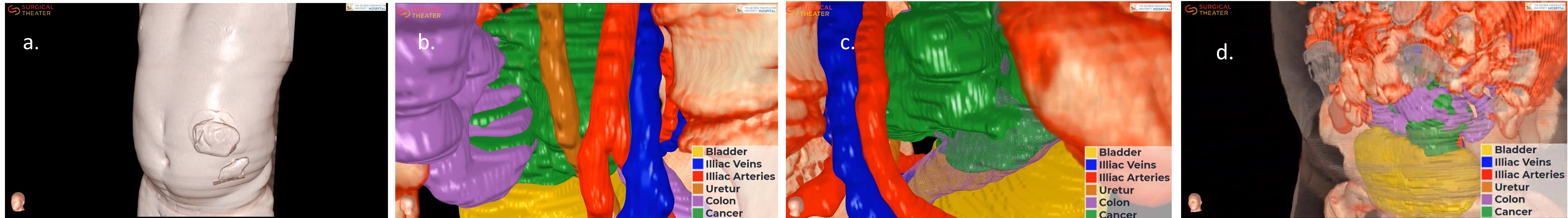


Improvement in Patient Understanding of Colorectal Pathology Using 3D Imaging

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Background

- Patient understanding of surgical pathologies and procedures is often poor
- 3D rendering has been shown to improve patient education and comfort prior to surgery
- Surgical Theater[®] is a medical technology company offering “3D fly-through” imaging

Objective

Determine the educational benefit of 3D imaging for various colorectal pathologies

Methods

- Prospective single-institution pilot study from 2019 – 2021
- Patients who received CT or MRI had their imaging converted to 3D rendition using Surgical Theater[®] software
- Patients were shown their 3D rendering during office visits and asked to fill out surveys before and after

Figure 1. Screenshots from Surgical Theater 3D video renditioning of a colon cancer

a. External view; b. Lateral-to-medial view; c. Posterior to anterior view; d. Anterior to posterior view

	All Pathology (n=160)	Intra-abdominal pathology (n=130)	Anorectal pathology (n=30)	p-value
Disease Understanding				
Pre-intervention	5.82	5.78	5.97	.705
Post-intervention	8.67	8.73	8.43	.274
Difference	2.82	2.94	2.47	.298
Anatomy Understanding				
Pre-intervention	5.28	5.16	5.77	.256
Post-intervention	8.48	8.53	8.23	.371
Difference	3.21	3.41	2.47	.033
Comfort with 3D technology	6.44	6.52	6.10	.544
Comfort with all technology	7.81	7.89	7.43	.408

Table 1. Mean patient survey scores by pathology type. All scores provided on a scale of 1-10.

Conclusions

- 3D imaging increased patient understanding of both their disease and the relevant anatomy
- Patients with intra-abdominal pathology reported a greater increase in anatomy understanding when compared to the anorectal group
- Factors affecting the differences in understanding remain to be determined

References

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