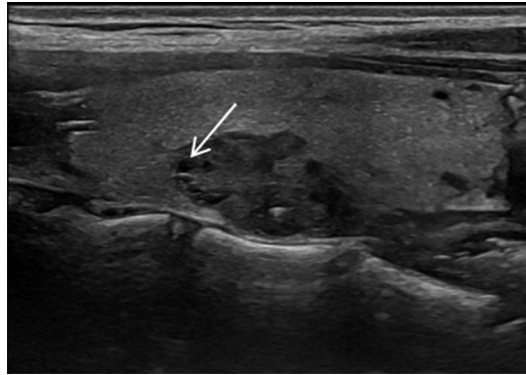
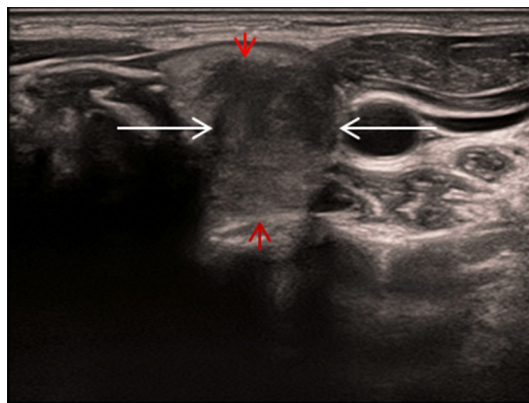


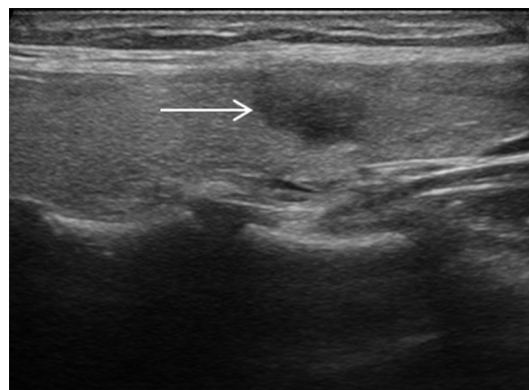
**Appendix 1 Ultrasound features and their definitions for thyroid nodules**



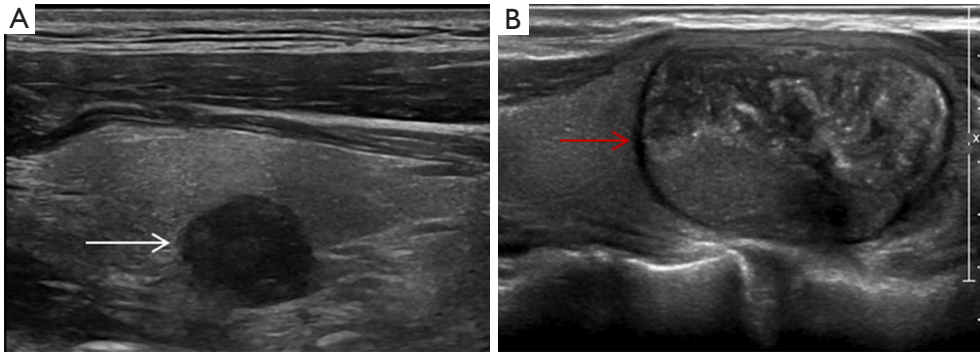
(I) Solid portion  $\geq 50\%$ : nodule contains solid components that comprise more than 50% of its volume in aggregate. The liquid components are minimal (arrow).



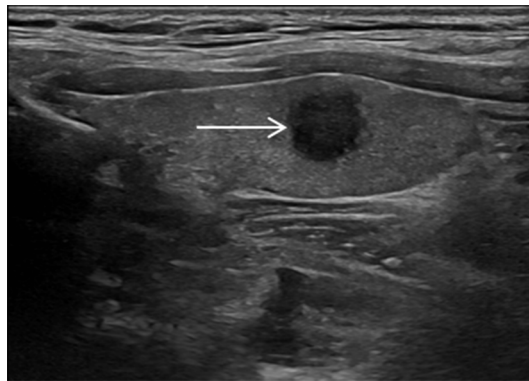
(II) Taller-than-wide: the anteroposterior diameter of the nodule is larger than the longitudinal diameter in the longitudinal section or the transverse diameter in the transverse section. The transverse section image shows a nodule with anteroposterior dimensions (red arrows) greater than its transverse dimension (white arrows).



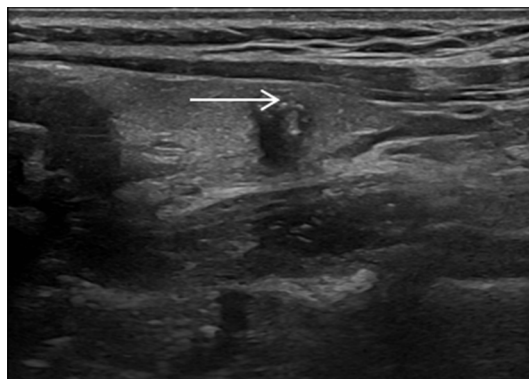
(III) Ill-defined margin: The nodule (arrow) is poorly demarcated from adjacent thyroid tissue.



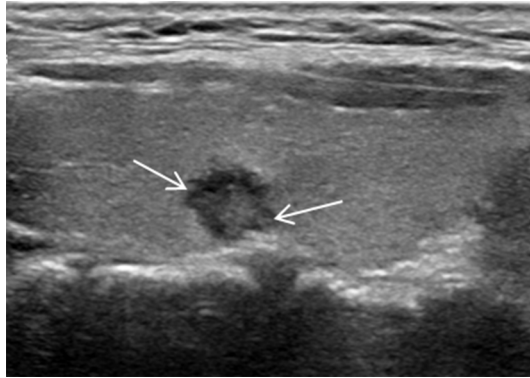
(IV) Absent halo (A): a hypoechoic or anechoic rim (white arrow) is absent surrounding the nodule. Present halo (B): a hypoechoic or anechoic rim (red arrow) surrounds the nodule.



(V) Hypoechoic: nodule (arrow) echogenicity is lower than that of the surrounding thyroid parenchyma.



(VI) Microcalcification: nodule contains multiple-minute echogenic foci of less than about 1 mm with or without acoustic shadowing (arrow).



(VII) Irregular shape: the nodule margin demonstrates multiple spiculated, angular, or micro-lobulated (arrows).