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: June 2025

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

CONTENTS

On June 9, 2025, IceCure Medical Ltd. (the "Company") issued a press release titled "IceCure Receives Notice of Patent Allowance in U.S. for a Novel Cryogen Flow Control to Optimize Patient Outcomes," a copy of which is furnished as Exhibit 99.1 with this Report of Foreign Private Issuer on Form 6-K.

The first and third paragraphs of the press release attached herewith as Exhibit 99.1 is incorporated by reference into the Company's Registration Statements on Form F-3 (Registration Nos. 333-258660 and 333-267272) 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a part thereof from the date on which this Report of Foreign Private Issuer on Form 6-K is submitted, to the extent not superseded by documents or reports subsequently filed or furnished.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 June 9, 2025 titled "IceCure Receives Notice of Patent Allowance in U.S. for a Novel Cryogen Flow Control to Optimize Patient Outcomes"

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: June 9, 2025

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

Exhibit 99.1

IceCure Receives Notice of Patent Allowance in U.S. for a Novel Cryogen Flow Control to Optimize Patient Outcomes

IceCure has 20+ patents in the U.S. and the Company anticipates further market traction upon FDA's marketing authorization decision in early-stage breast cancer

CAESAREA, Israel, June 9, 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 alternative to surgical tumor removal, today announced it has received a Notice of Allowance from the United States Patent and Trademark Office for its patent application titled "Cryogen Flow Control". Once granted, the patent will be in effect until 2045. A patent has already been granted for this invention in Japan and is pending approval in European Union and other major markets.

"This invention is designed to further improve cryoablation's efficiency and to expand the number of indications we can deliver in the future," stated Eyal Shamir, IceCure's Chief Executive Officer. "As we await the U.S. Food and Drug Administration's ("FDA") decision on marketing approval for ProSense® in early-stage breast cancer when combined with adjuvant endocrine therapy for women aged 70 and over, expanding our intellectual property assets around our platform cryoablation technology is more important than ever. We believe IceCure is the global leader in liquid nitrogen-based cryoablation technology as we continue to innovate and roll out our systems commercially."

Precise temperature control is crucial for efficacy and tissue safety in cryoablation procedures. Cryogenic flow control, as covered in this patent, achieves this by utilizing sensor data to regulate the flow of cryogens, ensuring the desired temperature is reached and maintained at the distal tip of catheters and probes. This optimized cryogenic delivery enhances treatment effectiveness in cryoablation procedures. Advanced cryogen flow control systems may also offer functionalities, such as navigation and mapping support within the patient's anatomy, and be incorporated into a wide range of cryosurgical tools.

About ProSense®

The ProSense® Cryoablation System provides a minimally invasive treatment 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 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 that 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 alternative to hospital 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 Statements

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: the prospective grant of its patent application titled "Cryogen Flow Control"; the prospective effective period of the prospective patent should it be granted; the purposes of the underlying invention; the FDA's prospective decision on marketing approval for ProSense in early-stage breast cancer; the belief that the Company is the global leader in liquid nitrogen-based cryoablation technology; and the potential benefits and uses of advanced cryogen flow control systems. 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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