



## Pathology Biology Section – 2007

---

### G23 Virtopsy - Virtual Autopsy, Where We Go?

Michael J. Thali, MD\*, University Bern, Centre Forensic Imaging and Virtopsy, Buehlstrasse 20, Bern, Bern 3012, Switzerland

After attending this presentation, attendees will learn about the newest imaging technologies for forensic medicine.

This presentation will impact the forensic community and/or humanity by discussing the upcoming cutting edge developments and steps in visual documentation and reconstruction of forensic cases. Therefore there will be a great impact of the paper. Invasive "body opening" autopsy is today's state of the art in human postmortem investigation. Modern cross section techniques can supplement and may replace autopsy to some extent with several improvements for the forensic workflow.

A combination of 3D optical and photogrammetric surface scanning with full body CT scans as well as postmortem MRI investigations to correlate the radiological findings with the forensic findings documented in traditional autopsy performed afterwards is discussed. Using the Armed Forces Institute of Pathology (AFIP) design comparison approach, well known from clinical radiology and pathology correlating radiological and pathological findings, different forensic morphological findings are presented. Additionally the application of micro CT and Magnetic Resonance Microscopy is introduced for the forensic use.

The new possibilities that are based on the combined data sets of forensic corpses (visible human in forensics) such as real data based forensic virtual reconstruction and application of "morphological fingerprints" are demonstrated. The article gives an overview on postmortem application of 3D surface scanning and radiological cross sectional scanning using CT and MRI in forensic medicine by correlating imaging appearances of essential forensic findings to their appearance in traditional autopsy.

This paper presents the newest developments in postmortem biopsy, postmortem angiography, and the MRI whole body imaging using "Total imaging Matrix."

**Virtopsy, Virtual Autopsy, Imaging**