Rapid confocal imaging of large areas of excised tissue with strip mosaicing


**ABSTRACT**
Imaging large areas of tissue rapidly and with high resolution may enable rapid pathology at the bedside. The limited field of view of high-resolution microscopes requires the merging of multiple images that are taken sequentially to cover a large area. This merging or mosaicing of images requires long acquisition and processing times, and produces artifacts. To reduce both time and artifacts, we developed a mosaicing method on a confocal microscope that images morphology in large areas of excised tissue with sub-cellular detail. By acquiring image strips with aspect ratios of 10:1 and higher (instead of the standard 1:1) and "stitching" them in software, our method images 10×10 mm² area of tissue in about 3 min. This method, which we call "strip mosaicing," is currently three times as fast as our previous method.