

Comparison of identity of color doppler and gray scale ultrasound versus FNA samples in thyroid nodules in patients admitted to imam-khomeyni hospital of Ardebil in 2019-20

Abstract

Background: Thyroid nodules are one of the most common diseases. In the United States 5 to 10% of the population have a palpable thyroid nodule. Although malignancy occurs in only 7-15% of nodules. It is for 1% of all cancers and 5.5% of all cancer deaths. The incidence of thyroid nodules and thyroid malignancy has increased in recent years. Most recent US data show 63,000 new cases of thyroid cancer each year.

Aim: Due to FNA is invasive in the diagnosis of thyroid nodule malignancy, ultrasound may be used as a non invasive method.

Methods: Seventy five people were included in the study based on inclusion and exclusion criteria. Ultrasound findings of the patient's thyroid nodules were recorded by a radiologist. The nodules were aspirated under an ultrasound guide and their smear was stained and examined under a microscope. Finally, the results were analyzed using appropriate tests in SPSS software.

Results: Seventy five subjects were included in the study, of which 63 were female (84%) and 12 were male (16%). The mean age of the subjects was 46.41 ± 9.32 years. The highest number was related to the age group of 45-55 years with 49.33%. There was a significant relationship between the presence of peripheral halo and FNA resault, so that the rate of benignity in people with peripheral aura was significantly higher. There was a significant relationship between nodule type and nodule margin. So that the malignancy was significantly higher in people with nodules with irregular margins than in people with nodules with regular margins. The mean vascular resistance was 0.63 ± 0.17 in benign nodules with vascularity and 0.71 ± 0.12 in malignant nodules with vascularity. The difference between vascular resistance and FNA results was significant. There was no significant relationship between FNA resault and vascularity indices, structure, echogenicity, calcification and nodule size. Also, these results were not significantly associated with age, sex, level of education, address and history of dental graphy.

Conclusion: Existence of higher vascular resistance in Color Doppler ultrasound and observation of irregular margin and absence of peripheral halo in Gray scale ultrasound can be beneficial for malignancy in thyroid nodule. However, ultrasound cannot replace FNA.

Keywords: gray scale ultrasound, color doppler ultrasound, FNA, thyroid nodule