



**S3 Fig.** *BRAF*-fusion detection with *BRAF* Break Apart FISH in six PA cases. The *BRAF* break apart pattern was characterized in six PA cases harboring two different *BRAF*-fusions (*GTF2I-BRAF* in PA3; *KIAA1549-BRAF* in PA1-2 and PA4-6). In fusion-positive nuclei, the interphase FISH displayed two pairs of merged (yellow) or adjacent green/red signals of the 5'/3' wt *BRAF* alleles, and one additional split red signal indicating a duplicated copy of the 3' *BRAF* region. All six *BRAF*-fusion-positive cases showed the break apart pattern, although the distance of the split 3' signal from the normal *BRAF* allele pairs differed between cases; close split signal (e.g. PA2, PA5) or distant split signal (e.g. PA4) from the normal allele pairs in 7q34.