Video coaching as an efficient teaching method for surgical residents

A Randomized Controlled Trial

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Je n’ai aucune affiliation (financière ou autre) avec une entreprise pharmaceutique, un fabricant d’appareils médicaux ou un cabinet de communication.
Surgical Skill and Complication Rates after Bariatic Surgery

Risk-Adjusted Complication Rate (%) vs. Surgical Skill Rating

P<0.001
Surgical residency has changed

- Work hour restrictions
- More research
- Awareness of patient safety
- Broad spectrum of procedures
- More complex procedures
- Less call

Less operative experience
Coaching

• Collaborative process between a coach and a trainee
• Objective and constructive feedback
• Helps the trainee identify
  ➢ What works
  ➢ What can be improved
  ➢ HOW to improve
• Maximise the trainee’s potential
Study Objectives

- **Primary**
  - Evaluate if a video-based coaching technique using a canine simulation model can efficiently enhance surgical residents’ bowel anastomosis technique

- **Secondary**
  - Evaluate resident’s satisfaction towards this type of teaching activity
  - Evaluate its feasibility
Surgical video coaching (n = 14)
- Received allocated intervention (n=14)

Control (n = 14)
- Received allocated intervention (n=14)

Lost to follow-up (n=0)

Three-week Follow-Up

Post intervention filmed anastomosis (n = 28)

Lost to follow-up (n=0)

Analysis

Pooled filmed intestinal anastomosis
Analysed by blinded surgeon (n = 56)
Video Coaching

• 30 minute sessions
• 1 on 1 with one of two teaching surgeons
  ➢ Uniform coaching technique
• Visualization of the trainee’s filmed anastomosis
• Constructive feedback
• Plastic model for demonstration
Primary Endpoint Measure

- **Objective Structured Assessment of Technical Skills (OSATS)**
  7 to 35
  - Respect of tissue
  - Efficiency of movements
  - Instrument handling
  - Knowledge of instruments
  - Use of assistant
  - Procedure flow and anticipation
  - Knowledge of the specific procedure
Table 1. Baseline characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Control group (n = 14)</th>
<th>Coaching group (n = 14)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days between baseline and post-intervention assessment (MEAN ± SD) ‡</td>
<td>19.71 ± 6.12</td>
<td>20.29 ± 4.98</td>
<td>0.7886</td>
</tr>
<tr>
<td>Baseline OSATS* score (MEAN ± SD) ‡</td>
<td>20.64 ± 5.81</td>
<td>19.21 ± 4.56</td>
<td>0.4758</td>
</tr>
<tr>
<td>Baseline OSATS Pass:Fail† (N) §</td>
<td>8:6</td>
<td>9:5</td>
<td>1.0000</td>
</tr>
<tr>
<td>PGY group allocation (N) ‖</td>
<td></td>
<td></td>
<td>0.9617</td>
</tr>
<tr>
<td>PGY 1</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PGY 2</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PGY 3</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PGY 4</td>
<td>6</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>
GROUP C (p = 0.758)

GROUP SVC (p = 0.007)
Survey

- Progression in their technical abilities
- Time efficient teaching activity
- Being filmed without the presence of a surgeon to guide them through the procedure made them learn from their mistakes
- Video coaching should be routinely used
- Average of 1 hour per week
Limitation / Conclusion

• Small sample
• Transferable to the OR?
• Only 1 evaluator
  ➢ OSATS validated for inter-rater reliability

• Effective teaching method
• Realistic time investment
• Easy and accessible
• Potential applications in CPD
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