
Supplementary Online Content

Miller D, Rivas DG, Meyer KL, et al. The impact of endoscopic linear stapling device stability in thoracic surgery: A Delphi panel approach. *JHEOR*. 2015;3(1):73-82.

Appendix. Survey Questions

This supplementary material has been provided by the authors to give readers additional information about their work.

Appendix

SURVEY 1 QUESTIONS

Demographic/Background Information

1. How many years have you practiced as a thoracic surgeon?
 - A. [Free text – numerical value]

2. In which country do you primarily practice?
 - A. [Select Country]

3. Which best describes your practice setting?
 - A. Private practice
 - B. Large academic teaching hospital
 - C. Small regional hospital
 - D. Other [Free text]

4. How many procedures do you perform per month where an endoscopic linear stapling device (such as EndoGIA or Echelon) is used?
 - A. [Free text – numerical value]

Impact of Instability

1. When using an endoscopic linear stapling device (such as an EndoGIA or Echelon), what problems could occur due to movement of the distal tip/end of the device during the firing of the device? Keep in mind that movement may occur vertically, horizontally as well as laterally.
[Check all that apply]
 - A. Unintentional tissue damage
 - B. Tearing of fragile tissue away from the staple line
 - C. Tearing of fragile tissue along the staple line
 - D. Damage of an important structure I am unable to see while firing
 - E. Increased tension on the structure or tissue I am firing on
 - F. Poor staple line quality
 - G. Other _____

2. Which of the following complications of thoracic surgery could result from too much movement of the distal tip/end of the endoscopic linear stapling device?
[Check all that apply]
 - A. Staple line oozing/bleeding controllable with clips, suture or fibrin glue
 - B. Staple line oozing that requires 15 minutes or more of additional OR time.
 - C. Bleeding that requires conversion to open
 - D. Bleeding that requires blood transfusion
 - E. Lung trauma that causes an air leak
 - F. Bronchus trauma that requires further repair
 - G. Unintentional tissue/structure damage
 - H. Tearing of fragile tissue away from the staple line
 - I. Tearing of fragile tissue along staple line
 - J. Likelihood of damaging an important structure I am unable to see while firing

- K. Tension on the structure or tissue I am firing on
- L. Other [Free text]

3. What steps do you take to mitigate potential complications related to a lack of endoscopic linear stapling device stability during thoracic surgery? [Free text]

Impact of Device Stability on Surgeon Stress/Concern

1. Do you take extra care during critical firings in thoracic surgery to minimize movement of the distal tip/end of the endoscopic linear stapling device?
[Yes / No]
2. When **training a fellow** during thoracic surgery, are you stressed/concerned with their ability to minimize movement of the distal tip/end of the endoscopic linear stapling device?
[Yes / No]
3. Do you experience stress/concern when an **assistant** fires an endoscopic linear stapling device during a robot assisted thoracic surgery procedure, where there may be increased tip motion due to more difficult positioning or due to increased difficulty firing?
[Yes / No / I do not perform robot assisted thoracic surgery procedures]
4. Do you anticipate that you would have less stress/concern if **you** were using an endoscopic linear stapling device with improved stability during critical firings in thoracic surgery?
[Yes / No]
5. Do you anticipate that you would have less stress/concern if you were **training a fellow** during thoracic surgery with an endoscopic linear stapling device that has improved stability?
[Yes / No]
6. Do you anticipate that you would have less stress/concern when an **assistant** is firing an endoscopic linear stapling device with improved stability during a robot assisted thoracic surgery procedure, where there may be increased tip motion due to more difficult positioning or due to increased difficulty firing?
[Yes / No / I do not perform robot assisted thoracic surgery procedures]

Impact of Device Stability on Specific Tissue Types

1. When working on thin critical structures (such as pulmonary artery/pulmonary vein), do you believe that the use of an endoscopic linear stapling device that provides improved stability may result in:
[Check all that apply]
 - A. Reduced unintentional tissue/structure damage
 - B. Reduced tearing of fragile tissue away from the staple line
 - C. Reduced tearing of fragile tissue along staple line
 - D. Reduced likelihood of damaging an important structure I am unable to see while firing
 - E. Reduced tension on the structure or tissue I am firing on
 - F. Reduced staple line oozing/bleeding
 - G. Reduced bleeding resulting from reduced damage to tissue/structure
 - H. Reduced lung trauma, resulting in fewer/less severe air leaks
 - I. Reduced bronchus trauma
 - J. Improved staple formation

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- K. Improved staple line quality / integrity
L. Decreased trauma to the surrounding tissue / structures
M. Other [Free text]
2. When working on thick, less critical tissue (such as lung parenchyma), do you believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in:
[Check all that apply]
- A. Reduced unintentional tissue/structure damage
 - B. Reduced tearing of fragile tissue away from the staple line
 - C. Reduced tearing of fragile tissue along staple line
 - D. Reduced likelihood of damaging an important structure I am unable to see while firing
 - E. Reduced tension on the structure or tissue I am firing on
 - F. Reduced staple line oozing/bleeding
 - G. Reduced bleeding resulting from reduced damage to tissue/structure
 - H. Reduced lung trauma, resulting in fewer/less severe air leaks
 - I. Reduced bronchus trauma
 - J. Improved staple formation
 - K. Improved staple line quality / integrity
 - L. Decreased trauma to the surrounding tissue/structures
 - M. Other [Free text]
3. When working on bronchus tissue, do you believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in:
[Check all that apply]
- A. Reduced unintentional tissue/structure damage
 - B. Reduced tearing of fragile tissue away from the staple line
 - C. Reduced tearing of fragile tissue along staple line
 - D. Reduced likelihood of damaging an important structure I am unable to see while firing
 - E. Reduced tension on the structure or tissue I am firing on
 - F. Reduced staple line oozing/bleeding
 - G. Reduced bleeding resulting from reduced damage to tissue/structure
 - H. Reduced lung trauma, resulting in fewer/less severe air leaks
 - I. Reduced bronchus trauma
 - J. Improved staple formation
 - K. Improved staple line quality / integrity
 - L. Decreased trauma to the surrounding tissue/anatomical structures
 - M. Other [Free text]
4. When working on lung tissue of poor quality (such as emphysematous tissue, tissue damaged due to radiation, chemotherapy, or inflammation), do you believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in:
[Check all that apply]
- A. Reduced unintentional tissue/structure damage
 - B. Reduced tearing of fragile tissue away from the staple line
 - C. Reduced tearing of fragile tissue along staple line
 - D. Reduced likelihood of damaging an important structure I am unable to see while firing
 - E. Reduced tension on the structure or tissue I am firing on

- F. Reduced staple line oozing/bleeding
- G. Reduced bleeding resulting from reduced damage to tissue/structure
- H. Reduced lung trauma, resulting in fewer/less severe air leaks
- I. Reduced bronchus trauma
- J. Improved staple formation
- K. Improved staple line quality / integrity
- L. Decreased trauma to the surrounding tissue/structures
- M. Other [Free text]

5. When working in tight spaces, where visualization of surrounding structures is poor, do you believe that the use of a device that provides incremental improvement in stability may result in:

[Check all that apply]

- A. Reduced unintentional tissue/structure damage
- B. Reduced tearing of fragile tissue away from the staple line
- C. Reduced tearing of fragile tissue along the staple line
- D. Reduced likelihood of damaging an important structure I am unable to see while firing
- E. Reduced tension on the structure or tissue I am firing on
- F. Reduced staple line oozing/bleeding
- G. Reduced bleeding resulting from reduced damage to tissue/structure
- H. Reduced lung trauma, resulting in fewer/less severe air leaks
- I. Reduced bronchus trauma
- J. Improved staple formation
- K. Improved staple line quality / integrity
- L. Decreased trauma to the surrounding tissue/structures
- M. Other [Free text]

Device Stability in VATS and Open Thoracic Surgery

1. Do you consider endoscopic linear stapling device stability to have more clinical importance in VATS thoracic surgery compared to open thoracic surgery?

[Yes / No]

Why? [Free text]

2. Which of the following potential issues related to VATS thoracic surgery would be less stressful/concerning when performing a surgery with an endoscopic linear stapling device that has improved stability?

[Check all that apply]

- A. Space restrictions
- B. Difficult angles
- C. Having to work adjacent to critical structures
- D. Decreased visibility
- E. Inability to take corrective action
- F. Other [Free Text]

Clinical Importance of Device Stability

1. When considering thoracic surgery in general, how clinically important do you consider endoscopic linear stapling device stability in performing your desired stapling job on a scale from 1 to 5 (with 1 being not at all clinically important and 5 being extremely clinically important)?

2. When considering open thoracic surgery, how clinically important do you consider endoscopic linear stapling device stability in performing your desired stapling job on a scale from 1 to 5 (with 1 being not at all clinically important and 5 being extremely clinically important)?
3. When considering VATS thoracic surgery, how clinically important do you consider endoscopic linear stapling device stability in performing your desired stapling job on a scale from 1 to 5 (with 1 being not at all clinically important and 5 being extremely clinically important)?

Clinical Importance of Improved Device Stability

“Device stability” or “improved” stability” is defined as decreased movement of the distal tip/end of the endoscopic linear stapling device.

1. In general, do you perceive an improvement in endoscopic linear stapling device stability in thoracic surgery would have a positive clinical effect on surgical outcomes?
[Yes / No]
2. Do you consider an improvement in endoscopic linear stapling device stability to result in the following in thoracic surgery:
[Check all that apply]
 - A. Reduced unintentional tissue/structure damage
 - B. Reduced tearing of fragile tissue away from the staple line
 - C. Reduced tearing of fragile tissue along the staple line
 - D. Reduced likelihood of damaging an important structure I am unable to see while firing
 - E. Reduced tension on the structure or tissue I am firing on
 - F. Reduced staple line oozing/bleeding
 - G. Reduced bleeding resulting from reduced damage to tissue/structure
 - H. Reduced lung trauma, resulting in fewer/less severe air leaks
 - I. Reduced bronchus trauma
 - J. Improved staple formation
 - K. Improved staple line quality / integrity
 - L. Decreased trauma to the surrounding tissue / anatomical structures
 - M. Other [Free Text]

SURVEY 2 QUESTIONS**Impact of Instability**

1.
 - A. When using an endoscopic linear stapling device (such as an EndoGIA or Echelon), unintentional tissue damage could occur due to movement of the distal tip/end of the device during the firing of the device. (keep in mind that movement may occur vertically, horizontally as well as laterally)
 - a. [Agree / Disagree]
 - B. When using an endoscopic linear stapling device (such as an EndoGIA or Echelon), tearing of fragile tissue away from the staple line could occur due to movement of the distal tip/end of the device during the firing of the device. (keep in mind that movement may occur vertically, horizontally as well as laterally)
 - a. [Agree / Disagree]
 - C. When using an endoscopic linear stapling device (such as an EndoGIA or Echelon), tearing of fragile tissue along the staple line could occur due to movement of the distal tip/end of the device during the firing of the device. (keep in mind that movement may occur vertically, horizontally as well as laterally)
 - a. [Agree / Disagree]
 - D. When using an endoscopic linear stapling device (such as an EndoGIA or Echelon), increased tension on the structure or tissue I am firing on could occur due to movement of the distal tip/end of the device during the firing of the device. (keep in mind that movement may occur vertically, horizontally as well as laterally)
 - a. [Agree / Disagree]
 - E. When using an endoscopic linear stapling device (such as an EndoGIA or Echelon), poor staple line quality could occur due to movement of the distal tip/end of the device during the firing of the device. (keep in mind that movement may occur vertically, horizontally as well as laterally)
 - a. [Agree / Disagree]
2.
 - A. Staple line oozing/bleeding controllable with clips, suture or fibrin glue could result from too much movement of the distal tip/end of the endoscopic linear stapling device during thoracic surgery.
 - a. [Agree / Disagree]
 - B. Staple line oozing that requires 15 minutes or more of additional OR time could result from too much movement of the distal tip/end of the endoscopic linear stapling device during thoracic surgery.
 - a. [Agree / Disagree]
 - C. Bleeding that requires conversion to open could result from too much movement of the distal tip/end of the endoscopic linear stapling device during thoracic surgery.
 - a. [Agree / Disagree]
 - D. Bleeding that requires a blood transfusion could result from too much movement of the distal tip/end of the endoscopic linear stapling device during thoracic surgery.
 - a. [Agree / Disagree]

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- E. Lung trauma that causes an air leak could result from too much movement of the distal tip/end of the endoscopic linear stapling device during thoracic surgery.
a. [Agree / Disagree]
- F. Bronchus trauma that requires further repair could result from too much movement of the distal tip/end of the endoscopic linear stapling device during thoracic surgery.
a. [Agree / Disagree]
- G. Unintentional tissue/structure damage could result from too much movement of the distal tip/end of the endoscopic linear stapling device during thoracic surgery.
a. [Agree / Disagree]
- H. Tearing of fragile tissue away from the staple line could result from too much movement of the distal tip/end of the endoscopic linear stapling device during thoracic surgery.
a. [Agree / Disagree]
- I. Tearing of fragile tissue along staple line could result from too much movement of the distal tip/end of the endoscopic linear stapling device during thoracic surgery.
a. [Agree / Disagree]
- J. Increased likelihood of damaging an important structure I am unable to see while firing results from too much movement of the distal tip/end of the endoscopic linear stapling device during thoracic surgery.
a. [Agree / Disagree]
- K. Tension on the structure or tissue I am firing on could result from too much movement of the distal tip/end of the endoscopic linear stapling device during thoracic surgery.
a. [Agree / Disagree]
- 3.
- A. I ask an assistant for aid in stabilizing the stapler to mitigate potential complications related to a lack of endoscopic linear stapling device stability during thoracic surgery.
a. [Agree / Disagree]
- B. I stabilize the device with a second hand at the site of entry to mitigate potential complications related to a lack of endoscopic linear stapling device stability during thoracic surgery.
a. [Agree / Disagree]
- C. I take additional care to staple slowly and stably to mitigate potential complications related to a lack of endoscopic linear stapling device stability during thoracic surgery.
a. [Agree / Disagree]
- D. I hold the stapler device more firmly/tightly when firing to mitigate potential complications related to a lack of endoscopic linear stapling device stability during thoracic surgery.
a. [Agree / Disagree]

Impact of Device Stability on Surgeon Stress/Concern

1. I take extra care during critical firings in thoracic surgery to minimize movement of the distal tip/end of the endoscopic linear stapling device.
 - a. [Agree / Disagree]
2. When I train a fellow during thoracic surgery, I am stressed/concerned with their ability to minimize movement of the distal tip/end of the endoscopic linear stapling device.
 - a. [Agree / Disagree]
3. I experience stress/concern when an assistant fires an endoscopic linear stapling device during a robot assisted thoracic surgery procedure, where there may be increased tip motion due to more difficult positioning or due to increased difficulty firing.
 - a. [Agree / Disagree / I do not perform robot assisted thoracic surgery procedures]
4. I anticipate I would have less stress/concern if I were using an endoscopic linear stapling device with improved stability during critical firings in thoracic surgery.
 - a. [Agree / Disagree]
5. I anticipate I would have less stress/concern if I were training a fellow during thoracic surgery with an endoscopic linear stapling device that has improved stability.
 - a. [Agree / Disagree]
6. I anticipate I would have less stress/concern when an assistant is firing an endoscopic linear stapling device with improved stability during a robot assisted thoracic surgery procedure, where there may be increased tip motion due to more difficult positioning or due to increased difficulty firing?
 - a. [Agree / Disagree / I do not perform robot assisted thoracic surgery procedures]

Impact of Device Stability on Specific Tissue Types

1.
 - A. When working on thin critical structures (such as pulmonary artery/pulmonary vein), I believe that the use of an endoscopic linear stapling device that provides improved stability may result in reduced unintentional tissue / structure damage.
 - a. [Agree / Disagree]
 - B. When working on thin critical structures (such as pulmonary artery/pulmonary vein), I believe that the use of an endoscopic linear stapling device that provides improved stability may result in reduced tearing of fragile tissue away from the staple line.
 - a. [Agree / Disagree]
 - C. When working on thin critical structures (such as pulmonary artery/pulmonary vein), I believe that the use of an endoscopic linear stapling device that provides improved stability may result in reduced tearing of fragile tissue along staple line.
 - a. [Agree / Disagree]
 - D. When working on thin critical structures (such as pulmonary artery/pulmonary vein), I believe that the use of an endoscopic linear stapling device that provides improved stability results in reduced likelihood of damaging an important structure I am unable to see while firing.
 - a. [Agree / Disagree]

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- E. When working on thin critical structures (such as pulmonary artery/pulmonary vein), I believe that the use of an endoscopic linear stapling device that provides improved stability may result in reduced tension on the structure or tissue I am firing on.
a. [Agree / Disagree]
- F. When working on thin critical structures (such as pulmonary artery/pulmonary vein), I believe that the use of an endoscopic linear stapling device that provides improved stability may result in reduced staple line oozing / bleeding.
a. [Agree / Disagree]
- G. When working on thin critical structures (such as pulmonary artery/pulmonary vein), I believe that the use of an endoscopic linear stapling device that provides improved stability may result in reduced bleeding resulting from reduced damage to tissue / structure.
a. [Agree / Disagree]
- H. When working on thin critical structures (such as pulmonary artery/pulmonary vein), I believe that the use of an endoscopic linear stapling device that provides improved stability may result in reduced lung trauma, resulting in fewer / less severe air leaks.
a. [Agree / Disagree]
- I. When working on thin critical structures (such as pulmonary artery/pulmonary vein), I believe that the use of an endoscopic linear stapling device that provides improved stability may result in reduced bronchus trauma.
a. [Agree / Disagree]
- J. When working on thin critical structures (such as pulmonary artery/pulmonary vein), I believe that the use of an endoscopic linear stapling device that provides improved stability may result in improved staple formation.
a. [Agree / Disagree]
- K. When working on thin critical structures (such as pulmonary artery/pulmonary vein), I believe that the use of an endoscopic linear stapling device that provides improved stability may result in improved staple line quality / integrity.
a. [Agree / Disagree]
- L. When working on thin critical structures (such as pulmonary artery/pulmonary vein), I believe that the use of an endoscopic linear stapling device that provides improved stability may result in decreased trauma to the surrounding tissue / structures.
a. [Agree / Disagree]
- 2.
- A. When working on thick, less critical tissue (such as lung parenchyma), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced unintentional tissue/structure damage.
a. [Agree / Disagree]

- B. When working on thick, less critical tissue (such as lung parenchyma), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced tearing of fragile tissue away from the staple line.
a. [Agree / Disagree]
- C. When working on thick, less critical tissue (such as lung parenchyma), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced tearing of fragile tissue along staple line.
a. [Agree / Disagree]
- D. When working on thick, less critical tissue (such as lung parenchyma), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability results in reduced likelihood of damaging an important structure I am unable to see while firing.
a. [Agree / Disagree]
- E. When working on thick, less critical tissue (such as lung parenchyma), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced tension on the structure or tissue I am firing on.
a. [Agree / Disagree]
- F. When working on thick, less critical tissue (such as lung parenchyma), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced staple line oozing / bleeding.
a. [Agree / Disagree]
- G. When working on thick, less critical tissue (such as lung parenchyma), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced bleeding resulting from reduced damage to tissue / structure.
a. [Agree / Disagree]
- H. When working on thick, less critical tissue (such as lung parenchyma), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced lung trauma, resulting in fewer / less severe air leaks.
a. [Agree / Disagree]
- I. When working on thick, less critical tissue (such as lung parenchyma), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in improved staple formation.
a. [Agree / Disagree]
- J. When working on thick, less critical tissue (such as lung parenchyma), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in improved staple line quality / integrity.
a. [Agree / Disagree]

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- K. When working on thick, less critical tissue (such as lung parenchyma), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in decreased trauma to the surrounding tissue/structures.
a. [Agree / Disagree]
- 3.
- A. When working on bronchus tissue, I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced unintentional tissues/structure damage.
a. [Agree / Disagree]
- B. When working on bronchus tissue, I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced tearing of fragile tissue away from the staple line.
a. [Agree / Disagree]
- C. When working on bronchus tissue, I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced tearing of fragile tissue along staple line.
a. [Agree / Disagree]
- D. When working on bronchus tissue, I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability results in reduced likelihood of damaging an important structure I am unable to see while firing.
a. [Agree / Disagree]
- E. When working on bronchus tissue, I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced tension on the structure or tissue I am firing on.
a. [Agree / Disagree]
- F. When working on bronchus tissue, I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced lung trauma, resulting in fewer/less severe air leaks.
a. [Agree / Disagree]
- G. When working on bronchus tissue, I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced bronchus trauma.
a. [Agree / Disagree]
- H. When working on bronchus tissue, I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in improved staple formation.
a. [Agree / Disagree]
- I. When working on bronchus tissue, I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in improved staple line quality/integrity.
a. [Agree / Disagree]

- 4.
- A. When working on lung tissue of poor quality (such as emphysematous tissue, tissue damaged due to radiation, chemotherapy, or inflammation), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced unintentional tissue/structure damage.
a. [Agree / Disagree]
- B. When working on lung tissue of poor quality (such as emphysematous tissue, tissue damaged due to radiation, chemotherapy, or inflammation), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced tearing of fragile tissue away from the staple line.
a. [Agree / Disagree]
- C. When working on lung tissue of poor quality (such as emphysematous tissue, tissue damaged due to radiation, chemotherapy, or inflammation), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced tearing of fragile tissue along staple line.
a. [Agree / Disagree]
- D. When working on lung tissue of poor quality (such as emphysematous tissue, tissue damaged due to radiation, chemotherapy, or inflammation), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability results in reduced likelihood of damaging an important structure I am unable to see while firing.
a. [Agree / Disagree]
- E. When working on lung tissue of poor quality (such as emphysematous tissue, tissue damaged due to radiation, chemotherapy, or inflammation), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced tension on the structure or tissue I am firing on.
a. [Agree / Disagree]
- F. When working on lung tissue of poor quality (such as emphysematous tissue, tissue damaged due to radiation, chemotherapy, or inflammation), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced staple line oozing / bleeding.
a. [Agree / Disagree]
- G. When working on lung tissue of poor quality (such as emphysematous tissue, tissue damaged due to radiation, chemotherapy, or inflammation), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced bleeding resulting from reduced damage to tissue/structure.
a. [Agree / Disagree]
- H. When working on lung tissue of poor quality (such as emphysematous tissue, tissue damaged due to radiation, chemotherapy, or inflammation), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced lung trauma, resulting in fewer/less severe air leaks.
a. [Agree / Disagree]

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- I. When working on lung tissue of poor quality (such as emphysematous tissue, tissue damaged due to radiation, chemotherapy, or inflammation), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in reduced bronchus trauma
a. [Agree / Disagree]
- J. When working on lung tissue of poor quality (such as emphysematous tissue, tissue damaged due to radiation, chemotherapy, or inflammation), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in improved staple formation.
a. [Agree / Disagree]
- K. When working on lung tissue of poor quality (such as emphysematous tissue, tissue damaged due to radiation, chemotherapy, or inflammation), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in improved staple line quality/integrity.
a. [Agree / Disagree]
- L. When working on lung tissue of poor quality (such as emphysematous tissue, tissue damaged due to radiation, chemotherapy, or inflammation), I believe that the use of an endoscopic linear stapling device that provides incremental improvement in stability may result in decreased trauma to the surrounding tissue /structures.
a. [Agree / Disagree]
- 5.
- A. When working in tight spaces, where visualization of surrounding structures is poor, I believe that the use of a device that provides incremental improvement in stability may result in reduced unintentional tissue/structure damage.
a. [Agree / Disagree]
- B. When working in tight spaces, where visualization of surrounding structures is poor, I believe that the use of a device that provides incremental improvement in stability may result in reduced tearing of fragile tissue away from the staple line.
a. [Agree / Disagree]
- C. When working in tight spaces, where visualization of surrounding structures is poor, I believe that the use of a device that provides incremental improvement in stability may result in reduced tearing of fragile tissue along the staple line.
a. [Agree / Disagree]
- D. When working in tight spaces, where visualization of surrounding structures is poor, I believe that the use of a device that provides incremental improvement in stability results in reduced likelihood of damaging an important structure I am unable to see while firing.
a. [Agree / Disagree]
- E. When working in tight spaces, where visualization of surrounding structures is poor, I believe that the use of a device that provides incremental improvement in stability may result in reduced tension on the structure or tissue I am firing on.
a. [Agree / Disagree]

- F. When working in tight spaces, where visualization of surrounding structures is poor, I believe that the use of a device that provides incremental improvement in stability may result in reduced staple line oozing / bleeding.
a. [Agree / Disagree]
- G. When working in tight spaces, where visualization of surrounding structures is poor, I believe that the use of a device that provides incremental improvement in stability may result in reduced bleeding resulting from reduced damage to tissue / structure.
a. [Agree / Disagree]
- H. When working in tight spaces, where visualization of surrounding structures is poor, I believe that the use of a device that provides incremental improvement in stability may result in reduced lung trauma, resulting in fewer / less severe air leaks.
a. [Agree / Disagree]
- I. When working in tight spaces, where visualization of surrounding structures is poor, I believe that the use of a device that provides incremental improvement in stability may result in reduced bronchus trauma.
a. [Agree / Disagree]
- J. When working in tight spaces, where visualization of surrounding structures is poor, I believe that the use of a device that provides incremental improvement in stability may result in improved staple formation.
a. [Agree / Disagree]
- K. When working in tight spaces, where visualization of surrounding structures is poor, I believe that the use of a device that provides incremental improvement in stability may result in improved staple line quality / integrity.
a. [Agree / Disagree]
- L. When working in tight spaces, where visualization of surrounding structures is poor, I believe that the use of a device that provides incremental improvement in stability may result in decreased trauma to the surrounding tissue/structures.
a. [Agree / Disagree]

Device Stability in VATS and Open Thoracic Surgery

1. Endoscopic linear stapling device stability has more clinical importance in VATS thoracic surgery compared to open thoracic surgery.
a. [Agree / Disagree]
- 2.
- A. Space restrictions related to VATS thoracic surgery would be less stressful/concerning when performing a surgery with an endoscopic linear stapling device that has improved stability.
a. [Agree / Disagree]
- B. Difficult angles related to VATS thoracic surgery would be less stressful/concerning when performing a surgery with an endoscopic linear stapling device that has improved stability.
a. [Agree / Disagree]

- C. Having to work adjacent to critical structures related to VATS thoracic surgery would be less stressful/concerning when performing a surgery with an endoscopic linear stapling device that has improved stability.
a. [Agree / Disagree]
- D. Decreased visibility related to VATS thoracic surgery would be less stressful/concerning when performing a surgery with an endoscopic linear stapling device that has improved stability.
a. [Agree / Disagree]
- E. Inability to take corrective action related to VATS thoracic surgery would be less stressful/concerning when performing a surgery with an endoscopic linear stapling device that has improved stability.
a. [Agree / Disagree]

Clinical Importance of Device Stability

1. When considering thoracic surgery in general, endoscopic linear stapling device stability when performing my desired stapling job is very clinically important.
2. When considering open thoracic surgery, endoscopic linear stapling device stability when performing my desired stapling job is clinically important.
3. When considering VATS thoracic surgery, endoscopic linear stapling device stability when performing my desired stapling job is extremely clinically important.

Clinical Importance of Improved Device Stability

1. In general, an improvement in endoscopic linear stapling device stability in thoracic surgery would have a positive clinical effect on surgical outcomes.
a. [Agree / Disagree]
2.
 - A. An improvement in endoscopic linear stapling device stability during thoracic surgery may result in reduced unintentional tissue/structure damage.
a. [Agree / Disagree]
 - B. An improvement in endoscopic linear stapling device stability during thoracic surgery may result in reduced tearing of fragile tissue away from the staple line.
a. [Agree / Disagree]
 - C. An improvement in endoscopic linear stapling device stability during thoracic surgery may result in reduced tearing of fragile tissue along the staple line.
a. [Agree / Disagree]
 - D. An improvement in endoscopic linear stapling device stability during thoracic surgery may result in reduced likelihood of damaging an important structure I am unable to see while firing.
a. [Agree / Disagree]

- E. An improvement in endoscopic linear stapling device stability during thoracic surgery may result in reduced tension on the structure or tissue I am firing on.
 - a. [Agree / Disagree]

- F. An improvement in endoscopic linear stapling device stability during thoracic surgery may result in reduced staple line oozing/bleeding.
 - a. [Agree / Disagree]

- G. An improvement in endoscopic linear stapling device stability during thoracic surgery may result in reduced bleeding resulting from reduced damage to tissue/structure.
 - a. [Agree / Disagree]

- H. An improvement in endoscopic linear stapling device stability during thoracic surgery may result in reduced lung trauma, resulting in fewer/less severe air leaks.
 - a. [Agree / Disagree]

- I. An improvement in endoscopic linear stapling device stability during thoracic surgery may result in improved staple line quality/integrity.
 - a. [Agree / Disagree]

- J. An improvement in endoscopic linear stapling device stability during thoracic surgery may result in decreased trauma to the surrounding tissue/anatomical structures.
 - a. [Agree / Disagree]