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We consider regions obtained from 120 degree rotationally invariant hexagons by removing a core and three equal satellites (all equilateral triangles) so that the resulting region is both vertically symmetric and 120 degree rotationally invariant, and give simple product formulas for the number of their lozenge tilings. We then work out consequences for the correlation of holes, which was the original motivation for this study. (Received February 03, 2020)