

Advancing Emergency Imaging: The Synergy of SilverBeam and AiCE in Trauma C-spine

*"With the new SilverBeam Filter, beam-hardening artifacts that historically have been problematic are eliminated even in the most difficult of patients.
The latest trauma C-spine images now using SilverBeam with AiCE are the best I have ever seen for cervicothoracic trauma imaging."*

Dr. Russell Bull

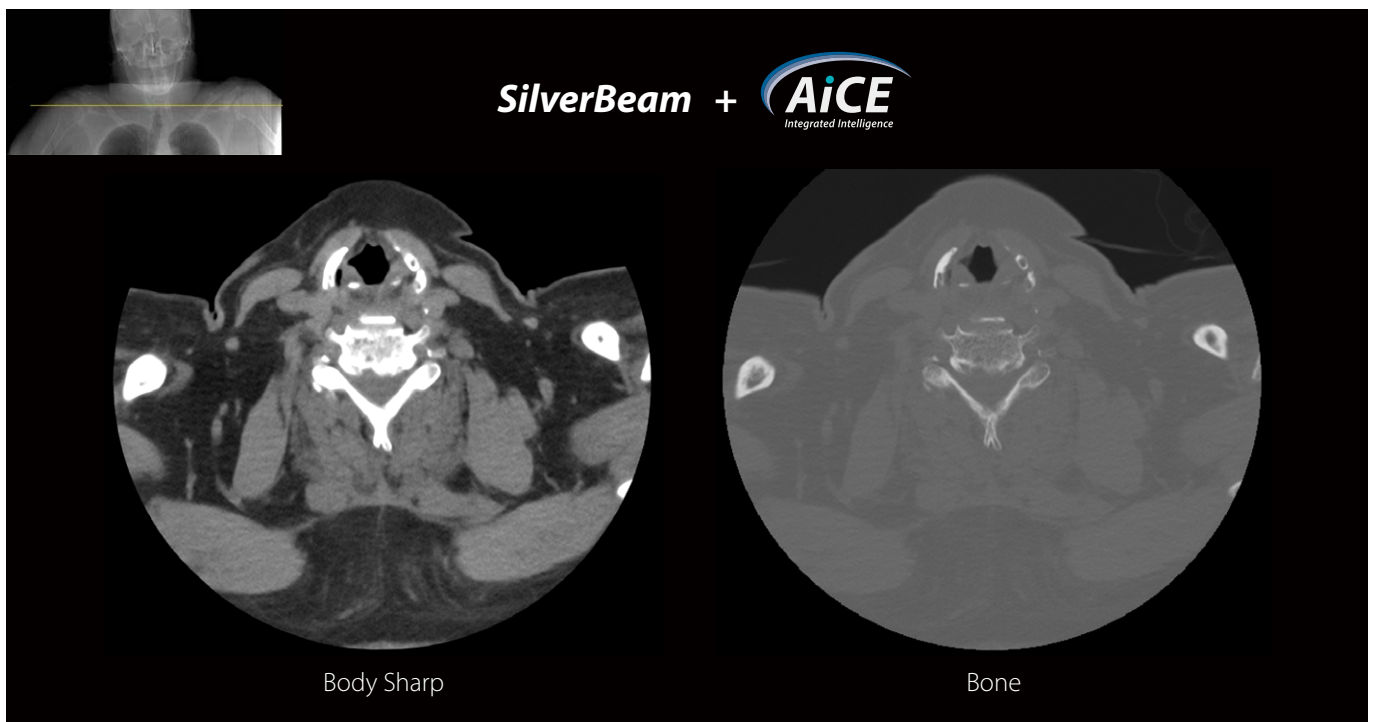
Royal Bournemouth Hospital, United Kingdom



Patient History

A 50-year-old male arrives to the emergency department immobilized post trauma and a trauma CT of the cervical spine is requested.

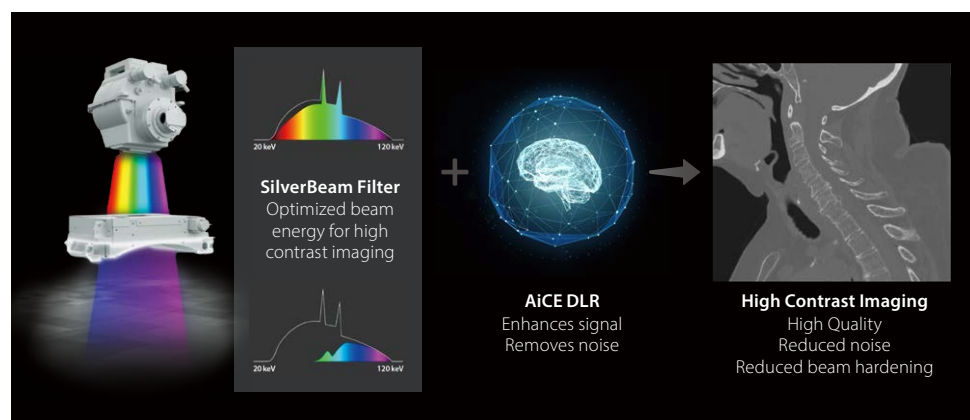
Result



SilverBeam Filter, coupled with Advanced intelligent Clear-IQ Engine (AiCE) Deep Learning Reconstruction (DLR), delivers noise-free images with minimal beam-hardening artifacts, even in large patients. This SilverBeam protocol delivers exceptional clarity and precision in trauma C-spine imaging, addressing typical challenges interpreting the cervicothoracic region.

Technology

The SilverBeam filter leverages the X-ray photon-attenuating properties of silver to selectively remove low energy photons from a polychromatic X-ray beam, leaving an energy spectrum optimized for high contrast imaging. When combined with AiCE DLR, the noise is also significantly reduced, providing sharp, noise-free images with reduced beam-hardening artifacts.



Conclusion

SilverBeam in combination with AiCE provides excellent image quality without the normal artifacts affecting the lower cervical spine due to beam hardening from the shoulders. The excellent images make it straightforward to exclude fracture or subluxation with a high degree of confidence at low radiation dose.

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Acquisition

Scanner Model: Aquilion ONE / INSIGHT Edition
Scan Mode: SilverBeam Ultra Helical
Collimation: 0.5 mm × 80
Exposure: 120 kV, ^{SURE}Exposure
Rotation Time: 1 s
CTDIvol: 9.86 mGy
DLP: 280.7 mGy-cm
Effective Dose: 0.868 mSv
k-factor: 0.0031*

Key Benefits

- Unique advantage in CT trauma imaging
- High-quality images with reduced noise and beam-hardening artifacts
- More confident diagnosis

* American Association of Physicists in Medicine (AAPM) Report 96, 2008

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