Supplement 1. Summary of clinopathological variables and their application in the validated nomograms.

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|  | **Included variables** | **Application in the nomogram** |
| Chagpar et al. 2007 | T stage  Number of positive and negative SLNs  Ratio of positive and negative SLNs | Score of 1─5 points, one indicating a low < 5 % probability of N2─3 stage. |
| Katz et al. 2008 | Tumor size  Tumor histology  Number of positive and negative SLNs  SLN metastasis size  Lymphovascular invasion  Extra-capsular extension | Mathematical scoring system resulting in a risk estimation for N2─3 stage ranging 0.005─0.99. |
| Meretoja et al. 2013 | Tumor size  Number of positive and negative SLNs  Prevalence of N2 stage in the patient series  Extra-capsular extension | Online calculator and mathematical equation resulting in a continuous risk estimation level. |

*SLN* Sentinel lymph node

Supplement 2. Flowchart of patient cohort formation.