UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 6-K

REPORT OF FOREIGN PRIVATE ISSUER
PURSUANT TO RULE 13a-16 OR 15d-16
UNDER THE SECURITIES EXCHANGE ACT OF 1934

For the Month of: December 2025 (Report No. 4)

Commission File Number: 001-40753

ICECURE MEDICAL LTD.
(Translation of registrant's name into English)

7 Ha'Eshel St., PO Box 3163
Caesarea, 3079504 Israel
(Address of principal executive office)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F:

☒ Form 20-F ☐ Form 40-F

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On December 17, 2025, IceCure Medical Ltd. (the "Company") issued a press release titled "IceCure Expected to Report Record Fourth Quarter Sales in North America Driven by Recent FDA Clearance of ProSense® Cryoablation for Low-Risk Breast Cancer," a copy of which is furnished as Exhibit 99.1 with this Report of Foreign Private Issuer on Form 6-K.

The press release attached herewith as Exhibit 99.1 (excluding the second and third paragraphs thereof) is incorporated by reference into the Company's Registration Statements on Form F-3 (File Nos. 333-258660, 333-267272 and 333-290046) and Form S-8 (Registration Nos. 333-270982, 333-264578, 333-262620 and 333-281587), filed with the Securities and Exchange Commission, to be a part thereof from the date on which this Report of Foreign Private Issuer on Form 6-K is submitted, to the extent not superseded by documents or reports subsequently filed or furnished.

EXHIBIT INDEX

Exhibit No.	
99.1	Press release dated December 17, 2025 titled "IceCure Expected to Report Record Fourth Quarter Sales in North America Driven by Recent FDA Clearance of ProSense® Cryoablation for Low-Risk Breast Cancer".

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

ICECURE MEDICAL LTD.

Date: December 17, 2025

By: /s/ Eyal Shamir
Name: Eyal Shamir
Title: Chief Executive Officer

Exhibit 99.1

IceCure Expected to Report Record Fourth Quarter Sales in North America Driven by Recent FDA Clearance of ProSense® Cryoablation for Low-Risk Breast Cancer

ProSense® systems are being sold and installed at new locations across North America, including some of the most highly regarded medical institutions in the United States

CAESAREA, Israel, December 17, 2025 – IceCure Medical Ltd. (Nasdaq: ICCM) ("IceCure", "IceCure Medical" or the "Company"), developer of minimally-invasive cryoablation technology that destroys tumors by freezing as an option to surgical tumor removal, is expecting to report a significant increase in fourth quarter sales in North America compared to the same period last year. Based on currently available preliminary information, the increase in sales would represent record North American sales levels for the Company. The Company is experiencing a surge of interest for the ProSense® console and its disposable cryoprobes following the U.S. Food and Drug Administration's ("FDA") marketing authorization of ProSense® for the local treatment of low-risk breast cancer in women aged 70 and above in October 2025.

"We are highly encouraged by the strong and rapid interest from doctors and medical institutions just two months after the FDA's marketing authorization for ProSense® in low-risk breast cancer," said Eyal Shamir, IceCure's Chief Executive Officer. "We believe several factors correlated with the FDA's recent favorable decision are driving demand, such as ProSense®'s high visibility at medical conferences including hands-on training sessions, our engagement with breast-focused medical societies, the growing body of independent studies and peer reviewed data, and patient-driven demand supported by increasing media coverage and awareness of our non-surgical option."

Shad Good, Vice President of Sales North America, commented, "Our sales team is engaged with a growing number of hospitals, clinics, breast surgeons and radiologists nationwide who are evaluating ProSense® and placing orders. As expected, the FDA's marketing authorization is a major catalyst in the growth of our sales pipeline. Patients in the U.S. now have a minimally invasive option and providers want to offer this choice to their patients. We are very pleased that one of our most recent orders is from a hospital network that is ranked one of the top in the world, with multiple locations in the U.S. We believe orders from these kinds of highly influential institutions may further drive demand from the broader market."

IceCure plans to report preliminary top-line revenue results in January 2026 followed by its full annual report on Form 20-F in April 2026.

ProSense® for the treatment of low-risk breast cancer is featured in a growing number of mainstream media outlets, women's magazines, healthcare industry trade publications, and consumer healthcare news including: Essense, Cancer Health, Authority Magazine, Arizona Family, Fierce Biotech, Medscape, KFF Health News, MedPage Today, and Medical Device Network.

About ProSense®

The ProSense® Cryoablation System is the first and only medical device to receive FDA marketing authorization for the local treatment of low-risk breast cancer with adjuvant endocrine therapy for women aged 70 and above, including patients who are not suitable for surgical alternatives for breast cancer treatment. A full list of benefits and risks can be found on the Company's website.

ProSense® is a minimally invasive cryosurgical tool that provides the option to destroy tumors by freezing them. The system uniquely harnesses the power of liquid nitrogen to create large lethal zones for maximum efficacy in tumor destruction in benign and cancerous lesions, including in the breast, kidney, lung, and liver.

ProSense® enhances patient and provider value by accelerating recovery, reducing pain, surgical risks, and complications. With its easy, transportable design and liquid nitrogen utilization, ProSense® opens the door to fast and convenient office-based procedures for breast tumors.

About IceCure Medical

IceCure Medical (Nasdaq: ICCM) develops and markets advanced liquid-nitrogen-based cryoablation therapy systems for the destruction of tumors (benign and cancerous) by freezing, with the primary focus areas being breast, kidney, bone and lung cancer. Its minimally invasive technology is a safe and effective option to surgical tumor removal that is easily performed in a relatively short procedure. The Company's flagship ProSense® system is marketed and sold worldwide for the indications cleared and approved to date including in the U.S., Europe, and Asia.

Forward Looking Statement

This press release contains forward-looking statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995 and other Federal securities laws. Words such as "expects," "anticipates," "intends," "plans," "believes," "seeks," "estimates" and similar expressions or variations of such words are intended to identify forward-looking statements. For example, IceCure is using forward looking statements in this press release when it discusses: its expectation of a significant increase in fourth quarter North American sales; its belief that such increases would represent record sales levels for the Company; anticipated continued demand for the ProSense® system following FDA marketing authorization; its belief that various factors are driving and will continue to drive adoption; the growth of its U.S. sales pipeline; and its belief that orders from highly influential hospital networks may further drive broader market demand. Historical results of scientific research and clinical and preclinical trials do not guarantee that the conclusions of future research or trials will suggest identical or even similar conclusions. Important factors that could cause actual results, developments and business decisions to differ materially from those anticipated in these forward-looking statements include, among others: the Company's planned level of revenues and capital expenditures; the Company's available cash and its ability to obtain additional funding; the Company's ability to market and sell its products; legal and regulatory developments in the United States and other countries; the Company's ability to maintain its relationships with suppliers, distributors and other partners; the Company's ability to maintain or protect the validity of its patents and other intellectual property; the Company's ability to expose and educate medical professionals about its products; political, economic and military instability in the Middle East, specifically in Israel; as well as those factors set forth in the Risk Factors section of the Company's Annual Report on Form 20-F for the year ended December 31, 2024 filed with the SEC on March 27, 2025, and other documents filed with or furnished to the SEC which are available on the SEC's website, www.sec.gov. The Company undertakes no obligation to update these statements for revisions or changes after the date of this release, except as required by law.

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