1
Endocrine	185	3	Q2
Frontiers In Endocrinology	174	3.9	Q2

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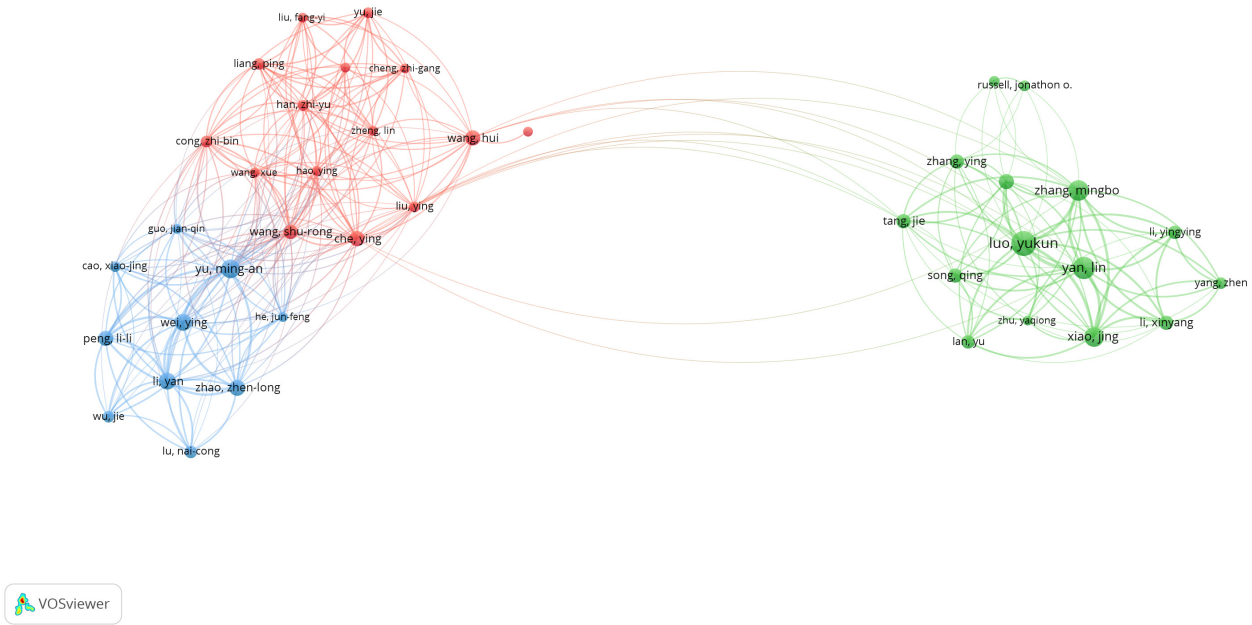

Figure S3 Collaborative network diagram between authors.

Table S3 Top 10 most cited articles in the field of thermal ablation of PTC

Publication	Citations	Journal	Published year
Radiofrequency ablation and percutaneous ethanol injection treatment for recurrent local and distant well-differentiated thyroid carcinoma	163	*Annals of Surgery*	2006
Efficacy and Safety of Ultrasound-Guided Radiofrequency Ablation for Treating Low-Risk Papillary Thyroid Microcarcinoma: A Prospective Study	138	*Thyroid*	2016
Ultrasound-Guided Radiofrequency Ablation Versus Surgery for Low-Risk Papillary Thyroid Microcarcinoma: Results of Over 5 Years' Follow-Up	110	*Thyroid*	2020
European Thyroid Association and Cardiovascular and Interventional Radiological Society of Europe 2021 Clinical Practice Guideline for the Use of Minimally Invasive Treatments in Malignant Thyroid Lesions	108	*European Thyroid Journal*	2021
Contemporary Thyroid Nodule Evaluation and Management	108	*Journal of Clinical Endocrinology & Metabolism*	2020
Low risk papillary thyroid cancer	100	*BMJ-British Medical Journal*	2014
Ultrasound-guided percutaneous microwave ablation of solitary T1N0M0 papillary thyroid microcarcinoma: initial experience	94	*International Journal of Hyperthermia*	2014
Efficacy and Safety of Radiofrequency Ablation for Treatment of Locally Recurrent Thyroid Cancers Smaller than 2 cm	93	*Radiology*	2015
Treatment of Metastatic Lymph Nodes in the Neck from Papillary Thyroid Carcinoma with Percutaneous Laser Ablation	92	*Cardiovascular and Interventional Radiology*	2016
Efficacy and Safety of Thermal Ablation Techniques for the Treatment of Primary Papillary Thyroid Microcarcinoma: A Systematic Review and Meta-Analysis	90	*Thyroid*	2020

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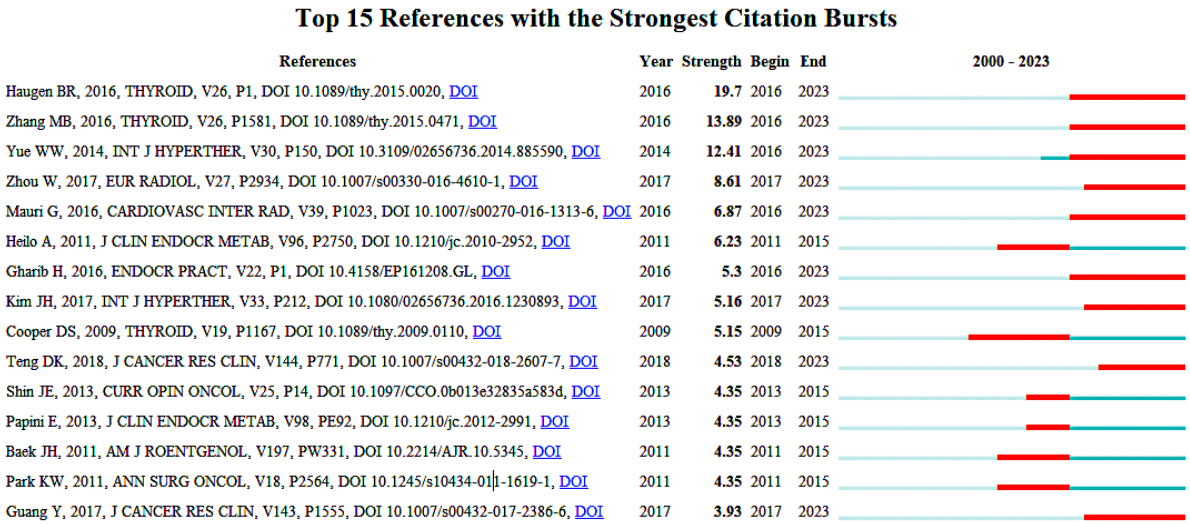

Figure S4 The top 20 co-citations with the strongest citation burst. The green lines represent the occurrence and development of keywords, while the red lines represent the duration of the outbreak.

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Table S4 Article on thermal ablation for metastatic thyroid carcinoma

Publication	Journal	Published year
Residual tumor and central lymph node metastasis after thermal ablation of papillary thyroid carcinoma: A case report and review of literature	*World Journal Frontiers of Clinical Cases*	2021
Safety and efficiency of ultrasound-guided low power microwave ablation in the treatment of cervical metastatic lymph node from papillary thyroid carcinoma: a mean of 32 months follow-up study	*Endocrine*	2018
Ultrasound-guided thermal ablation for cervical lymph node metastasis from thyroid carcinoma: a meta-analysis of clinical efficacy and safety	*Lasers in Medical Science*	2022
Efficacy and safety of percutaneous ultrasound-guided microwave ablation for cervical metastatic lymph nodes from papillary thyroid carcinoma	*International Journal of Hyperthermia*	2020
Thermal ablation for cervical lymph node metastasis from papillary thyroid carcinoma: A meta-analysis	*Medicine*	2022
Internal Jugular Vein Thrombosis After Microwave Ablation of Cervical Lymph Node Metastasis in Papillary Thyroid Microcarcinoma: A Case Report	*Frontiers in Endocrinology*	2022
Ultrasonography-Guided Thermal Ablation for Cervical Lymph Node Metastasis of Recurrent Papillary Thyroid Carcinoma: Is it Superior to Surgical Resection?	*Frontiers in Endocrinology*	2022
Efficacy and Safety of Thermal Ablation for Treating Lymph Node Metastasis From Papillary Thyroid Carcinoma: A Systematic Review and Meta-Analysis	*Frontiers In Oncology*	2022
The value of ultrasound guided laser ablation in papillary thyroid recurrence carcinoma: A retrospective, single center study from China	*Frontiers in Endocrinology*	2022
Percutaneous laser ablation for treatment of locally recurrent papillary thyroid carcinoma <15 mm	*Clinical Radiology*	2016
Efficacy and safety of radiofrequency ablation for treating locoregional recurrence from papillary thyroid cancer	*European Radiology*	2015
Efficacy and safety of microwave ablation for cervical metastatic lymph nodes arising post resection of papillary thyroid carcinoma: a retrospective study	*International Journal of Hyperthermia*	2020
Safety and efficacy of thermal ablation for cervical metastatic lymph nodes in papillary thyroid carcinoma: A systematic review and meta-analysis	*Frontiers in Endocrinology*	2022
Percutaneous thermal ablation of lung metastases from thyroid carcinomas. A retrospective multicenter study of 107 nodules. On behalf of the TUTHYREF network	*Endocrine*	2021
Evaluating the safety and efficacy of microwave ablation in treatment of cervical metastatic lymph nodes of papillary thyroid carcinoma compared to repeat surgery	*International Journal of Hyperthermia*	2022
Percutaneous laser ablation of cervical metastatic lymph nodes in papillary thyroid carcinoma: clinical efficacy and anatomical considerations	*Expert Review of Medical Devices*	2021
Radiofrequency ablation for skeletal metastasis of papillary carcinoma of the thyroid - Conjunct treatment with radioablative iodine	*The Endocrinologist*	2004
Percutaneous Microwave Ablation of Metastatic Lymph Nodes from Papillary Thyroid Carcinoma: Preliminary Results	*World Journal of Surgery*	2019
Efficacy and safety of percutaneous ultrasound guided radiofrequency ablation for treating cervical metastatic lymph nodes from papillary thyroid carcinoma	*Journal of Cancer Research and Clinical Oncology*	2017
Laser Ablation Treatment of Recurrent Lymph Node Metastases from Papillary Thyroid Carcinoma	*Journal of Clinical Medicine*	2021

Table S4 (*continued*)

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Table S4 (*continued*)

Publication	Journal	Published year
Long-term results of radiofrequency ablation for locally recurrent papillary thyroid carcinoma	*International Journal of Hyperthermia*	2023
Locoregional control of recurrent papillary thyroid carcinoma by ultrasound-guided percutaneous microwave ablation: A prospective study	*International Journal of Hyperthermia*	2015
Efficacy of radiofrequency ablation for metastatic papillary thyroid cancer with and without initial biochemical complete status	*Frontiers in Endocrinology*	2022
Radiofrequency ablation for treatment of locally recurrent thyroid cancer presenting as a metastatic lymph node with dense macrocalcification: A case report and literature review	*Medicine*	2018
Longer-term outcomes of radiofrequency ablation for locally recurrent papillary thyroid cancer	*European Radiology*	2019
Radiofrequency ablation to treat loco-regional recurrence of well-differentiated thyroid carcinoma	*Korean Journal of Radiology*	2014
Role of laser ablation in multimodal treatment of radioiodine- refractory bone metastases of thyroid cancer: a retrospective study	*Endocrine*	2020
Efficacy of radiofrequency ablation for recurrent thyroid cancer invading the airways	*European Radiology*	2021
Single-Fiber Laser Ablation in Treating Selected Metastatic Lymph Nodes of Papillary Thyroid Carcinoma and Benign Cold Thyroid Nodules-Preliminary Results	*Lasers in Surgery and Medicine*	2020
Treatment Efficacy of Radiofrequency Ablation for Recurrent Tumor at the Central Compartment After Hemithyroidectomy	*American Journal of Roentgenology*	2021
Percutaneous ultrasound-guided laser ablation is effective for treating selected nodal metastases in papillary thyroid cancer	*The Journal of Clinical Endocrinology & Metabolism*	2013
Inoperable symptomatic recurrent thyroid cancers: preliminary result of radiofrequency ablation	*Annals of Surgical Oncology*	2011
Comparison of efficacy and complications between radiofrequency ablation and repeat surgery in the treatment of locally recurrent thyroid cancers: a single-center propensity score matching study	*International Journal of Hyperthermia*	2019
Efficacy and Safety of Radiofrequency Ablation for Treatment of Locally Recurrent Thyroid Cancers Smaller than 2 cm	*Radiology*	2015
Treatment of Metastatic Lymph Nodes in the Neck from Papillary Thyroid Carcinoma with Percutaneous Laser Ablation	*Cardiovascular and Interventional Radiology*	2016
Radiofrequency Ablation for Cervical Metastatic Lymph Nodes in Children and Adolescents With Papillary Thyroid Carcinoma: A Preliminary Study	*Frontiers in Endocrinology*	2021
Radiofrequency ablation and percutaneous ethanol injection treatment for recurrent local and distant well-differentiated thyroid carcinoma	*Annals of Surgery*	2006
Percutaneous Laser Ablation of Metastatic Lymph Nodes in the Neck From Papillary Thyroid Carcinoma: Preliminary Results	*Journal of Clinical Endocrinology & Metabolism*	2013

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Table S5 Studies on thermal ablation for thyroid cancer larger than 1 cm

Publication	Journal	Published year
Ultrasonography-guided radiofrequency ablation for the treatment of T2N0M0 papillary thyroid carcinoma: a preliminary study	*International Journal of Hyperthermia*	2021
Clinical outcomes of radiofrequency ablation for solitary T1aN0M0 versus T1bN0M0 papillary thyroid carcinoma: a propensity-matched cohort study	*International Journal of Hyperthermia*	2023
Ultrasound-guided microwave ablation versus surgery for solitary T1bN0M0 papillary thyroid carcinoma: a prospective multicenter study	*European Radiology*	2024
Efficacy and Safety of Thermal Ablation for Solitary T1bN0M0 Papillary Thyroid Carcinoma: A Multicenter Study	*Journal of Clinical Endocrinology & Metabolism*	2021
Microwave ablation of solitary T1N0M0 papillary thyroid carcinoma: A case report	*World Journal of Clinical Cases*	2023
Comparison of ultrasound-guided radiofrequency ablation versus thyroid lobectomy for T1bN0M0 papillary thyroid carcinoma	*European Radiology*	2023
Ultrasonography-guided radiofrequency ablation *vs.* surgery for the treatment of solitary T1bN0M0 papillary thyroid carcinoma: A comparative study	*Clinical Endocrinology*	2021
Ultrasonography-guided radiofrequency ablation for solitary T1aN0M0 and T1bN0M0 papillary thyroid carcinoma: a retrospective comparative study	*European Journal of Endocrinology*	2021
Percutaneous laser ablation for treatment of locally recurrent papillary thyroid carcinoma <15 mm	*Clinical Radiology*	2016
Clinical outcomes of ultrasound-guided radiofrequency ablation for solitary T1N0M0 papillary thyroid carcinoma: A retrospective study with more than 5 years of follow-up	*Cancer*	2023
Ultrasound-Guided Radiofrequency Ablation Versus Surgical Resection for the Treatment of T1bN0M0 Papillary Thyroid Carcinoma in Different Age Groups	*Frontiers in Endocrinology*	2021
Efficacy and safety of ultrasonography-guided radiofrequency ablation for the treatment of T1bN0M0 papillary thyroid carcinoma: a retrospective study	*International Journal of Hyperthermia*	2020

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