

Virtual endoscopy (VE) uses a tomographic data set (i.e. CT or MRI) of the organ of interest to create internal views which simulate the views seen through an actual endoscope. In addition, VE allows the user to interactively or automatically navigate the virtual endoscope. On one hand, there are many advantages to using VE. Patients will go through as little discomfort as being scanned with MR or CT. VE procedure can be performed and repeated as many times as desired with different navigation plans. It can be used for patient education. Navigation is accessible through cavities and non-cavities. Consultation can be easily acquired by transferring the tomographic data to a different location anywhere in the world. Virtual colonoscopy is more acceptable to those embarrassed by the conventional endoscopic exam. Recently, our research group were able to implement VE on a PC which opens the gate to many other advantages. On the other hand, there are also limitations to VE. Patients still need to be scanned with either CT or MR which is not cheap. In addition, there is radiation dose involved with CT and patients that are claustrophobic or have metal implants can not undergo an MR scan. More importantly, segmentation of soft tissue can be troublesome and requires sophisticated image processing algorithms. In summary, comparing the pros and cons of VE, the advantages of VE clearly have the upper hand, nevertheless reality needs to prove it.

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