When this chiral secondary alcohol reacts with SOCl$_2$ alone, retention of configuration via the $S_{\text{Ni}}$ mechanism is observed from the initially formed intermediate.

When SOCl$_2$ and pyridine are used, the initially formed intermediate reacts with pyridine to give an excellent leaving group and inversion of configuration is observed.

When the SOCl$_2$ reaction is carried out in 1,4-dioxane, retention of configuration is also observed, but not via the $S_{\text{Ni}}$ mechanism. Propose an alternative to the $S_{\text{Ni}}$ mechanism under these conditions that could also lead to retention of configuration as the only outcome.