AB061. SOH23ABS_241. A novel means of proving surgical outcomes—digital simulation of the human abdomen following surgical intervention

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Background: Recently we developed a technique to digitally reconstruct the human abdomen from radiological data sets. Up to now, the reporting of surgical outcomes was largely numerative or descriptive. To date, no studies have attempted to visually depict outcomes following surgical intervention. We hypothesized that this could be achieved using digital reconstructions of the abdomen pre and post-surgical intervention.

Methods: Patients were identified for whom computerized axial tomographic imaging was available both pre and post-operatively. Following ethical approval and informed consent, a digital reconstruction of the abdomen of each patient was generated from pre and postoperative radiological data sets. These were generated in Horo's and processed for examination in Blender. Reconstructions were then visually inspected.

Results: In each case, each patient's pathology was apparent in their preoperative abdominal reconstruction. In all cases, removal or correction of the primary pathology was apparent in their postoperative abdominal reconstruction. This held for patients undergoing surgery for Crohn's disease, correction of malrotation and removal of colorectal cancer.

Conclusions: Digital reconstruction demonstrates removal or correction of primary surgical pathology following surgical intervention. Digital reconstruction is a novel means of depicting the results of surgical intervention.

Keywords: Blender; computed tomography; digital reconstruction; digital simulations; Horo's

Acknowledgments

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