Intraoperative Ultrasound (IOUS) in Neurosurgery: From Standard B-mode to Elastosonography

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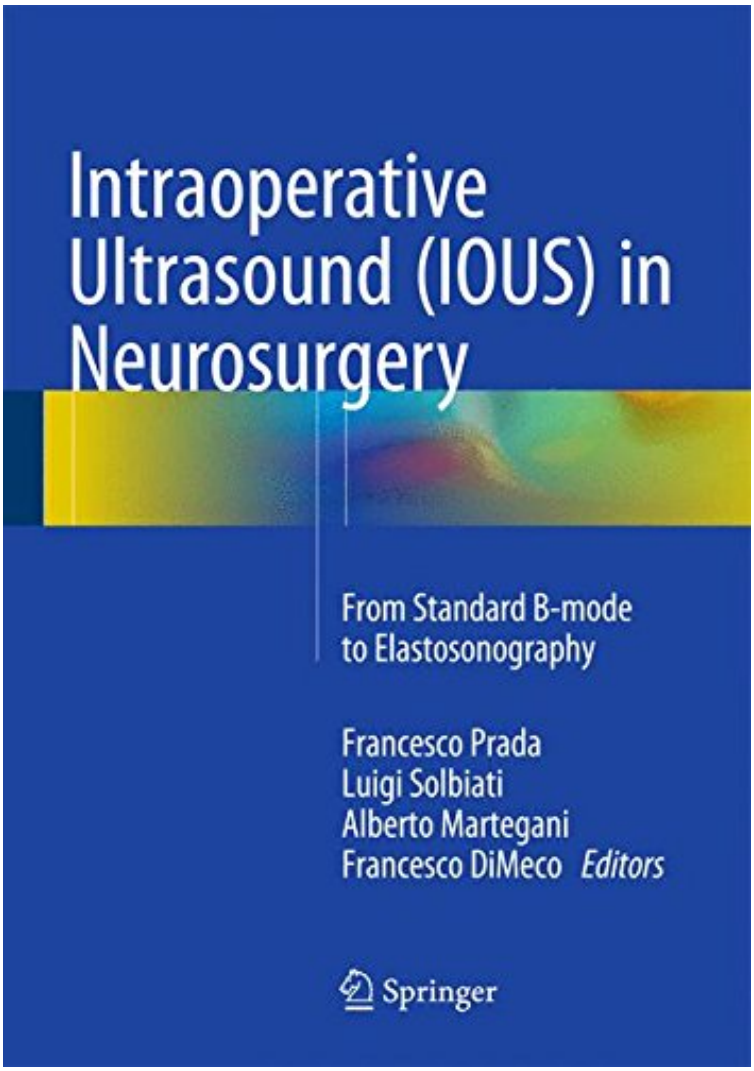

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0 of 0 people found the following review helpful. Ultrasound in NeurosurgeryBy Joseph J GrenierIntraoperative Ultrasound in NeurosurgerySpringer Cham Berlin HeidelbergJoseph Grenier MD PhDThis is a well-illustrated monograph of 200 pages on 2D, 3D, Doppler, B-Mode Elastography, and Ultrasound imaging of gliomas, aneurysms,

AVMs, and other vascular anomalies. Carotid US is included in the analysis. Correlative comparison with MRI, CT and 3D angiography is described in depth.The physical and engineering principles of ultrasound is related to the equations of physics. Electrical engineering of the insttrumentation is analyzed. The book is richly illustrated with full color pictures. The book is from the European/Italian perspective primarily and contributions from European centers of Neurosurgery. This is essential reading material for all neurosurgeons using ultrasound.

This book is intended as a practical manual on the use of intraoperative ultrasound (IOUS) as a tool for imaging guidance during cranial and spinal neurosurgical procedures. Full account is taken of the emergence of novel clinical applications and recent technical advances, with extensive coverage of the impact of developments such as improved probe technology, fusion imaging and virtual navigation, 3D ultrasound imaging, contrast-enhanced ultrasound, and elastosonography. Basic principles of ultrasound are elucidated in order to assist in the optimal use of IOUS and clear guidance is provided on the interpretation of imaging findings in various pathologies. Informative comparisons are also made of the use of techniques such as fusion imaging and contrast-enhanced ultrasound in general radiology and neurosurgery. The aim of the authors is to enhance the general knowledge regarding intra-operative ultrasound brain imaging, standardizing its use and exploring new techniques, leading in some way toward compensating the lack of specific training in the application of ultrasound among the neurosurgical community. IOUS is a sensitive tool that can improve surgical precision and help to reduce morbidity.

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