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When Patients Decline Cholecystectomy: Characteristics, Motivations, and 12-Month Outcomes After Organ-Preserving Gallstone Extraction

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Abstract

Background

Cholecystectomy is the standard of care for symptomatic cholelithiasis. However, a subset of surgical candidates declines the operation, most often citing a preference for organ preservation. The characteristics, motivations, and clinical outcomes of patients who seek gallbladder-preserving alternatives are poorly described, leaving gastroenterologists and surgeons with limited data to counsel.

Aims

To characterize self-referred surgical candidates with symptomatic cholelithiasis seeking organ-preserving gallstone removal and report 12-month clinical outcomes among treated patients.

Methods

This single-center retrospective study included self-referred patients who completed consultation for elective Gallstone Organ-Sparing Cholangioscopy and Percutaneous Extraction (GO-SCOPE) between January 2024 and May 2026. All patients were evaluated by a board-certified surgeon and deemed cholecystectomy candidates. Patient demographics, motivations, and clinical outcomes were analyzed.

Results

Among 216 patients who completed consultation, 120 (55.6%) underwent GO-SCOPE, 89 (41.2%) elected conservative management, and 7 (3.2%) elected cholecystectomy. All were deemed surgical candidates, and 97.7% cited organ preservation as their reason for declining cholecystectomy. Median symptom duration before consultation was 24 months (IQR 12–48). Patients originated from 39 U.S. states and 8 countries, and consultation volume increased 46% during the study period ($p = 0.002$). Among treated patients with 12-month follow-up, 92.3% reported symptom resolution or sustained improvement. 30-day adverse events occurred in 16 patients (13.3%), with no intensive care admission or surgical intervention, and 36 patients (30.0%) required an additional cholangioscopy session to complete stone removal. Asymptomatic recurrent gallstones were identified in 10.3% of patients, and no patient developed cholecystitis or cholangitis.

Conclusions

A growing, geographically diverse population actively seeks alternatives to cholecystectomy. Durable 12-month symptom relief following GO-SCOPE suggests that awareness of gallbladder-preserving stone extraction techniques may facilitate shared decision-making for patients who decline surgery.

Introduction

Symptomatic cholelithiasis is one of the most prevalent gastrointestinal disorders prompting surgical referral in the United States, for which laparoscopic cholecystectomy is the standard of care [1, 2]. For most patients, cholecystectomy is well-tolerated and provides durable symptom relief [2]. A subset of patients, however, declines the operation, citing a preference for organ preservation, fear of surgical or anesthetic complications, concern about post-cholecystectomy symptoms, or desire to exhaust alternatives before permanent organ removal [3, 4]. In prior survey data, up to 56% of patients advised to undergo the surgery for symptomatic cholelithiasis, but declined cited risk of surgery or anesthesia [4]. Alternatives for conservatively managed symptomatic cholelithiasis like medical dissolution with ursodiol or watchful observation with dietary modification are well-described but do not provide definitive stone clearance [2]. Consequently, gastroenterologists and surgeons are faced with a practical question: what options exist for patients with symptomatic cholelithiasis who are unwilling to undergo cholecystectomy?

Percutaneous cholangioscopy has emerged as a minimally invasive technique for direct endoscopic visualization and removal of gallstones in patients with surgical comorbidities [5]. More recently, Gallstone Organ-Sparing Cholangioscopy and Percutaneous Extraction (GO-SCOPE) has extended this approach as a percutaneous, image-guided technique for direct visualization and removal of stones with preservation of the gallbladder [6]. Initially used in poor surgical candidates with acute cholecystitis who would not be appropriate for cholecystectomy, GO-SCOPE has been progressively offered at the authors' institution as an elective option to surgical candidates with symptomatic cholelithiasis who decline surgery [5, 6, 7]. Technical and procedural outcomes in this elective population have been published previously [6].

This article focuses on a distinct and previously unreported question: who are the surgically eligible patients with symptomatic cholelithiasis seeking organ-preserving alternatives to cholecystectomy, what motivates their treatment decisions, and how frequently are they pursuing such options? Characterizing the demand side of this clinical pathway is relevant to gastroenterologists and surgeons whose patients ask whether options beyond cholecystectomy exist. 12-month clinical outcomes have been integrated to contextualize the durability and safety of this pathway among treated patients.

Methods

This IRB-approved, single-center retrospective study included all self-referred patients who completed an initial consultation with a board-certified, fellowship-trained interventional radiologist for elective GO-SCOPE between January 2024 and May 2026. All patients were independently self-referred through internet searches or educational materials and contacted the interventional radiologist's office directly. Per institutional protocol, all patients were also evaluated by a board-certified surgeon for cholecystectomy eligibility [6]. Pre-procedural counseling entailed the established role of cholecystectomy as the standard of care, relative risks and benefits of GO-SCOPE and cholecystectomy,

possibility of stone recurrence following GO-SCOPE, and physiologic role of the gallbladder [6]. Patients with acute cholecystitis, indwelling cholecystostomy tubes, or any non-elective indication were excluded [6]. The GO-SCOPE technique, including percutaneous gallbladder access, tract dilation, cholangioscopy-assisted lithotripsy, and drain management, has been described in detail previously and was not modified for treated patients in this cohort [6].

Patient status at data lock (May 31, 2026) was categorized as completed procedure, scheduled procedure, or declined/undecided. Baseline demographics, patient-reported symptom duration, stated motivation for declining cholecystectomy, referral geography, and treatment uptake were analyzed. Clinical outcomes analyzed among treated patients included single-session technical success, defined as removal of all visualized gallstones, need for additional cholangioscopy sessions, time to cholecystostomy tube removal, 30-day post-procedural adverse events, and 12-month symptom status and follow-up imaging findings [6]. Geographic distribution was assessed by state and country of residence. Temporal trends in consultation volume were evaluated using linear regression. Wilson 95% confidence intervals are reported for proportions. 30-day adverse events were classified according to the Society of Interventional Radiology adverse event criteria [8].

Results

Cohort Characteristics

Between January 1, 2024, and May 31, 2026, 216 total self-referred patients completed consultation for GO-SCOPE. Of these, 120 (55.6%) underwent GO-SCOPE, 89 (41.2%) elected conservative medical dissolution or dietary changes, and 7 (3.2%) elected to pursue cholecystectomy.

Among treated patients, 78 (65.0%) were female and 42 (35.0%) were male, and mean age was 45.6 ± 11.8 years. Median reported symptom duration before consultation was 24 months (IQR 12–48). All patients were determined to be appropriate surgical candidates for cholecystectomy by a board-certified surgeon. Organ preservation was cited as the primary reason for declining surgery by 211 of 216 patients (97.7%).

Geographic Distribution

Self-referrals originated from 39 U.S. states and 8 countries (Canada, China, Germany, India, Luxembourg, Malaysia, Spain, and the United Kingdom) (Fig. 1). Of the 216 consultations, 162 (75.0%) originated outside the authors' local catchment area.

Temporal Trends

Consultation volume increased from a mean of 6.8 patients per month during the program's first 12 months to 9.9 per month during the most recent 12 months, a 46% increase ($p = 0.002$) (Fig. 1).

12-Month Clinical Outcomes

Detailed 12-month clinical outcomes of this treated cohort are reported separately [6]. Single-session technical success, defined as removal of all visualized gallstones, was achieved in 91.7% of patients. 36 patients (30.0%) required an additional cholangioscopy session to complete stone removal. Mean time to cholecystostomy tube removal was 24.5 days. 30-day adverse events occurred in 16 patients (13.3%, 95% CI 8.4–20.6%). Per [X] criteria, 7 patients experienced severe adverse events (4 abscesses, 2 episodes of post-procedural pancreatitis, and 1 bacteremia), and 9 patients experienced moderate adverse events (7 tube dislodgements and 2 episodes of cellulitis) [8]. All adverse events resolved without permanent sequelae, and no patient required intensive care admission or surgical intervention. Among patients with available 12-month follow-up (n = 39), 92.3% reported resolution or substantial improvement of biliary colic symptoms. On 12-month surveillance imaging, asymptomatic recurrent gallstones were identified in 4 patients (10.3%, 95% CI 4.1–23.6%), with recurrent stone diameters of 3, 5, 8, 8 mm (mean 6 mm), and biliary sludge in 2 patients (5.1%, 95% CI 1.4–16.9%). No patient developed cholecystitis or cholangitis during follow-up.

Discussion

This study illustrates a substantial, and previously undescribed, patient population with symptomatic cholelithiasis who actively seek alternatives to cholecystectomy despite being surgical candidates.

Several findings are clinically relevant to gastroenterology and surgical practices. First, the patient population is geographically diverse. Patients self-referred from 39 U.S. states and 8 countries, with three-quarters originating outside the authors' local catchment area (Fig. 1). Interest in cholecystectomy alternatives does not appear limited to a single region and may reflect a broader patient preference not captured within traditional referral pathways. Second, the prolonged median symptom duration of 2 years suggests that a meaningful subset of patients occupies a therapeutic gap between conservative management and cholecystectomy. This indicates that patients may remain symptomatic for years not because symptoms are adequately controlled, but because available treatment options are perceived as unacceptable. Third, consultation volume increased by 46% during the study period. Although drivers of this growth cannot be determined from the present study, patients are increasingly seeking organ-preserving options independently and presenting to gastroenterology and surgery clinics with questions about them. Lastly, treatment uptake was informative, with 55.6% of patients proceeding to undergo GO-SCOPE, while 41.2% elected conservative management, and a small minority opted for cholecystectomy. This distribution suggests that consultation served a shared decision-making function, where a structured discussion of alternatives did not uniformly channel patients toward one intervention.

The 12-month clinical outcomes provide preliminary evidence that patient motivations driving this demand can be supported by durable symptom relief. 92.3% of treated patients reported resolution or sustained improvement of symptoms at 12 months, which is comparable to reported outcomes after laparoscopic cholecystectomy (92%) and higher than those reported for percutaneous cholecystostomy alone, where symptoms have been found to recur in up to 23% [6, 9, 10]. While cholecystectomy definitively prevents stone recurrence, GO-SCOPE achieved single-session stone clearance in 91.7% of

patients, with 30.0% requiring an additional cholangioscopy session. Adverse events occurred in 16 patients (13.3%), including major events in 7 (5.8%), with no intensive care admissions or surgical intervention, supporting the feasibility of this pathway in surgically eligible patients [8]. On 12-month surveillance imaging, asymptomatic stone recurrence occurred in 10.3% of patients, with all stones measuring 8 mm or less. These findings underscore the limitations of a gallbladder-preserving approach and reinforce the importance of counseling patients that stone recurrence and repeat intervention remain possible [6]. Furthermore, cholecystectomy can still be performed after GO-SCOPE should it be clinically indicated [6].

This study is not intended to challenge the role of cholecystectomy, which remains the standard of care for symptomatic cholelithiasis, and is explained as such to patients seeking GO-SCOPE during every consultation [2]. Rather, it highlights a patient population that declines surgery but actively seeks alternatives when nonoperative options, like medical dissolution therapy and watchful waiting, fall short [2]. Image-guided percutaneous cholangioscopy, now supported by outcome data in surgical candidates, offers gastroenterologists and surgeons an evidence-based answer to a question patients are already asking [6]. For these patients, awareness that organ-preserving gallstone removal techniques like GO-SCOPE exist, along with its relative risk and benefits, may facilitate more informed shared decision-making.

Limitations of this study include the retrospective, single-center design in a single procedural program. The self-referred cohort may not represent the broader population with symptomatic cholelithiasis, and patient motivation to avoid surgery may introduce reporting bias. Patient-reported symptom duration and motivations are subject to recall bias. Consultation behavior outside the study institution was not captured, limiting estimation of the true size of the population. Longer-term follow-up was available for only a subset of treated patients [6]. Durability beyond 12 months, like late symptom recurrence and stone clearance, cannot be assessed from the present data, and prospective evaluation is ongoing [6]. Finally, these results reflect the experience of a single high-volume interventional radiologist and endourologist, limiting generalizability to other operators and practice settings [6].

In conclusion, a substantial, geographically dispersed, and growing patient population with symptomatic cholelithiasis actively seeks alternatives to cholecystectomy despite being surgical candidates. The median symptom duration of 24 months indicates that many patients remain in a therapeutic gap between observation and surgery when no acceptable organ-preserving option exists. Durable 12-month symptom relief with an acceptable safety profile following GO-SCOPE demonstrates that this preference can be accommodated in select patients. Awareness of gallbladder-preserving stone removal may expand shared decision-making options for patients who decline cholecystectomy.

Declarations

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Competing Interests: John Smirniotopoulos has provided lectures and instructions at Avanos Medical and is a consultant at Boston Scientific. The remaining authors have no competing interests to declare that are relevant to the content of this article.

Ethics Approval and Consent to Participate: This retrospective study involving human participants was in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Due to the retrospective nature of this study, consent was waived. The MedStar Health Research Institute Institutional Review Board (IRB) approved this study (STUDY00004697).

Data Availability: The data that support the findings of this study are not openly available due to reasons of patient privacy and are available from the corresponding author upon reasonable request.

Consent for Publication: Not applicable

Prior Publication Statement: Technical and clinical outcomes of the treated cohort were previously published (Smirniotopoulos et al., J Vasc Interv Radiol 2026). The consultation cohort analysis, patient motivations, and geographic and temporal trend data presented in this report have not been published previously.

Author Contribution

All authors contributed to the study conception and design. Material preparation, data collection, and analysis were performed by all authors. The first draft of the manuscript was written by John Smirniotopoulos, Emily Kim, and Hernoor Athwal. All authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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Figures

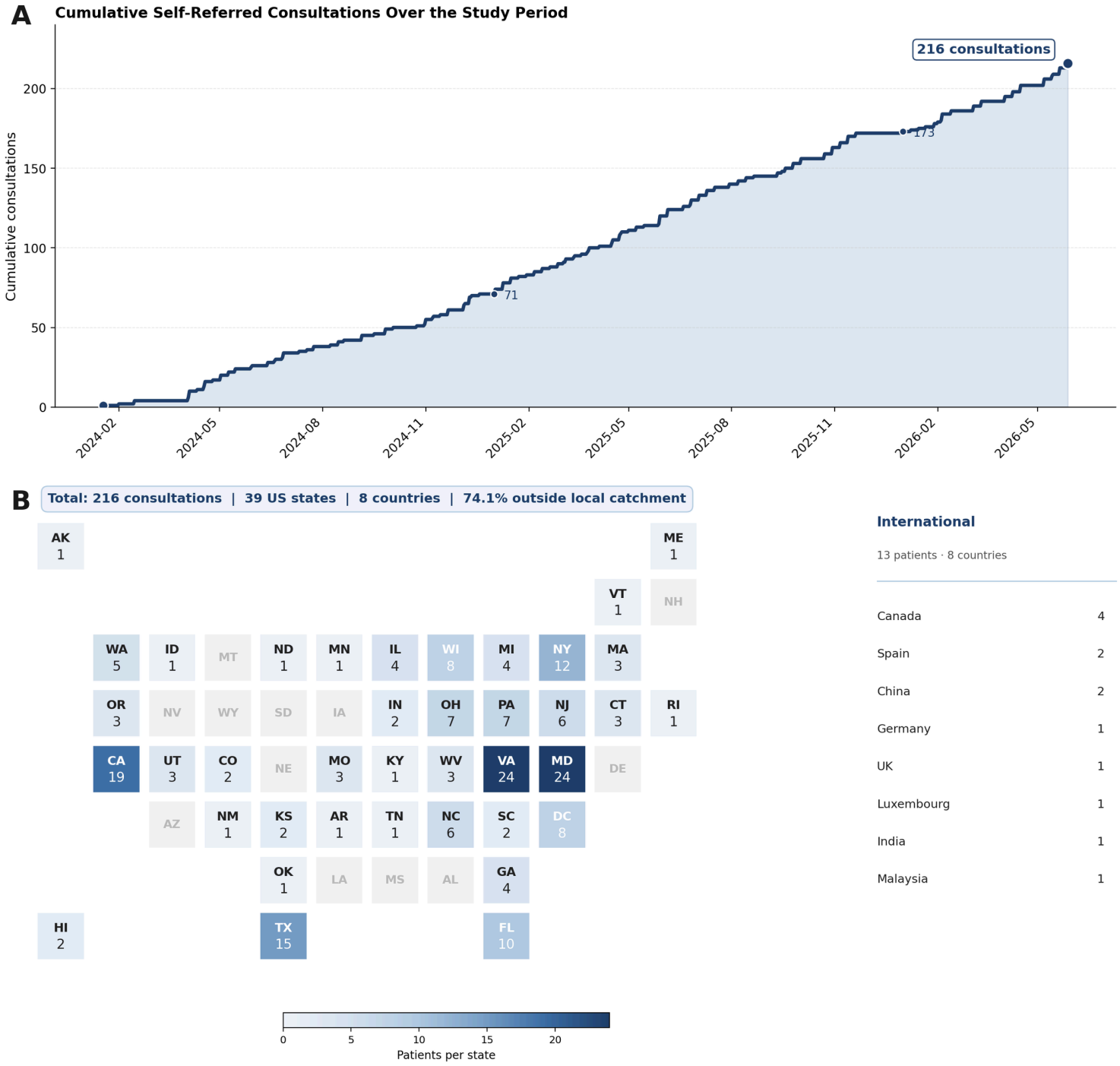


Figure 1

Growth and geographic distribution of self-referred patients seeking organ-preserving stone removal.

(A) Cumulative consultation volume among self-referred patients completing consultation for Gallstone Organ-Sparing Cholangioscopy and Percutaneous Extraction (GO-SCOPE) between January 2024 and May 2026.

(B) Geographic distribution of 216 self-referred consultations. U.S. states are displayed in a tile-grid map and shaded according to the number of consultations originating from each state. States without

consultations are shown in outline only. The accompanying international panel displays the non-U.S. countries represented in the cohort.