Three-dimensional (3D) printing can become a powerful tool for education and training in medical gross anatomy courses. Transforming DICOM images (i.e., CT images) into a format suitable for 3D printing can be a challenge, however, multiple image modeling software have been created to address this issue.

We reviewed several image modeling software to transform DICOM CT data into: (1) simplified 3D models and (2) printable STereoLithography (STL) format for 3D printing.

Materials/Methods

Eight modeling software for 3D printing were sampled. The simplest and the most user-friendly modeling software interface was selected for STL conversion. STL models were then analyzed and edited as a mesh model. The resulting model was printed using the Stratasys Dimension 3D printer (made available through the Howard University Mechanical Engineering Lab).

Results

Four of the eight-image modeling programs were able to generate STL models compatible with printing from our DICOM data sets.

The 3DSlicer program provided the simplest and the most user-friendly software interface.

Conclusions

Four of the eight-image modeling software were able to readily generate STL models compatible with printing from our DICOM data sets.

The 3DSlicer program provided the simplest and the most user-friendly software interface.

References


