Algorithm: B := CHOL_UNB_VAR_3(A)

Partition $A \rightarrow \left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right)$

  where A_{TL} is 0×0

while $m(A_{TL}) < m(A)$ **do**
  Repartition

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \rightarrow \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10}^T & \alpha_{11} & A_{12}^T \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right)$$

$\alpha_{11} := \sqrt{\alpha_{11}}$
$a_{21} := a_{21}/\alpha_{11}$
$A_{22} := A_{22} - a_{21}a_{21}^T$
    (updating only the lower triangular part)

  Continue with

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10}^T & \alpha_{11} & A_{12}^T \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right)$$

endwhile