

PRESENCE OF POSTOPERATIVE HISTOPATHOLOGICAL MALIGNANCY IN PATIENTS WITH ATYPIA OF UNDETERMINED SIGNIFICANCE

ÖNEMİ BELİRSİZ ATİPİLİ HASTALARDAKİ POSTOPERATİF HİSTOPATOLOJİK MALİGNİTE VARLIĞI

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Öz

Amaç

Tiroid kanseri en sık görülen endokrin malignitesidir ve klinik görünümü nodüllerle karakterizedir. Tiroid patolojileri için yapılan biyopsilerde 'Önemi belirsiz atipi' (ÖBA) literatürdeki farklı malignite oranları nedeniyle klinisyenler için önemli bir endişe kaynağıdır. Bu çalışmada, AUS tanısı alan ve tiroid cerrahisi geçiren hastalarda malignite oranlarını güncel literatür ışığında sunmayı amaçladık.

Gereç ve Yöntem

2016-2021 yılları arasında kliniğimizde ince iğne aspirasyon biyopsisinde (İİAB) ÖBA tanısı alan ve tiroid cerrahisi uygulanan 174 hastanın demografik ve histopatolojik verileri retrospektif olarak analiz edildi. Hastalar histopatolojik özelliklerine göre malign ve benign olarak iki gruba ayrıldı. Gruplar arasındaki istatistiksel anlamlılık Ki-kare ve Student t-testleri kullanılarak belirlenmiştir. P değeri <0.05 olarak kabul edilmiştir.

Bulgular

Yaş ortalaması 47.9±12 yıl (dağılım, 20-81) idi. Malignite oranı %43,5 idi. Kadınların %42,1'inde, erkeklerin

ise %50'sinde malignite tespit edildi. Ortalama nodül çapı 19,1±13,7 mm (1-97 mm) idi. Cinsiyet, yaş ve nodül çapı ile malignite arasında istatistiksel olarak anlamlı ilişki saptanmadı (p>0.05).

Sonuç

Bethesda sınıflamasına göre ÖBA için malignite oranı %15-30 olarak belirtilmiştir. Çalışmamızda malignite oranı, ülkemizde yapılan benzer çalışmalara benzer olarak, %43.5 saptanmıştır. ÖBA tanısıyla tiroid cerrahisi planlanan vakalarda, yüksek malignite olasılığı nedeniyle, lobektomiye alternatif olarak total tiroidektomi de bir seçenek olarak düşünülmelidir.

Anahtar Kelimeler: ATA kılavuzu, Bethesda sınıflaması, İİAB, Önemi belirsiz atipi, Tiroid kanseri.

Abstract

Objective

Thyroid cancer is the most common endocrine Malignancy, and nodules characterize its clinical presentation. 'Atypia of undetermined significance' (AUS) in biopsies performed for thyroid pathologies is an essential concern for clinicians due to different

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malignancy rates in the literature. In this study, we aimed to discuss the malignancy rates in patients who underwent thyroid surgery for AUS.

Material and Method

The demographic and histopathologic data of 174 patients diagnosed with AUS on fine needle aspiration biopsy (FNAB) and who underwent thyroid surgery in our clinic between 2016 and 2021 were retrospectively analyzed. According to histopathologic features, patients were divided into two groups, malignant and benign, and the relationship with age, gender, and nodule diameter was investigated. Statistical significance between groups was determined using Chi-square and Student t-tests. P value <0.05 was accepted.

Results

The mean age was 47.9±12 years (range, 20-81).

The malignancy rate was 43.5%. Malignancy was detected in 42.1% of females and 50% of males. The mean nodule diameter was 19.1±13.7 mm (range, 1-97 mm). There was no statistically significant difference between gender, age, nodule diameter, and Malignancy ($p>0.05$).

Conclusion

According to the Bethesda classification, the malignancy rate for AUS is 15-30%. In our study, the malignancy rate was 43.5%, similar to studies published in our country. Because of the high malignancy rate, total thyroidectomy should be considered an alternative to lobectomy in cases planned for surgery with a diagnosis of AUS.

Keywords: ATA guideline, Atypia of undetermined significance, Bethesda Classification, FNAB, Thyroid malignancy.

Introduction

Thyroid cancer is the most common endocrine Malignancy and the ninth most common of all cancers (1). Although most cases are differentiated thyroid carcinoma, the life expectancy is over 90%. Ultrasonography-guided fine-needle aspiration biopsy (FNAB) is the most effective diagnostic tool for evaluating thyroid nodules (2).

The National Cancer Institute (NCI) published the Bethesda Classification in 2007 to report FNAB results. The Bethesda classification categorizes thyroid nodules as non-diagnostic, benign, atypia of undetermined significance (AUS) or follicular lesion of undetermined significance (FLUS), follicular neoplasia or suspected follicular neoplasia, suspected Malignancy, and malignant. AUS has been defined as smears containing cellular and/or nuclear atypia originating from follicular, lymphoid, or other cells but not containing sufficient findings for Malignancy or follicular neoplasia (3).

In this study, we aimed to present the malignancy rates in patients diagnosed with AUS and who underwent thyroid surgery in the light of current literature.

Material and Method

Between 2016 and 2021, demographic and histopathologic data of 174 patients with FNAB diagnosis of AUS (Bethesda Category 3) and who underwent thyroid surgery in the Department of

General Surgery of Health Sciences University, Gazi Yaşargil Training and Research Hospital were retrospectively analyzed. In addition, six patients were excluded due to a history of head and neck radiation, concomitant cancer, and previous thyroid surgery.

All patients underwent routine neck ultrasonography preoperatively, and in case of suspicious nodules, FNAB was performed by endocrinologists. In addition, patients diagnosed with two times AUS on FNAB results underwent related thyroid lobectomy surgery.

Statistical Analysis

Statistical analysis was conducted using SPSS for Windows, Version 15.0 (SPSS Inc., Chicago, IL, USA). Data were evaluated as mean±SD, and normality of distribution was used with the Kolmogorov-Smirnov test. Statistical significance between groups was determined using the chi-square and Student's t-tests. P value was accepted as <0.05.

Results

168 patients who underwent thyroidectomy and had AUS twice with FNAB were included in the study. 142 (84.5%) were female, and 26 (15.5%) were male (Table 1). Female to male ratio was 5.46:1. Malignancy was detected in 42.1% of females and 50% of males. There was no statistically significant difference between gender and Malignancy ($p=0.463$) (Table 2). The mean age was 47.9±12 (range, 20-81). The mean age of malignant patients was 48.5±11.2 years and 47.4±12.5 for non-malignants. There was

Table 1 Patients' Demographics and Histopathological Data

| | |
|----------------------------------------|------------------|
| Variables (Total) | 168 |
| Age (Year) | 47,9±12 (20-81) |
| Gender (Ratio) | 5,46/1 |
| Female (n/%) | 142 (%84,5) |
| Male (n/%) | 26 (%15,5) |
| Nodul Diameter (mm) | 19,1±13,7 (1-97) |
| Histopathologic Characteristics | |
| Papillary Carcinoma | 61 (%36,3) |
| WDT-UMP* | 7 (%4,2) |
| Follicular Carcinoma | 3 (%1,8) |
| Medullary Carcinoma | 1 (%0,6) |
| Anaplastic Carcinoma | 1 (%0,6) |
| Benign | 95 (%56,5) |

* Well-Differential Carcinoma of Uncertain Potential for Malignancy

Table 2 Relationship between Atypia of Uncertain Significance and Malignancy

| Variables | Benign (n) | Malign (n) | P |
|----------------------------|------------|------------|------|
| Gender | | | ,463 |
| Female | 82 | 60 | |
| Male | 13 | 13 | |
| Age | | | ,298 |
| ≤55 | 30 | 20 | |
| >55 | 65 | 53 | |
| Nodul Diameter (mm) | 20±13,1 mm | 18,9±14 mm | ,444 |

no statistically significant difference between age and Malignancy ($p=0.429$) (Table 2). Patients were divided into two groups based on age (Group 1: age>55 years, Group 2: age≤55 years), and no statistically significant difference was observed between Malignancy ($p=0.298$) (Table 2). The malignancy rate was 43.5%. Demographic and histopathologic characteristics of the patients are shown in Table 1.

The mean nodule diameter was 19,1±13,7 mm (range, 1-97 mm). The characteristics of nodule diameter are shown in Table 2. There was no statistically significant difference between nodule diameter and malignancy status ($p=0.444$).

Discussion

In this study, we aimed to discuss the association of thyroid malignancy in patients who operated for AUS. Although the Bethesda classification has defined AUS, there are differences among clinicians in management. The most important reason for this situation is the variability in the rates of Malignancy (6-75%) for AUS in the literature (4-7). The most prominent example of this variability is in the 2007 Bethesda classification; the malignancy rate for AUS was 5-15% (8), whereas this rate changed to 15-30% in the 2017 Bethesda classification (9).

The Bethesda classification recommends a second FNAB in patients with AUS (9). In our clinic, following the American Thyroid Association (ATA) guideline, the relevant thyroid lobectomy operation is recommended for patients with two biopsies of AUS (10).

In our study, age, gender, and nodule diameter were not associated with thyroid malignancy in patients with AUS. The association of age, gender, and nodule diameter with thyroid malignancy has been reported in the ATA guideline (10). The literature review revealed that no study showed any association between these factors and an increased risk of Malignancy in patients diagnosed with AUS.

It is a well-known fact that there are racial/ethnic differences in the incidence and prognosis of thyroid cancer. Abelardo et al. reported that the rates of AUS-related thyroid malignancies in the Philippines and other Asian countries are much higher than in the general literature (11). This condition demonstrates that Bethesda Classification's category rates may vary in different countries. In a similar study conducted in our country, the malignancy rate was 49.1% (6). In the present study, thyroid malignancy rates were similarly high. So, it should be considered in terms of the surgical procedure chosen for patients scheduled for thyroidectomy with the diagnosis of AUS in Turkey.

In patients with radiologically suspected malignancy and cytology results consistently twice with 'Atypia of Undetermined Significance', total thyroidectomy may be an option in addition to lobectomy. The management of cases should be discussed in a multidisciplinary endocrine council based on age, radiologic features of the nodule, and the status of the other thyroid lobe. Thus, we consider that a second surgical intervention can be prevented in selected patients.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Ethical Approval

The study was conducted in accordance with the Declaration of Helsinki, and approved by the Ethics Committee (Gazi Yaşargil Training and Research Hospital Clinical Research Ethics Committee, Date: 30.12.2022, Decision No: 286).

Consent to Participate and Publish

Informed consent forms could not be obtained due to the retrospective design of the study.

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Availability of Data and Materials

Data are available on request due to privacy or other restrictions.

Authors Contributions

Conceptualization: SİB; Data curation: SİB, DT; Formal analysis: DT, SİB; Investigation: SİB, DT; Methodology: DT, SİB; Validation: SİB, DT; Visualization: SİB, DT; Writing-original draft: SİB, DT

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