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Predictors of a need for cholangioscopy-guided electrohydraulic lithotripsy in the management of difficult common bile duct stones

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We would like to thank Koji Takahashi for the thoughtful and constructive comments [1] on our recently published study evaluating predictors for cholangioscopy-guided electrohydraulic lithotripsy (CG-EHL) in the management of difficult bile duct stones (DBS) [2].

First, we agree that stone size and impaction are established predictors of conventional technique failure, as demonstrated by Garg *et al* [3]. In our study [2], DBS were defined as stones >1.5 cm and/or impacted, consistent with validated criteria. Beyond confirming their relevance, our analysis identified DBS as statistically significant predictors of CG-EHL prioritization across all models. These findings support the view that stone size and impaction are central determinants in decision-making for EHL.

Second, the structure of our classification tree reflects this hierarchy. The initial split prioritizes DBS over other anatomical factors, such as papillary size or stone wedging (Fig. 1,2 in our study [2]), thereby supporting simplified clinical decision-making. Ridge regression further confirmed the predominant influence of DBS compared with lower-level predictors. Collectively, these findings reinforce the central role of DBS in guiding CG-EHL selection (Fig. 3).

Third, regarding cost considerations, our study does not advocate indiscriminate first-line use of EHL, but rather supports its earlier positioning in the therapeutic algorithm for appropriately selected patients. Conventional techniques should remain the initial approach given their established efficacy and lower immediate costs. However, when predictors suggest a high likelihood of failure with standard methods, early EHL may reduce repeat endoscopic retrograde cholangiopancreatography procedures, prolonged hospitalization, and cumulative adverse events.

Finally, no statistically significant differences were observed in adverse events or length of hospital stay. We agree that multicenter validation and formal cost-effectiveness analyses would further substantiate this approach and look forward to future studies addressing these important considerations.

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