

## Standardized Visual Representations of Radiological Surveillance Data

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### Abstract

In this talk, I firstly present visualization approaches to analyze patients with chronic aortic dissections. As these are characterized by a growth of the aortic diameter, patient suffering from dissections require lifelong aortic imaging surveillance. Aortic diameters at well-defined landmarks are routinely measured by experienced 3D imaging staff on baseline and all follow-up imaging. Besides the absolute aortic diameters at a certain timestamp, especially the aortic evolution over time is of high prognostic relevance. Along a specific aortic visualization plot I demonstrate how patients at high risk and need for surgical intervention can easily be identified along their diameter changes over time. All survivors of acute aortic dissections require long-term surveillance with CT imaging to monitor aneurysmal degeneration, false lumen progression and organ malperfusion, which are common late adverse events. Several imaging features of aortic dissections in the acute phase are associated with a high risk of future adverse events. These include among others the initial aortic diameter and the blood supply (outflow) to aortic branch vessels from the true and false lumen. I explain how significant CT imaging features that are predictive of adverse events in patients with type B aortic dissections can be illustrated in a visual risk calculator. With this, patients with a high risk for adverse events can be identified during follow-up examinations. Furthermore, I present a concept where the common interaction of 3D rotation is used to navigate through the data of aortic surveillance.