

## Appendix 1 Supplemental materials

### *Image acquisition*

The qualitative characteristics include: (I) time of wash-in (earlier, concurrent, or later); (II) enhancement patterns (centripetal, centrifugal, or hybrid); (III) enhancement degree (hypo-enhancement, iso-, or hyperenhancement compared with surrounding thyroid parenchyma); (IV) homogeneity of enhancement (homogeneous or heterogeneous); (V) enhancement margin (clear or blurred); (VI) perfusion defect (absent or present); (VII) perforator vessels (absent or present); (VIII) size after enhancement (unchanged or larger). The quantitative parameters were obtained by Aplio i900 system software. The ROI was outlined along the outer margin of the lesions to generate the time-intensity curve (TIC) and included the following: (I) peak intensity (PI); (II) time to peak (TTP); (III) slope; (IV) mean transmit time (MTT); (V) area.

### *Feature selection and model construction*

The hyperparameters of each model:

1. Support vector machine:

cost: 0.227

rbf\_sigma: 0.9296

2. Random forest:

mtry: 7

trees: 471

min\_n: 55

3. Logistic regression

Penalty: 4.4

Mixture: 0.7