CLAIMS

1. A surgical access device, comprising:
   a shaft through which extends a working channel; and
   a balloon visualization module positioned at the distal end of the shaft, the balloon visualization module comprising a balloon with a camera module positioned within the balloon, wherein when in a stowed configuration, the camera module is configured to be contained within an outer diameter of the shaft and when deployed in use with an inflated balloon, the camera module moves radially outwardly relative to a longitudinal axis of the shaft to a position beyond an outer wall of the shaft.
2. The surgical access device of claim 1, wherein the balloon visualization module is completely within the working channel when stowed.
3. The surgical access device of claim 1, wherein at least a portion of a distal surface of the balloon forms a contact visualization surface configured to contact target tissue and allow visualization of the target tissue therethrough by the camera module.
4. The surgical access device of claim 3, wherein at least 90% of the distal surface of the balloon is within a field of view of the camera module when the camera module is in a deployed configuration.
5. The surgical access device of claim 1, wherein the balloon visualization module comprises a channel extension coupled to a distal end of the working channel of the shaft.
6. The surgical access device of claim 5, further comprising a camera mount configured to attach to the channel extension and support the camera module.
7. The surgical access device of claim 5, wherein, in the stowed configuration in which the balloon is deflated, the balloon visualization module is positioned within the channel extension.
8. The surgical access device of claim 5, wherein the channel extension comprises a lumen with an upper cut out portion through which the balloon visualization module is configured to at least partially emerge upon inflation of the balloon.
9. The surgical access device of claim 8, wherein the cut out portion comprises 60-90% of a length of the channel extension.

10. The surgical access device of claim 8, wherein the cut out portion begins at a location distal to a distal end of the shaft, and ends at a location proximal to a distal end of the channel extension.
11. The surgical access device of claim 8, wherein the channel extension further comprises a proximal mating feature, configured for facilitating coupling of the channel extension to the distal end of the working channel of the shaft.
12. The surgical access device of claim 11, wherein the proximal mating feature comprises grooves, threads, snap fits, tabs, protrusions, ridges, or apertures.
13. The surgical access device of claim 8, wherein a lower portion of the cut out portion includes a pattern of a repeating ovular cutout, an aperture grid, or a lattice structure.
14. The surgical access device of claim 5, wherein the channel extension comprises two lumens, being a top lumen and a bottom lumen, and a wall separating the two lumens.
15. The surgical access device of claim 5, wherein the channel extension comprises a flexible tube.
16. The surgical access device of claim 5, wherein the channel extension comprises an optically clear material.
17. The surgical access device of claim 5, wherein the balloon comprises a balloon channel configured to surround the channel extension.
18. The surgical access device of claim 17, further comprising a camera mount configured to attach to the balloon channel and support the camera module.
19. The surgical access device of claim 5, wherein the balloon is asymmetric around a longitudinal axis of the channel extension.
20. The surgical access device of claim 1, wherein the working channel extends past a distal end of the shaft.