World Academy of Science, Engineering and Technology
International Journal of Biomedical and Biological Engineering
Vol:12, No:12, 2018

Clinical Implication of Hyper-Intense Signal Thyroid Incidentaloma on Time of Flight Magnetic Resonance Angiography

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Abstract : Objectives: The purpose of this study is to evaluate the clinical significance of hyper-intense signal thyroid incidentalomas on the time of flight magnetic resonance angiography (TOF-MRA) using correlation study with ultrasound (US). Methods: We retrospectively reviewed 3,505 non-contrast TOF-MRA performed at an institution between September 2014 and May 2017. Two radiologists correlated the thyroid incidentalomas detected on TOF-MRA with US features which was obtained within three months interval between MRA and US examinations in consensus method. Results: The prevalence of hyper-intense signal thyroid nodules incidentally detected on TOF-MRA was 1.2% (43/3505). Among them, 35 people (81.4%) underwent US examinations, and total 45 hyper-intense signal thyroid nodules were detected on US exams. Of these 45 nodules, 35 nodules (72.9%) were categorized as benign (K-TIRADS category 2) on US exams. Fine needle aspiration was performed on 9 nodules according to the indications recommended by Korean Society of Thyroid Radiology. All except one high-suspicious thyroid nodule were confirmed as benign (Bethesda 2) on cytologic exams. One high-suspicious nodule on US showed a non-diagnostic result (Bethesda 1) on cytologic exam. However, this nodule collapsed after aspiration of thick colloid material. Conclusions: Our study showed that the most hyper-intense signal thyroid nodules detected on TOF-MRA were benign. Therefore, if a hyper-intense signal incidentaloma is found on TOF-MRA, further evaluation, especially invasive biopsy of the nodules could be suspended unless the patient had other symptoms or clinical factors suggesting the need for further evaluation.

Keywords : incidentaloma, thyroid nodule, TOF MR angiography, ultrasound
Conference Title : ICR 2018 : International Conference on Radiology
Conference Location : Bangkok, Thailand
Conference Dates : December 13-14, 2018

Open Science Index, Biomedical and Biological Engineering Vol:12, No:12, 2018 publications.waset.org/abstracts/93144.pdf