Conquering the Cholecystectomy: Evolution of Resident Robotic Console Participation/Autonomy

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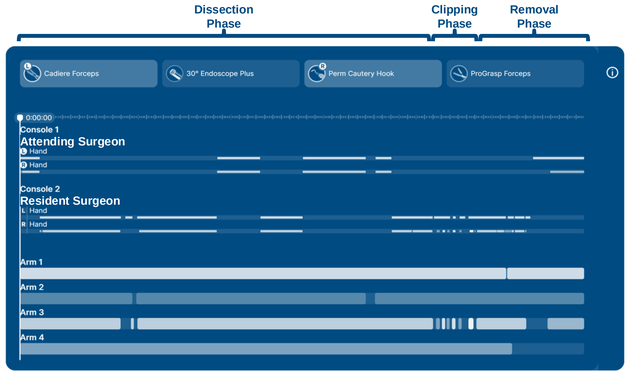
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BACKGROUND

- Widespread growth and utilization of robotic surgery[1,2]
- Extensive variability in robotics integration between residency programs with limited national standardized curricula[3,4]
- Resident autonomy/involvement in robotics cases correlates with resident console time[5,6]
- Goal: Assess involvement of general surgery residents in robotic cholecystectomies at various operative time points to delineate progressive case involvement

METHODS

- Retrospective review of robotic cholecystectomies performed since start of 2023-2024 academic year
- Metrics:
  - Total console time (TCT), Operative time in 3 phases (dissection, clipping, removal)
  - % Attending vs resident participation (TCT, phase)
  - Operative diagnosis
- Analysis: Comparison based on phase of operation, PGY, seniority (senior vs. junior), pre-op diagnosis



RESULTS & DISCUSSION

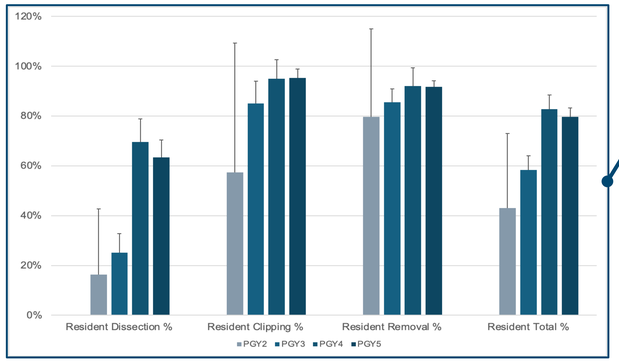


Figure 1: Resident Case Participation by Postgraduate Year

- Difference ($p<.05$) when comparing PGY
  - Dissection: $F(3,146)=26.948$
  - Clipping: $F(3,146)=5.963$
  - TCT: $F(3,146)=24.652$
- No difference in removal participation

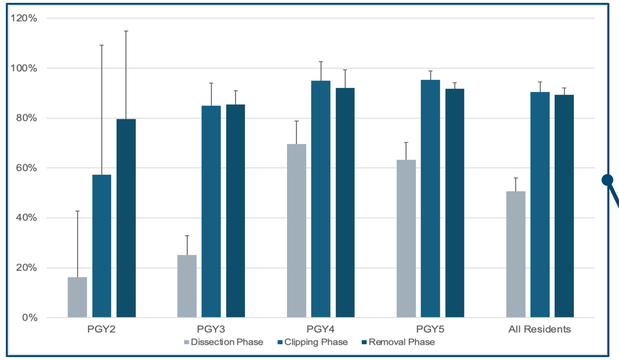


Figure 2: Comparison of Resident Participation Across Care Phases

- Difference ($p<.05$) between participation in each phase of care
  - Dissection vs Clipping (50.7% vs. 90.5%)
  - Dissection vs Removal (50.7% vs. 89.4%)
- No difference in participation between clipping and removal (90.5% vs 89.4%)



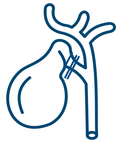
151 robotic cholecystectomies



30 minutes console time



50.7% of dissection



90.5% of clipping



89.4% of removal





- Decreased participation when diagnosis was acute cholecystitis (83.6% vs. 90.6%)
- No change with dissection, clipping, TCT

- Seniors were more involved in all phases:
  - Dissection (64.8% vs 24.1%)
  - Clipping (95.2% vs. 81.9%)
  - Removal (91.8% vs. 84.9%)
  - TCT (80.4% vs 56.6%)



Senior Residents



Junior Residents

CONCLUSIONS

- Significant variations exist in resident involvement in robotic cholecystectomies
- Understanding of resident involvement is crucial for allowing graduated operative autonomy

FUTURE WORK

- Identification of resident involvement in additional operative cases and stratification of resident involvement in varying complexity of cases

REFERENCES

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