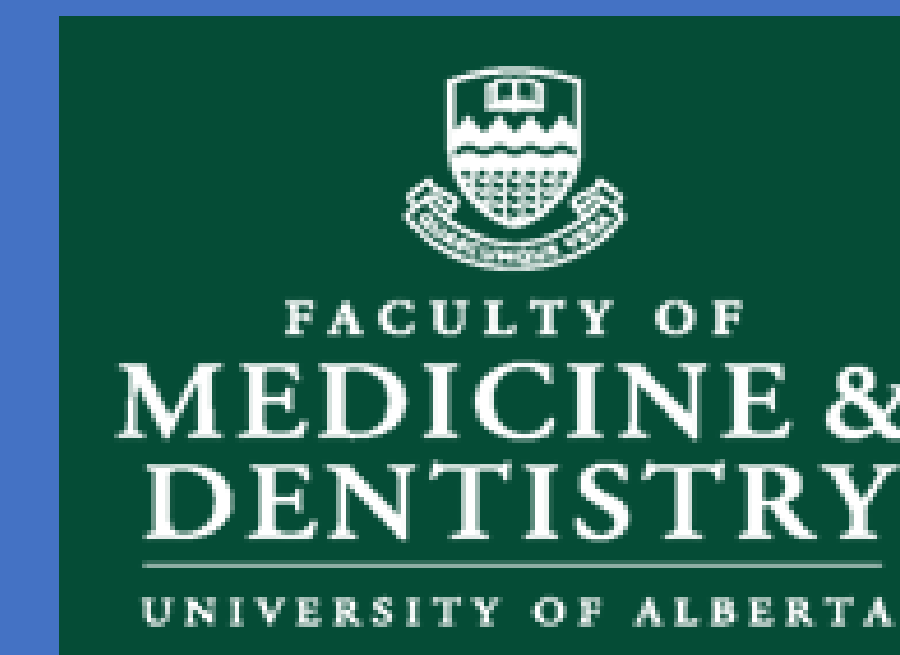




Optimizing the Indications for Biliary Stent Placement in Patients With CBD Stones: A Quality Improvement initiative to Improve Patient Care and Reduce Healthcare Resource Utilization



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BACKGROUND

- A retrospective chart audit was performed to review biliary stent utilization from January 2020 – January 2021 at the University of Alberta Hospital (UAH).
- 16% of patients with common bile duct (CBD) stones presenting for endoscopic retrograde cholangiopancreatography (ERCP) were found to have had stents inserted not as per ESGE guidelines.
- To improve this clinical practice, a quality improvement (QI) initiative was developed and completed.

AIM

- To effectively align indications of biliary stent insertion in patients with CBD stones as per published guidelines (European Society of Gastrointestinal Endoscopy – ESGE).

METHODS

- The results of the chart audit (pre-intervention – Group I) were shared with the ERCP group.
- The QI intervention was to align biliary stent insertion with published ESGE guidelines.
- A chart audit (post-intervention – Group II) was then performed on all ERCPs from July 2021 – June 2022.
- The indication for biliary stent insertion was assessed by 2 blinded reviewers.

RESULTS

- 661 patients presented for ERCPs in Group II as compared to 598 in Group I.
- Overall, less stents were placed during the initial ERCP in Group II as compared to Group I (192/661 vs. 223/598, *ns*).
- During the initial ERCP, significantly less stents were placed not in accordance with guidelines in Group II compared with Group I (13/192, 7% vs. 63/223, 28%, *p*<0.0001).
- This was a 75% reduction in the overall avoidable stent placement.
- This reduction was mainly seen in the CBD subgroup, where there was an 88% reduction in avoidable stent placement in Group II when compared with Group I (8/384, 2% vs. 61/375, 16%, *p*<0.0001)
- There was no difference in the rate of adverse events observed between Group I and Group II.

	Group I	Group II	p value
Patients, n	598	661	
Total ERCPs, n	842	885	
• 1 ERCP	598	661	
• >1 ERCP	244	224	
Patients with CBD stones, n	375	384	
Total biliary stents, n			
• Initial ERCP	223	192	
• F/U ERCP	73	78	
Avoidable stents, n (%)			
• In total cohort	63/598 (11)	13/661 (2)	<0.0001
• In CBD subgroup	61/375 (16)	8/384 (2)	<0.0001
• Proportion of total stents	63/223 (28)	13/192 (7)	<0.0001

Table 1. Proportion of avoidable stents in total cohort, and in the sub-group of those with CBD stones.

RESULTS

	Group I	Group II	p value
Initial ERCP, n	598	661	
a). Metal stents			
• Total	109	87	<0.0001
• Avoidable	34	2	
b). Plastic stents			
• Total	114	103	<i>ns</i>
• Avoidable	29	11	
Follow up ERCPs, n	244	224	
a). Metal stents			
• Total	30	25	<i>ns</i>
• Avoidable	9	3	
b). Plastic stents			
• Total	43	53	<i>ns</i>
• Avoidable	7	7	

Table 2. Comparison of the proportion of avoidable metal and plastic biliary stent placement.

CONCLUSION

- Education to align practice in accordance with published guidelines has demonstrated a significant improvement in biliary stent insertion during ERCP, especially in patients with CBD stones.
- This has resulted in significant reduction in avoidable stent placements, added follow-up ERCPs, and an overall saving of healthcare resources.