Let $F$ be the function field of a surface $X$ over a finite field. Let $l$ be a prime not equal to the characteristic of $F$. Suppose that $F$ contains a primitive $l^{th}$ root of unity. We prove a certain local-global principle for elements of $H^3(F,\mu_l)$ in terms of symbols in $H^2(F,\mu_l)$ with respect to the discrete valuations of $F$. We use this to prove that every element in $H^3(F,\mu_l)$ is a symbol. The local-global principle also leads to the vanishing of certain unramified degree 3 cohomology groups of conic fibrations over $X$. This has implications towards the validity of the conjecture that Brauer-Manin obstruction is the only obstruction to the existence of zero-cycles of degree one for certain surfaces over global fields of positive characteristic. (Received September 25, 2012)