

EM-01

### **Papillary Microcarcinoma Treatment: A Puzzled Issue in Endocrinology**

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Papillary thyroid carcinoma (PTC) constitutes more than 90% of all thyroid cancer. Papillary thyroid microcarcinoma (PTMC) is defined as PTC with a maximum diameter of 10 mm and represents more than half of newly diagnosed PTC. Most PTMCs present indolent growth and feature a favorable prognosis. The 10-year survival rates ranged from 93.5 to 97% following standard treatment. With the concept of overdiagnosis and overtreatment of PTMC and new technologies emerging, active surveillance (AS) and thermal ablation therapy were suggested as alternatives to immediate surgery for nonprogressive PTMC.

However, not all PTMCs are indolent. Some PTMCs display rapid clinical progression with tumor enlargement, lymph node metastasis, and extrathyroid extension. Clinical progression occurs in 0.4–28.8% of patients under AS. Delaying surgical intervention until the onset of clinical progression may hinder timely treatment of the disease and worsen prognosis. Therefore, early prediction and diagnosis of aggressive PTMC are important in refining treatment strategies and improving patient prognosis. We will discuss the clinical and molecular features associated with aggressive PTMC.

EM-02

### **Papillary Microcarcinoma Treatment: The View of Surgical Intervention**

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The management of papillary thyroid microcarcinoma (PTmC) continues to be a subject of considerable debate, particularly concerning the role and extent of surgical intervention. This presentation provides an analysis of current treatment strategies for PTmC, with a focus on the ongoing controversies surrounding surgical options.

After an initial overview of PTmC, including its epidemiology, diagnostic challenges, and natural history, the discussion will shift to the latest guidelines and recommendations. Special emphasis will be placed on the more conservative approaches that are gaining traction, such as active surveillance, as well as the arguments for and against immediate surgical intervention. These considerations will take into account factors such as tumor size, patient age, and the risk of disease progression.

The presentation will critically evaluate various surgical techniques, from lobectomy to total thyroidectomy, highlighting their respective benefits and potential risks. Additionally, recent advancements in surgical technology and their impact on patient outcomes will be explored.

The talk will conclude with a discussion on personalized treatment approaches, emphasizing the importance of patient-centered care in making informed decisions about PTmC management. The objective is to equip healthcare professionals with a balanced understanding of the current controversies and evidence-based strategies for the surgical treatment of thyroid papillary microcarcinoma.

EM-03

### **Papillary Microcarcinoma Treatment: The View of Active Surveillance with Ultrasonography**

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Active surveillance (AS) for micropapillary thyroid carcinoma (mPTC) has become a promising alternative to immediate surgery, addressing

concerns of overdiagnosis and overtreatment from routine ultrasounds. Research, including studies by Miyauchi in Japan, demonstrates that most mPTC cases remain stable, with less than 10% showing tumor growth and new lymph node metastases in fewer than 2% of cases. Ideal AS candidates have solitary, intrathyroidal nodules under 1 cm, with clear borders and no extrathyroidal extension or metastasis. Important patient factors include being over 60 years old, committing to regular follow-ups, and having no significant comorbidities. AS involves ultrasounds every six months for the first one to two years, then annually. Surgery is considered if the tumor significantly grows, metastatic lymph nodes appear, or there is direct tissue invasion. Patient preference, often driven by anxiety and psychological factors, also plays a crucial role. Advances in technology, like radiofrequency and laser ablation, offer minimally invasive options for managing small tumors, reducing the risks associated with thyroidectomy. AS focuses on personalized, conservative management, enhancing patient quality of life and avoiding unnecessary procedures. Successful AS requires careful patient selection, stringent follow-up protocols, and collaboration among healthcare providers. With increasing evidence supporting AS's efficacy and safety, it is set to become a fundamental part of thyroid cancer management, providing a balanced approach that prioritizes patient well-being.

EM-04

**Papillary Microcarcinoma Treatment: The View of Radiofrequency Ablation or Ethanol Injection**

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The incidence of papillary thyroid microcarcinoma (PTMC) has been steadily rising in recent years, drawing increased attention to its management. With advancements in diagnostic techniques and early detection, the focus on effective and patient-centered treatment strategies has grown significantly. Traditional surgical options, while effective, often come with concerns, especially for patients of advanced age or those at higher risk of surgical complications. Issues such as postoperative recovery time, potential side effects, and long-term quality of life have led to the exploration of less invasive alternatives.

Among these, radiofrequency ablation (RFA) has gained prominence as a promising minimally invasive approach for treating PTMC. This technique offers a targeted, tissue-sparing option that can reduce the risks associated with traditional surgery while maintaining treatment efficacy. However, despite its potential, one of the major challenges with RFA remains the limited evidence available, primarily due to the short follow-up periods in existing studies. Longer-term data are needed to fully evaluate its effectiveness, recurrence rates, and long-term outcomes. Until then, RFA remains a compelling but still evolving option in the management of PTMC.

Since the first use of ethanol to treat thyroid cysts in 1985, and the use of ultrasound (US) for ethanol ablation (EA) to deal with functional thyroid nodules in 1990, the utility of US-guided EA has sprung up in the past couple of years. EA is an alternative treatment option for locally recurrent thyroid carcinomas in patients who are at high risk of surgery or those who refuse repeated surgeries as well as RFA, depending on the operator's experience and available facilities. Even so, because there are currently only a few controlled clinical studies, evidence-based guidelines await further development in the future.