

Bone VCAR

Automated spine labeling with curved reformat generation to improve ease of reading and reporting

Background

Approximately six percent of the total CT exam procedure volume is dedicated spine imaging. Add to that the number of other routine procedures that include the spine and are referenced within an imaging report you will find a significant number of imaging series generated every day for every scanner where identification and review of the vertebral bodies and their discs are necessary. Bone VCAR will help simplify the reading experience and improve reporting efficiency by identifying and displaying the anatomy in an automated yet flexible implementation.

Overview

Bone VCAR provides an automated spine labeling application based on a deep learning model. It can identify and label segments of the spine or the entire spine in a matter of seconds. Additionally, let Bone VCAR generate the curved reformats of the spine along with the perpendicular oblique views to easily see the true cross section of the vertebral bodies and disc spaces. Utilize these time saving features to assist in your reading experience. Bone VCAR can also improve the reporting efficiency for identifying and remembering key landmarks that are included in the report dictation.

Highlights

- Automated spine labeling
- Automated curved reformats with oblique views parallel to the bodies and disc space
- Accessible for any exam type; trauma, oncology, dedicated spine, general imaging
- Accessible with all workflows



Features

- Automated vertebrae labeling in 5 seconds or less for volumes of 300mm or less *
- Deep learning application trained on global datasets acquired with a broad range of acquisition parameters achieving >90% labeling accuracy
- Automated generation of a 3D trace to generate curved reformat views
- Automated generation of oblique views perpendicular to vertebral bodies and disc spaces
- Compatible with axial source images as well as previously generated reformatted series
- Manually insert, edit or delete vertebral body labels as necessary
- Compatible with data acquisitions for dedicated spine work, trauma, oncology and routine imaging
- Load multiple series and vertebrae labeling will propagate to the different volumes
- Easily review multiple reconstructions with simultaneous display of different kernels

- Access from the Volume Viewer tool bar to easily apply during your standard read at any time
- Compatible with all DICOM CT data that meets image input requirements as described in the user guide

System Requirements

Minimum platform release:

- AW Workstations AW 4.7 Ext. 12 with VV14.0 Ext 6 or higher **Timing specifications with Z440 platform configuration and normal anatomy*
- AW Server 3.2 or higher
- Color Monitors
- Single or Dual Display Monitors for AW Server in landscape or portrait orientations
(recommended monitor resolution is up to dual 2MP (1600 x 1200) or a single 3MP (1536 x 2048))

Regulatory Compliance

This product complies with the European Council Directive 93/42/EEC Medical Device Directive as amended by European Council Directive 2007/47/EC. This product or its features may not be available in some other countries or regions. Please contact your sales associate.

Rx Only

Indications for Use

Bone VCAR is a post processing application for use in the analysis of CT images. The software is intended to support clinicians in the review of images that include the spine by providing tools to label the spine and optimize the display of anatomy within the CT image.

Bone VCAR is designed to support the clinician in visualization of the spine, by providing initial identification of vertebrae to assist in report dictation.

The software also assists the user by providing optimized display settings for easier identification of anatomy to facilitate fast image review and reporting of findings. Bone VCAR may be used for multiple care areas and is not specific to any disease state. It can be utilized during the review of various types of exams including trauma, oncology, and routine body.



GE imagination at work

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Features Detail

Bone VCAR is designed to support the clinician in easy visualization and identification of vertebral bodies. A refined layout including reformats through the vertebral bodies and disc spaces enables fast review of the anatomy to aid in the reading and reporting experience.

Integration into VV

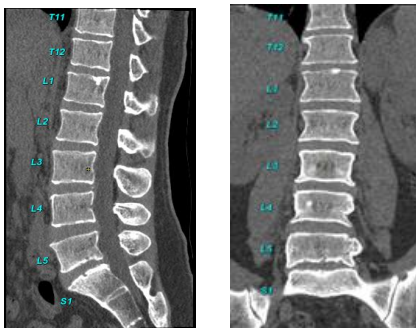
- Bone VCAR is integrated into the core toolset of Volume Viewer which makes it available to use in any reading review style desired.



- Compatible with reformatted series, Volume Rendered displays as well as GSI monochromatic datasets
- View labeled anatomy on two different reconstructions at the same time

Automatic labeling

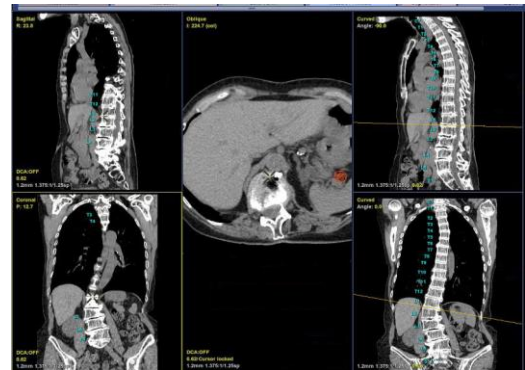
- Bone VCAR, when activated, will automatically label all the vertebral bodies within the volume for slice thickness & spacing of 2.5 or less



- Deep learning design, built with diverse database of scanner types, variable reconstruction parameters, scan ranges, contrast and non-contrast exams
- Easily edit, when needed, with auto propagation above and below the edited location
- Manually insert vertebrae and add label names to account for anatomical variations
- Load multiple series from the same acquisition and labels will propagate across the volumes

Curved Reformats

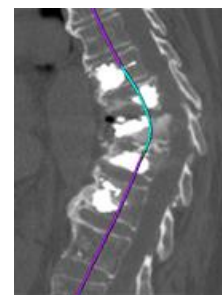
- Curved reformats are automatically created and displayed in a review layout to allow visualization of standard and reformatted views simultaneously



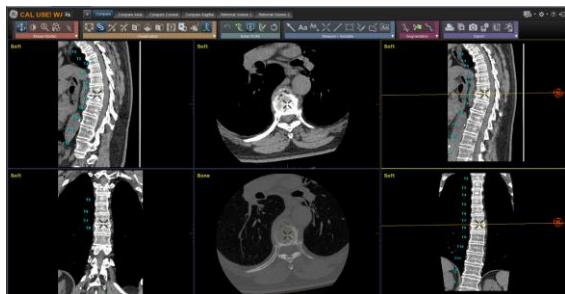
- Oblique view perpendicular to the centerline to show easily the true cross section of the vertebral body and the disc space



- Easily edit the centerline to ensure accurate placement in the most challenging cases



- Streamline the reading workflow by loading multiple series for simultaneous display with labels and curved reformat and sagittal views in a single layout



- Create batch reformats with the vertebrae labels and export to PACs to provide easy identification of vertebra bodies for expanded clinical team

Summary

Bone VCAR is designed to provide an efficient and reliable method for labeling vertebral bodies and generating true sagittal, coronal and axial views via a 3D centerline detection through the center of the vertebral bodies. It is available for use with any DICOM CT datasets that meet the input requirements as defined in the user guide.

