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| --- | --- | --- | --- |
| **LM-ECC** | | | |
| **Grouping** | **purpose** | **Method used** | **step** |
| **labeling** | Determining the initial ROIs | Thresholding on the whole image | 1 |
| Removing bony ROIs | Four-neighbor method | 2 |
| **Cleansing** | Removing non-frontier residual material and identifying the margins of areas containing residual material | Thresholding on the selected ROIs | 3 |
| classifying the margins and removing the residual material | Eight-neighbor method | 4 |
| smoothing the sharp edges of the mucus | Gaussian filter | 5 |

Fig. 1. Procedures for implementation and their purposes