Digital pathology provides new ways to visualize tissue slides and enables new workflows for analyzing these slides. Analogous to radiology, adjacent tissue sections prepared with different stains or biomarkers (e.g. H&E, IHC, special stains, or ISH; chromogenic or fluorescent) may be seen as different modalities, each representing different structural and/or functional information. Today, the anatomic pathologist views multiple glass slides using an optical microscope and then combines the information in their head to reach a (diagnostic) opinion. Moreover, due to the nature of the slide preparation and digitization process, the tissue and its features do not have the exact same morphology, appearance, or spatial alignment, making it difficult to find the same region on adjacent slides. To address such concerns, this paper presents a method for the spatial alignment of multi-modal whole slide digital microscopy images. To remain practical, the described method employs a two-step registration strategy designed to reduce computation time: the first step computes a B-spline deformable transform on low-resolution images prior to visualization, the second step applies the precomputed transformation only to the high-resolution region currently being viewed. The proposed method is demonstrated using a number of cases comprising H&E and IHC stained slides. These results indicate the feasibility of deformable registration for spatial alignment of multi-modal whole slide digital microscopy images within practical time constraints.