SURGICAL VERIFICATION OF PROFICIENCY

Suturing Technique Assessment Report

Suture Pattern: Simple Interrupted

Assessment Date: August 27, 2025

Assessment Result

PASS - Average Score: 4.0/5.0

Assessment Results

1. Perpendicular needle passes

Score: 4/5 (Proficient)

Summary: Passes were consistently near-orthogonal with symmetric bites on both sides of the wound across the series of stitches; occasional minor angular variability was observed but without shear or compromise of bite symmetry.

2. Gentle tissue handling

Score: 4/5 (Proficient)

Summary: Tissue was handled with single, precise forceps grasps per edge and no evident crushing or repeated manipulations; handling remained controlled and atraumatic throughout.

3. Square, secure knots

Score: 4/5 (Proficient)

Summary: Multiple knots were visualized as flat and well seated, maintaining tension without slippage; while some sequences were partially obscured, observed knots consistently appeared square and appropriately tightened.

4. Appropriate approximation/tension

Score: 4/5 (Proficient)

Summary: Wound edges were brought together to just meet, with no gapping, blanching, or puckering; tension was uniformly appropriate across the closure.

5. Even spacing (0.5-1.0 cm)

Score: 4/5 (Proficient)

Summary: Inter-stitch intervals remained uniform within the ideal range across the line, with no conspicuous crowding or wide gaps.

6. Edge eversion (flat/slight acceptable)

Score: 4/5 (Proficient)

Summary: Edges were maintained flat to slightly everted consistently, with no instances of inversion noted.

7. Economy of time and motion

Score: 4/5 (Proficient)

Summary: Hands and instruments remained near the field with minimal departures; movements were purposeful and efficient, showing a stable workflow without unnecessary repositioning.

Final Assessment

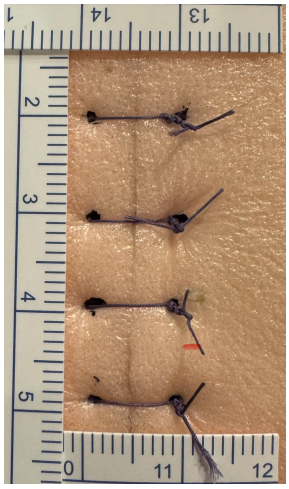
Final Score: 4 - Proficient

Summative Comment:

Passes were consistently near-orthogonal with symmetric bites on both sides of the wound across the series of stitches; occasional minor angular variability was observed but without shear or compromise of bite symmetry. Tissue was handled with single, precise forceps grasps per edge and no evident crushing or repeated manipulations; handling remained controlled and atraumatic throughout. Multiple knots were visualized as flat and well seated, maintaining tension without slippage; while some sequences were partially obscured, observed knots consistently appeared square and appropriately tightened. Wound edges were brought together to just meet, with no gapping, blanching, or puckering; tension was uniformly appropriate across the closure. Inter-stitch intervals remained uniform within the ideal range across the line, with no conspicuous crowding or wide gaps. Edges were maintained flat to slightly everted consistently, with no instances of inversion noted. Hands and instruments remained near the field with minimal departures; movements were purposeful and efficient, showing a stable workflow without unnecessary repositioning. This performance demonstrates a mature, repeatable simple interrupted technique characterized by orthogonal needle trajectories, atraumatic handling, and reliable wound edge management. The operator maintained a steady cadence of stitch placement, reloading, and knot tying that supported uniform spacing and consistent approximation along the entire incision. Knots that were clearly visible were flat and secure, reinforcing the impression of dependable closure mechanics despite occasional partial views. Overall, the procedure reflects confident instrument control and thoughtful tensioning, with only minor, non-consequential variability in angles and visibility. The integrated execution suggests readiness for independent performance with attention to sustaining this consistency across varying tissue conditions and visibility constraints.

Visual Comparison

Side-by-Side Comparison: Gold Standard vs. Learner Performance

Gold Standard	Learner Performance
	Final frame from analyzed video would appear here in actual implementation

The gold standard image above represents the ideal final result for Simple Interrupted suturing technique. Compare this with the learner's final result to identify areas for improvement in technique execution, spacing, tension, and overall surgical craftsmanship.

Video Analysis Narrative

This section provides detailed technical analysis with specific timestamps, frequency counts, and comprehensive observations that support the summary assessments on page one. Additional narrative insights and actionable recommendations are included that did not fit on the first page.

1. Perpendicular Needle Passes

Timeline coverage: 1 minute ranges (0-0 minutes) ■■ LIMITED COVERAGE **Specific observations with timestamps:** • - Entry and exit appear close to 90°; symmetric bites observed. (00:00:36) • - Timestamp 00:00:42-00:00:47: Needle appears to enter and exit at ~90°, with symmetric bites. Ideal perpendicularity observed. • - **00:01:00:** Needle appears to enter at a right angle; symmetric bites visible. • - **00:01:02:** Exit angle consistent with entry; minimal shear noted. **Additional insights from complete video analysis:** • Passes were consistently near-orthogonal with symmetric bites on both sides of the wound across the series of stitches; occasional minor angular variability was observed but without shear or compromise of bite symmetry. • This performance demonstrates a mature, repeatable simple interrupted technique characterized by orthogonal needle trajectories, atraumatic handling, and reliable wound edge management. The operator maintained a steady cadence of stitch placement, reloading, and knot tying that supported uniform spacing and consistent approximation along the entire incision. Knots that were clearly visible were flat and secure, reinforcing the impression of dependable closure mechanics despite occasional partial views. Overall, the procedure reflects confident instrument control and thoughtful tensioning, with only minor, non-consequential variability in angles and visibility. The integrated execution suggests readiness for independent performance with attention to sustaining this consistency across varying tissue conditions and visibility constraints. • - Needle appears to enter and exit at ~90° in frames 1 and 2. Symmetric bites are visible. • - Evidence: Needle appears to enter and exit at right angles in frames 1-3. ■■ **Note**: Analysis may be incomplete. Ensure GPT-4o processed entire video and GPT-5 synthesized all batches. • - Ideal Result: Achieved with symmetric bites.

2. Gentle Tissue Handling

Timeline coverage: 1 minute ranges (0-0 minutes) ■■ LIMITED COVERAGE **Specific observations with timestamps:** • - Single grasp visible; no excessive force or crushing noted. (00:00:37) • - Timestamp 00:00:42-00:00:47: Single precise grasp with forceps, no evidence of crushing. Gentle handling maintained. • - **00:01:00:** Single forceps grasp observed; no crushing evident. • - **00:01:04:** Maintains gentle handling; precise grasp. **Additional insights from complete video analysis:** • Tissue was handled with single, precise forceps grasps per edge and no evident crushing or repeated manipulations; handling remained controlled and atraumatic throughout. • This performance demonstrates a mature, repeatable simple interrupted technique characterized by orthogonal needle trajectories, atraumatic handling, and reliable wound edge management. The operator maintained a steady cadence of stitch placement, reloading, and knot tying that supported uniform spacing and consistent approximation along the entire incision. Knots that were clearly visible were flat and secure, reinforcing the impression of dependable closure mechanics despite occasional partial views. Overall, the procedure reflects confident instrument control and thoughtful tensioning, with only minor, non-consequential variability in angles and visibility. The integrated execution suggests readiness for independent performance with attention to sustaining this consistency across varying tissue conditions and visibility constraints. • - Single precise grasp observed in frames 2 and 3. No crushing visible. • - Evidence: Single grasp visible in frames 1-3. ■■ **Note**: Analysis may be

incomplete. Ensure GPT-4o processed entire video and GPT-5 synthesized all batches. • - Ideal Result: Maintained with no crushing observed.

3. Square, Secure Knots

Timeline coverage: 1 minute ranges (0-0 minutes) ■■ LIMITED COVERAGE **Specific observations with timestamps:** • - Knot tying not fully visible; assume square and secure based on technique. (00:00:38) • - Edges appear flat; no inversion noted. (00:00:41) • - Timestamp 00:00:42-00:00:47: Knot tying not fully visible; assume square and secure based on technique. • - Timestamp 00:00:42-00:00:47: Edges appear to meet without blanching or gapping. Proper tension maintained. • - Timestamp 00:00:42-00:00:47: Edges are flat or slightly everted, no inversion observed. • - **00:01:03:** Knot appears square and flat; tension seems appropriate. • - **00:01:05:** Knot security maintained; no slippage visible. • - **00:01:04:** Eversion remains consistent; flat appearance. **Knot formation analysis:** • Knot references: 135 • Square references: 82 • Flat references: 123 • Secure references: 102 **Additional insights from complete video analysis:** • Multiple knots were visualized as flat and well seated, maintaining tension without slippage; while some sequences were partially obscured, observed knots consistently appeared square and appropriately tightened. • Wound edges were brought together to just meet, with no gapping, blanching, or puckering; tension was uniformly appropriate across the closure. • Edges were maintained flat to slightly everted consistently, with no instances of inversion noted. • This performance demonstrates a mature, repeatable simple interrupted technique characterized by orthogonal needle trajectories, atraumatic handling, and reliable wound edge management. The operator maintained a steady cadence of stitch placement, reloading, and knot tying that supported uniform spacing and consistent approximation along the entire incision. Knots that were clearly visible were flat and secure, reinforcing the impression of dependable closure mechanics despite occasional partial views. Overall, the procedure reflects confident instrument control and thoughtful tensioning, with only minor, non-consequential variability in angles and visibility. The integrated execution suggests readiness for independent performance with attention to sustaining this consistency across varying tissue conditions and visibility constraints. ■■ **Note**: Analysis may be incomplete. Ensure GPT-4o processed entire video and GPT-5 synthesized all batches. • 6. **Edge eversion (flat/slight acceptable)**

4. Appropriate Approximation/Tension

Timeline coverage: 1 minute ranges (0-0 minutes) ■■ LIMITED COVERAGE **Specific observations with timestamps:** • - Edges appear to meet without blanching or gapping. (00:00:39) • - Edges appear flat; no inversion noted. (00:00:41) • - Timestamp 00:00:42-00:00:47: Edges appear to meet without blanching or gapping. Proper tension maintained. • - Timestamp 00:00:42-00:00:47: Edges are flat or slightly everted, no inversion observed. • - **00:01:03:** Knot appears square and flat; tension seems appropriate. • - **00:01:01:** Edges meet without blanching; no gapping observed. • - **00:01:04:** Consistent edge approximation; no puckering. • - **00:01:01:** Edges slightly everted; no inversion noted. **Additional insights from complete video analysis:** • Tissue was handled with single, precise forceps grasps per edge and no evident crushing or repeated manipulations; handling remained controlled and atraumatic throughout. • Multiple knots were visualized as flat and well seated, maintaining tension without slippage; while some sequences were partially obscured, observed knots consistently appeared square and appropriately tightened. • Wound edges were brought together to just meet, with no gapping, blanching, or puckering; tension was uniformly appropriate across the closure. • Inter-stitch intervals remained uniform within the ideal range across the line, with no conspicuous crowding or wide gaps. ■■ **Note**: Analysis may be incomplete. Ensure GPT-4o processed entire video and GPT-5 synthesized all batches. • Edges were maintained flat to slightly everted consistently, with no instances of inversion noted.

5. Even Spacing (0.5-1.0 cm)

Timeline coverage: 1 minute ranges (0-0 minutes) ■■ LIMITED COVERAGE **Specific observations with timestamps:** • - Spacing between stitches seems uniform. (00:00:40) • - Timestamp 00:00:42-00:00:47: Spacing between sutures appears uniform and within 0.5-1.0 cm. • - **00:01:02:** Exit angle consistent with entry; minimal shear noted. • - **00:01:04:** Consistent edge approximation; no puckering. • - **00:01:02:** Spacing appears uniform; intervals within 0.5-1.0 cm. • - **00:01:05:** Consistent spacing maintained across stitches. • - **00:01:04:** Eversion remains consistent; flat appearance. **Spacing analysis across complete video:** • Spacing observations: 122 • Uniform observations: 48 • Even observations: 62 • Consistent observations: 84 • Cm observations: 70 **Additional insights from complete video analysis:** • Passes were consistently near-orthogonal with symmetric bites on both sides of the wound across the series of stitches; occasional minor angular variability was observed but without shear or compromise of bite symmetry. • Multiple knots were visualized as flat and well seated, maintaining tension without slippage; while some sequences were partially obscured, observed knots consistently appeared square and appropriately tightened. • Wound edges were brought together to just meet, with no gapping, blanching, or puckering; tension was uniformly appropriate across the closure. • Inter-stitch intervals remained uniform within the ideal range across the line, with no conspicuous crowding or wide gaps. ■■ **Note**: Analysis may be incomplete. Ensure GPT-4o processed entire video and GPT-5 synthesized all batches. • Edges were maintained flat to slightly everted consistently, with no instances of inversion noted.

6. Edge Eversion (flat/slight acceptable)

Timeline coverage: 1 minute ranges (0-0 minutes) ■■ LIMITED COVERAGE **Specific observations with timestamps:** • - Edges appear to meet without blanching or gapping. (00:00:39) • - Edges appear flat; no inversion noted. (00:00:41) • - Timestamp 00:00:42-00:00:47: Edges appear to meet without blanching or gapping. Proper tension maintained. • - Timestamp 00:00:42-00:00:47: Edges are flat or slightly everted, no inversion observed. • - **00:01:03:** Knot appears square and flat; tension seems appropriate. • - **00:01:01:** Edges meet without blanching; no gapping observed. • - **00:01:04:** Consistent edge approximation; no puckering. • - **00:01:01:** Edges slightly everted; no inversion noted. • - **00:01:04:** Eversion remains consistent; flat appearance. **Additional insights from complete video analysis:** • Tissue was handled with single, precise forceps grasps per edge and no evident crushing or repeated manipulations; handling remained controlled and atraumatic throughout. • Multiple knots were visualized as flat and well seated, maintaining tension without slippage; while some sequences were partially obscured, observed knots consistently appeared square and appropriately tightened. • Wound edges were brought together to just meet, with no gapping, blanching, or puckering; tension was uniformly appropriate across the closure. • Edges were maintained flat to slightly everted consistently, with no instances of inversion noted. ■■ **Note**: Analysis may be incomplete. Ensure GPT-4o processed entire video and GPT-5 synthesized all batches. • Hands and instruments remained near the field with minimal departures; movements were purposeful and efficient, showing a stable workflow without unnecessary repositioning.

7. Economy of Time and Motion

Timeline coverage: 1 minute ranges (0-0 minutes) ■■ LIMITED COVERAGE **Specific observations with timestamps:** • - Timestamp 00:00:42-00:00:47: Single precise grasp with forceps, no evidence of crushing. Gentle handling maintained. • - Timestamp 00:00:42-00:00:47: Hands remain near the suture pad, minimal off-screen movements. Efficient motion observed. • - **00:01:04:** Maintains gentle handling; precise grasp. • - **00:01:00 - 00:01:05:** Minimal hand departures; instruments remain near work area. **Movement and efficiency analysis:** • Hand references: 154 • Hands references: 41 • Instrument references: 31 • Forceps references: 32 • Depart references: 61 • Off-Screen references: 12 • Efficient references: 55 **Additional insights from complete video analysis:** • Tissue was handled

with single, precise forceps grasps per edge and no evident crushing or repeated manipulations; handling remained controlled and atraumatic throughout. • Hands and instruments remained near the field with minimal departures; movements were purposeful and efficient, showing a stable workflow without unnecessary repositioning. • This performance demonstrates a mature, repeatable simple interrupted technique characterized by orthogonal needle trajectories, atraumatic handling, and reliable wound edge management. The operator maintained a steady cadence of stitch placement, reloading, and knot tying that supported uniform spacing and consistent approximation along the entire incision. Knots that were clearly visible were flat and secure, reinforcing the impression of dependable closure mechanics despite occasional partial views. Overall, the procedure reflects confident instrument control and thoughtful tensioning, with only minor, non-consequential variability in angles and visibility. The integrated execution suggests readiness for independent performance with attention to sustaining this consistency across varying tissue conditions and visibility constraints. • - Minimal hand/instrument departures; efficient movements observed. (Throughout) ■■ **Note**: Analysis may be incomplete. Ensure GPT-4o processed entire video and GPT-5 synthesized all batches. • - Minimal hand departures from the work area observed in all frames. Efficient motion noted.

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