Previous research has revealed that rote memorization and a weak understanding of concepts foundational to calculus attribute to students’ difficulties in visualizing (co)variation and an inability to extrapolate mathematical concepts to solve novel problems. There has been a shift toward dynamic imagery and multimedia usage in task construction to alleviate these issues; however, little is known about how students look at images in calculus. The purpose of this study is to identify potential themes that emerge in students’ gaze patterns relative to their ways of thinking about a novel calculus-based task. Two one-hour semi-structured interviews were conducted with eleven undergraduate calculus students. Audio and visual recordings of the interviews were used to code participants’ in-the-moment ways of reasoning for this task. Gaze patterns were observed and commonalities in eye movements that emerged within similarly coded instances were recorded. Individuals’ in-the-moment static shape thinking appears to coincide with fewer switch counts between relevant areas of interest of the task while their in-the-moment emergent shape thinking appears to coincide with higher switch counts and greater attention to these areas of interest. This study focuses on the results from one task. (Received September 17, 2019)