Independence of the twist equation

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ħ^-1 (b[LW@x, A1] + b[LW@y, B1] ≡ LS[0]) ⋀ (div_x[A1] + div_y[B1] ≡ CWS[0]) ⋀
  (A1 ≡ (B1 // LieMorphism[x → y, y → x]))];
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Question for $F,G \in FL(x,y)$, does

$$[x,F]+[y,G]=0 \ \&\ \mathrm{div}_x F+\mathrm{div}_y G=0$$

imply $F(x,y)=G(y,x)$?

Globally, is it:

"if you can slide under a tangle, and when you cap it it is trivial, then it is a u-braid" ?

Perhaps more likely is to formulate this entirely within u: "If a connected two-colored $\mathfrak{Q}^u$-tree is diagram free, then it is $x \leftrightarrow y$ symmetric".