

EVALUATION OF CADAVIZ DICOM-DERIVED 3D VOLUMETRIC ANATOMICAL MODELS AS AN EDUCATIONAL RESOURCE

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INTRODUCTION

Conventional 2D DICOM images may limit students' understanding of complex anatomical relationships. CADAVIZ converts DICOM data into interactive, patient-specific 3D models, enabling student-centered anatomical learning. This study evaluated a CADAVIZ DICOM-derived 3D volumetric anatomical model of left breast malignancy with axillary lymphadenopathy as a resource for anatomical education.

METHODS

The CADAVIZ DICOM-derived 3D model of carcinoma of left breast with axillary lymphadenopathy was evaluated by anatomy faculty across nine criteria using a five-point Likert scale. Faculty responses (N=60) from 49 medical institutions were treated as independent observations given minimal clustering. Differences between Senior and Junior faculty were analyzed using the Mann-Whitney U test. Internal consistency was assessed using Cronbach's alpha.

RESULTS

Agreement was consistently high across items. CADAVIZ models were rated favourably for depicting tumour-structure relationships (81.4%), and particularly for axillary lymph node anatomy and understanding of combined tumour, vascular, muscular, and nodal relationships (88.4% each). Most respondents felt CADAVIZ offered a better understanding of pathological anatomy than 2D DICOM images (74.6%), supported its incorporation into routine education (76.7%), and endorsed it as a valuable resource for education, research, and clinically relevant learning materials (76.3%); disagreement remained minimal ($\leq 12\%$). Faculties showed no significant differences on most items, though Senior faculty gave significantly higher ratings for incorporation into education ($p=0.009$, $r=0.40$). Cronbach's alpha was 0.90, indicating good internal consistency.

CONCLUSION

CADAVIZ DICOM-derived 3D volumetric anatomical models were positively received as a realistic, patient-specific tool enhancing visualization of complex pathological anatomy, supporting their value in medical education.