

Multimedia presentation assisted clinical diagnosis, prognosis and treatment

Introduction by the Advisory Editor-in-Chief

Advanced digital imaging technology and multimedia presentation methods have been widely used in biomedical imaging research and clinical practice. As examples, CT, MRI and other medical images can be displayed in 3D rendered formats to reveal fine details from different angles and to demonstrate internal structures. These 3D multimedia presentations facilitate clinical diagnosis, prognosis and treatment planning. Journal of X-ray Science and Technology (XST) is happy to introduce our first special issue in Multimedia Presentation Assisted Clinical Diagnosis, Prognosis and Treatment. This special issue is edited by Dr. Yuanyuan Zhang and contributed by physician researchers—thank you for sharing clinical experiences and scientific observations to the readers of XST.

Hong Liu, Ph.D.

Preface by the Guest Editor:

Computed Tomography (CT) has become an important noninvasive approach in the diagnostic medicine. State-of-the-art cross-sectional imaging approaches make it possible to visualize diseases-affected tissues or defected organs with greater assurance by minimizing the interrupter of overlying tissues to focus on individual organs, which aids in the detection and characterization of targeted tissues. The 3D reconstruction of CT images offers volumetric information with clinical data. This issue addresses clinical applications of 3D reconstruction of CT in genitourinary tract system in evaluation of a serial of rare cases, including large adrenal carcinoma, Wilms tumor with distant metastasis, several renal trauma, ectopic insertion of a duplicated ureter into prostatic urethra. In addition, cone-beam CT in evaluation of complicated malocclusion prior and post surgeries has been reported in this issue. The rotated multimedia 3D videos provide animations, which could better help medical students, residents or inquisitive minds understand the diseases.

Yuanyuan Zhang, MD, Ph.D.