

## Telemedicine Versus Face-to-Face Follow up in General Surgery: A Randomized Controlled Trial

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**Abstract :** Background: Telemedicine is a rapidly advancing field providing healthcare to patients at a distance from their treating clinician. There is a paucity of high-quality evidence detailing the safety and acceptability of telemedicine for postoperative outpatient follow-up. This randomized controlled trial - conducted prior to the COVID 19 pandemic - aimed to assess patient satisfaction and safety (as determined by readmission, reoperation and complication rates) of telephone compared to face-to-face clinic follow-up after uncomplicated general surgical procedures. Methods: Patients following uncomplicated laparoscopic appendectomy or cholecystectomy and laparoscopic or open umbilical or inguinal hernia repairs were randomized to a telephone or face-to-face outpatient clinic follow-up. Data points including patient demographics, perioperative details and postoperative outcomes (eg. wound healing complications, pain scores, unplanned readmission to hospital and return to daily activities) were compared between groups. Patients also completed a Likert patient satisfaction survey following their consultation. Results: 103 patients were recruited over a 12-month period (21 laparoscopic appendectomies, 65 laparoscopic cholecystectomies, nine open umbilical hernia repairs, six laparoscopic inguinal hernia repairs and two laparoscopic umbilical hernia repairs). Baseline patient demographics and operative interventions were the same in both groups. Patient or clinician-reported concerns on postoperative pain, use of analgesia, wound healing complications and return to daily activities at clinic follow-up were not significantly different between the two groups. Of the 58 patients randomized to the telemedicine arm, 40% reported high and 60% reported very high patient satisfaction. Telemedicine clinic mean consultation times were significantly shorter than face-to-face consultation times (telemedicine 10.3 +/- 7.2 minutes, face-to-face 19.2 +/- 23.8 minutes, p-value = 0.014). Rates of failing to attend clinic were not significantly different (telemedicine 3%, control 6%). There was no increased rate of postoperative complications in patients followed up by telemedicine compared to in-person. There were no unplanned readmissions, return to theatre, or mortalities in this study. Conclusion: Telemedicine follow-up of patients undergoing uncomplicated general surgery is safe and does not result in any missed diagnosis or higher rates of complications. Telemedicine provides high patient satisfaction and steps to implement this modality in inpatient care should be undertaken.

**Keywords :** general surgery, telemedicine, patient satisfaction, patient safety

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