For an abelian variety $A$ with small $p$-torsion, we count the number of representations of the étale fundamental group of $A$ to $GL_n(q)$, where $q$ is a power of $p$. This count (for fixed $n$) turns out to be a polynomial in $q$. The space of such representations is not a scheme, but does have the structure of a constructible set. We give an explicit formula for this polynomial, then state a few theorems which elucidate its features. In particular, we state a new result which generalizes to cosets a theorem of Frobenius about the number of solutions to $x^n = 1$ in a finite group. (Received September 16, 2016)