

THE CLINICAL IMPACT OF COVID-19 DELAYS ON PLASTIC BILIARY STENT REMOVAL IN NOVA SCOTIA

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Background: The COVID-2019 pandemic continues to restrict access to endoscopy, resulting in delays or cancellation of non-urgent endoscopic procedures. A delay in the removal or exchange of plastic biliary stents may lead to stent occlusion with consensus recommendation of stent removal or exchange at three-month intervals [1-4]. We postulated that delayed plastic biliary stent removal (DPBSR) would increase complication rates.

Aims: We aim to report our single-centre experience with complications arising from DPBSR.

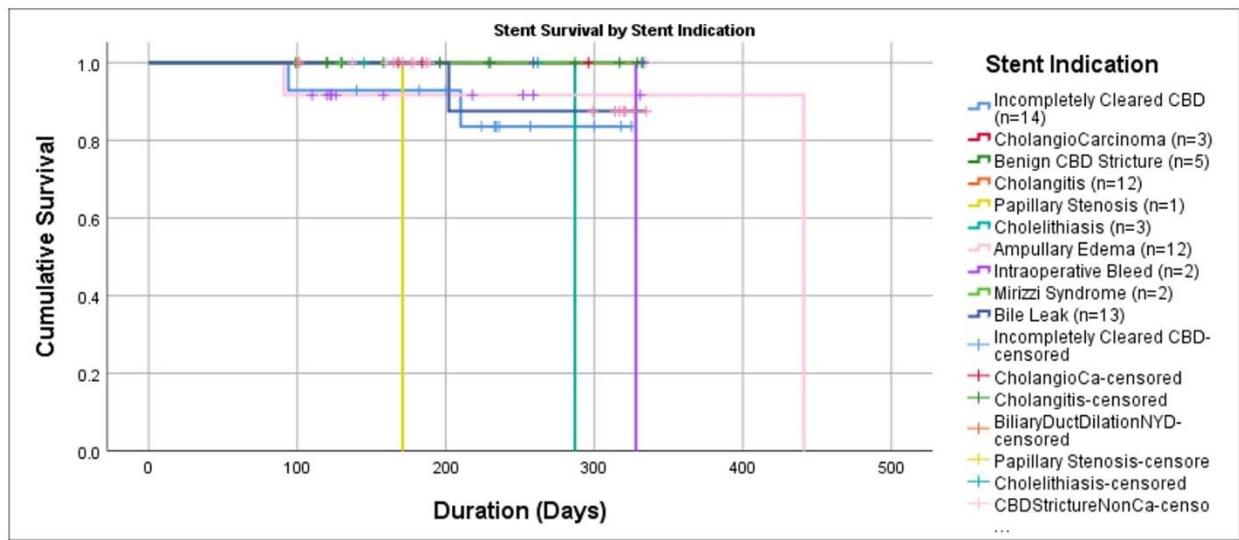
Methods: This was a retrospective, single-center, observational cohort study. All subjects who had ERCP-guided plastic biliary stent placement in Halifax, Nova Scotia between Dec 2019 and June 2020 were included in the study. DPBSR was defined as stent removal ≥ 90 days from insertion. Four endpoints were assigned to patients: 1. Stent removed endoscopically, 2. Died with stent in-situ (measured from stent placement to documented date of death/last clinical encounter before death), 3. Pending removal (subjects clinically well, no liver enzyme elevation, not expired, endpoint 1 Nov 2020), and 4. Complication requiring urgent reintervention. Kaplan-Meier survival analysis was used to represent duration of stent patency (*Fig. 1*).

Results: 102 (47.2%) had plastic biliary stents placed between 2/12/2019 and 29/6/2020. 49 (48%) were female, and the median age was 68 (R 16-91). Median follow-up was 167.5 days, 60 (58.8%) subjects had stent removal, 12 (11.8%) died before replacement, 21 (20.6%) were awaiting stent removal with no complications (median 230d, R 30-332), 9 (8.8%) had complications requiring urgent ERCP. Based on death reports, no deaths were related to stent-related complications.

72(70.6%) of patients had stents in-situ for ≥ 90 days. In this population, median time to removal was 211.5d (R 91-441d). 3 (4.2%) subjects had stent-related complications requiring urgent ERCP, mean time to complication was 218.3d (R 94-441). Stent removal ≥ 90 days was not associated with complications such as occlusion, cholangitis, and migration ($p=1.0$). Days of stent in-situ was not associated with occlusion, cholangitis, and migration ($p=0.57$). Sex ($p=0.275$), cholecystectomy

(p=1.0), cholangiocarcinoma (p=1.0), cholangitis (p=0.68) or pancreatitis (p=1.0) six weeks prior to ERCP, benign vs. malignant etiology (p=1.0) were not significantly associated with stent-related complications.

Conclusions: Plastic biliary stent longevity may have been previously underestimated. The findings of this study agree with CAG framework recommendations [5] that stent removal be prioritized as elective (P3). Limitations include small sample size that could affect Kaplan-Meier survival analysis. Despite prolonged indwelling stent time as a result of COVID-19, we did not observe an increased incidence of stent occlusion or other complications.



Excluded: Biliary Ductal Dilatation NYD (n=1), Extrinsic compression from NET (n=1), extrinsic compression from lymphoma (n=1), Supraampullary fistula (n=1), PSC (n=1)

Figure 1: Kaplan-Meier Survival Analysis by stent indication.

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