# Article information:

Virtual‐force‐guided intraoperative ultrasound scanning with online lesion location prediction: A phantom study - Niu - The International Journal of Medical Robotics and Computer Assisted Surgery - Wiley Online Library
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# Article summary:

1. Ultrasound is a mainstream medical imaging device due to its flexibility, ease of integration, and ability to image in real-time.

2. Virtual force (VF) can guide the ultrasound scanning plane to align with the OSP and control the scalpel puncture in the OSP.

3. Research on virtual-force-assisted master-slave control has been divided into three categories: assisting the tool in reaching a specific target, assisting the instrument in moving along the desired path, and restricting the surgical instrument to a specific area or limit access to a specific area.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article “Virtual‐force‐guided intraoperative ultrasound scanning with online lesion location prediction: A phantom study” by Niu is an informative and well-researched piece that provides an overview of virtual force (VF)-assisted master-slave control for intraoperative ultrasound scanning. The article is written in an objective manner and presents both sides of the argument equally. It provides evidence for its claims through references to previous studies and experiments conducted by other researchers.

The article does not contain any promotional content or partiality towards any particular point of view, but rather presents all relevant information objectively without bias. Furthermore, it does not omit any potential risks associated with VF-assisted master-slave control, such as inaccurate tracking accuracy or incorrect needle orientation during insertion.

The only potential issue with this article is that it does not explore counterarguments or present alternative points of view on VF-assisted master-slave control for intraoperative ultrasound scanning. However, this is understandable given that this article focuses primarily on providing an overview of existing research on VF-assisted master-slave control rather than exploring different perspectives on this topic.

In conclusion, this article is reliable and trustworthy due to its objective presentation of information without bias or promotional content, as well as its thorough referencing of previous studies and experiments conducted by other researchers.

# Topics for further research:

* Intraoperative ultrasound scanning safety
* Advantages of virtual force-assisted master-slave control
* Disadvantages of virtual force-assisted master-slave control
* Alternatives to virtual force-assisted master-slave control
* Clinical applications of virtual force-assisted master-slave control
* Accuracy of virtual force-assisted master-slave control

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