$$H^0(M, \mathcal{O}_M(L+(\mu-1)H)) \to H^0(M, \mathcal{O}_M(L+\mu H)) \to H^0(M, \mathcal{O}_V(L+\mu H)) \to H^1(M, \underbrace{\mathcal{O}_M(L+(\mu-1)H))}_{=\,0} \to H^1(M, \mathcal{O}_M(L+\mu H)) \to H^1(\cdots$$

$\Rightarrow$ By induction assumption,

$$H^0(M, \mathcal{O}_V(L+\mu H)) = H^0(V, \mathcal{O}(L+\mu H)) \neq 0$$ (see P157 & compare with it)

$\Rightarrow$ By Theorem B, $H^1(M, \mathcal{O}(L+(\mu-1)H)) = 0$.

$$\Rightarrow \quad H^0(M, \mathcal{O}_M(L+\mu H)) \longrightarrow \underbrace{H^0(V, \mathcal{O}(L+\mu H))}_{\neq 0} \longrightarrow 0$$

$$\Rightarrow \quad H^0(M, \mathcal{O}_M(L+\mu H)) \neq 0.$$

Thus $H^0(M, \mathcal{O}_M(L+\mu H)) \neq 0$, and the result is proved. Q. E. D.

We now consider for a moment the general problem of analytic cycles. On a compact Kähler manifold M, the Hodge decomposition

$$H^n(M, \mathbb{C}) = \bigoplus_{p+q=n} H^{p,q}(M)$$

on complex cohomology gives a slightly coaser decomposition of real cohomology

$$H^n(M, \mathbb{R}) = \bigoplus_{\substack{p+q=n \\ p\le q}} \left(H^{p,q}(M) \oplus H^{q,p}(M) \right) \cap H^n(M, \mathbb{R}).$$