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Subtypes of thyroid nodules with atypia of undetermined significance diagnosis: malignancy risk and US features

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PURPOSE: To investigate malignancy risk and ultrasound (US) features among subtypes of AUS nodules.

MATERIALS AND METHODS: The Bethesda System was used for US-guided FNA diagnoses. The study included 200 nodules (Group 1, n = 105, Group 2, n = 45, Group 3, n = 50) of consecutive 187 patients in which FNA showed AUS diagnoses. Cases of AUS were subclassified as 3 Groups; Group 1, focal nuclear atypia (n = 105), Group 2, focal microfollicular feature or Hurthle cell lesion (n = 45), and Group 3, not otherwise specified (n = 50). Final diagnoses were obtained in 82 nodules (33 malignant nodules and 49 benign nodules). We compared the malignancy risk and US features between each group of nodules.

RESULTS: Malignancy risk (57.1%) of Group 1 was significantly higher than those of Group 2 (26.3%, p = .002), and group 3 (19%, p = .007). Papillary thyroid cancer was found in 19 (79.2%) of 24 carcinomas in Group 1, and in 2 (40%) of 5 carcinomas in Group 2, and in 4 (100%) in Group 3. There was significant difference of US features of margin, orientation, and calcification between Group 1 and 2 (smooth margin 74.3%, vs. 95.6%, p = .002; spiculated/microlobulated margin 12.4% vs. 0%, p = .010; nonparallel orientation 14.3% vs. 0%, p = .006; and macrocalcification 15.2% vs. 2.2%, p = .002). There was significant difference of US features of echogenicity and composition between Group 1 and 3. (isoechogenicity 31.4% vs. 61.2%, p = .001; hypoechoogenicity 49.5% vs. 30%, p = .025; solid composition 93.3% vs. 82%, p = .046; and predominantly solid composition 5.7% vs. 18%, p = .021). There was no significant difference of other US features between Group 1 and Group 2 or 3. There was no US feature significantly predictive of malignancy in overall nodules as well as at each subgroup. Isoechogenicity was significantly predictive of benign nodule in overall AUS nodules (malignancy 23% vs. benign 50%, p = .019).

CONCLUSION: The malignancy risk of Group 1 was significantly higher compared with that of Group 2 or 3. Although Group 1 had different US features compared with Group 2 or 3, and any US feature was not significantly predictive of malignancy in AUS nodules. The difference of clinical and US features between three subtypes of AUS should be considered in the management of thyroid nodules with AUS FNA diagnosis.