



The Use of Videoconferencing for Monitoring Inpatient Post-Operative Urologic Patients



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Introduction

- The development of tablet computers and user-friendly videoconferencing applications have made telemedicine a practical tool for physicians to meet the growing demands of modern health care
- Telemedicine has been studied extensively in the ICU and the outpatient setting
- Previous studies on telerounds in postoperative urologic patients have shown high satisfaction rates
- Our study aimed to compare **post-operative outcomes** as well as patient **satisfaction scores** among patients seen in person (**Standard Care**) versus those seen via **Videoconferencing** by their surgeon in the hospital

Methods

- Prospective, randomized study of English-speaking patients undergoing inpatient urologic surgery
- Randomized to **STANDARD CARE** or **VIDEOCONFERENCING** group on day of surgery (1:1)
- Inclusion criteria
 - Patients who are 18 years or older, have English language fluency, and undergoing elective urologic surgery requiring inpatient stay
- Exclusion criteria
 - Patients under 18 years of age, unable to provide own consent, undergoing urgent/emergent urologic surgery, who do not require an inpatient post-op stay, or are anticipated to stay over the weekend
- Video-conferencing
 - Patient used iPad mini (owned by urology department)
 - Facetime or Skype was used for patient encounter
 - All patients were physically examined by urology residents or physician assistants under the supervision of the attending surgeon at the bedside or by iPad
 - Attending surgeon was prompted to evaluate the patient in person by any significant change in clinical status
- Survey regarding patient satisfaction sent to patient on day of discharge (max score 35)
- Primary outcome = 30 day complication rate
- Secondary outcomes = 30-day readmission rate, severity of complications, patient satisfaction, length of stay, number of laboratory and imaging tests ordered, and number of encounters by the attending surgeon
- Two-sample t-test was used to compare continuous variables, and chi-squared or Fisher's exact tests were used to compare categorical variables

Results

- Of the 106 patients recruited, 102 patients were included for analysis – 49 randomized to Standard Care (SC) and 53 to Videoconferencing (VC)
- Four patients excluded due to intraoperative findings that precluded inpatient admission
- Surgeries included laparoscopic partial nephrectomy (51), laparoscopic radical nephrectomy (14), robotic-assisted laparoscopic prostatectomy (8), laparoscopic nephroureterectomy (7), laparoscopic adrenalectomy (6), laparoscopic pyeloplasty (5), laparoscopic RPLND (3), robotic ureteral reimplant (2), robotic radical cystectomy (2), robotic partial cystectomy (2), robotic diverticulectomy (1), revision of uretero-ileal anastomosis (1)
- Age, gender, race, BMI, Charlson-Age Comorbidity Index, American Society of Anesthesiologist scores, surgery type, and estimated blood loss were similar between groups (Table 1)
- No statistically significant differences in 30 day overall complication rates (SC 26.5%; VC 17%, p=0.24) or readmission rates (SC 10.2%; VC 5.7%, p=0.39) (Table 1)
- Average number of laboratory tests ordered were higher in the SC group (7.2 vs 4.4, p=0.038)
- Other secondary outcomes were similar between groups (satisfaction scores, length of stay, number of imaging tests ordered, and number of surgeon/patient encounters)

Table 1

| | Standard Care (n=49) | Videoconferencing (n=53) | p-value |
|----------------------|----------------------|--------------------------|---------|
| Age, yrs [mean ± SD] | 59.2 ± 13.4 | 59.8 ± 14.4 | 0.82 |
| Gender (% male) | 73.5% | 64.2% | 0.31 |
| BMI [mean ± SD] | 30.6 ± 7.6 | 29.2 ± 6.5 | 0.35 |
| CCI | | | 0.63 |
| 0 | 12.2% | 18.9% | |
| 1 | 24.5% | 15.1% | |
| 2 | 22.4% | 26.4% | |
| 3 | 16.3% | 18.9% | |
| 4 | 16.3% | 15.1% | |
| 5 | 4.1% | 3.8% | |
| 6 | 4.1% | 0% | |
| 8 | 0% | 1.9% | |
| ASA score | | | 0.70 |
| 1 | 6.1% | 9.4% | |
| 2 | 57.1% | 60.4% | |
| 3 | 36.7% | 30.2% | |
| EBL, cc [mean ± SD] | 388.2 ± 351.0 | 342.7 ± 345.3 | 0.51 |

Table 2

| | Standard Care (n=49) | Videoconferencing (n=53) | p-value |
|--|----------------------|--------------------------|---------|
| 30-day Complication rate | 13 (26.5%) | 9 (17.0%) | 0.24 |
| 30-day Readmission rate | 5 (10.2%) | 3 (5.7%) | 0.39 |
| Clavien Grade | | | 0.45 |
| 1 | 15.4% | 22.2% | |
| 2 | 53.8% | 33.3% | |
| 3a | 15.4% | 11.1% | |
| 3b | 15.4% | 11.1% | |
| 4a | 0 | 22.2% | |
| Satisfaction score, max score 35 [mean ± SD] | 32.9 ± 3.6 | 33.1 ± 2.9 | 0.76 |
| Length of stay, days [mean ± SD] | 3.4 ± 2.9 | 2.5 ± 1.6 | .075 |
| # of lab tests [mean ± SD] | 7.2 ± 9.1 | 4.4 ± 3.6 | .038 |
| # of imaging tests [mean ± SD] | 0.63 ± 1.7 | 0.40 ± .93 | 0.38 |
| # of encounters [mean ± SD] | 3.0 ± 2.5 | 2.4 ± 1.3 | .090 |

Conclusion

- Our study demonstrates that rounds via videoconferencing is a safe alternative to bedside hospital rounds in the routine care of post-operative urologic patients. Furthermore, there was no difference in satisfaction rates between the two groups. Telerounds is a cost-effective and efficient means to managing postoperative urologic inpatients.

Disclosure

The authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities