ABSTRACT

OBJECTIVES: To assess the predictive value of thyroid cytology by fine needle aspiration (FNA) at our institution in detecting thyroid malignancy, including papillary carcinoma in setting of thyroiditis and one case of mucosa-associated lymphoid tissue lymphoma.

METHODS: Records of patients who underwent thyroid FNA and subsequent surgery at University of Missouri between 2007 and 2012 were reviewed. Data collected included cytopathologic and histologic diagnoses as well as patient characteristics and the interval between FNA and surgery. The rate of malignancy was assessed in patients with dysplastic lesions and in patients with follicular adenomas.

RESULTS: 378 cases were eligible for review. Of these, 35 met inclusion criteria. The overall diagnostic accuracy of thyroid FNA was 86%. While benign and malignant cases on resection and the overall distribution of malignancy were in agreement, the rate of malignancy was significantly higher in the Bethesda System category of AUS than in the old nomenclature. The classification of malignancy was statistically higher in the Bethesda System. Malignancy was identified in 85% of cases with features suspicious for malignancy in the Bethesda System.

CONCLUSIONS: While benign and malignant cytologies are highly predictive, there exists wide variation in the interpretation of uncertain category malignancies. Malignancy risk associated with AUS ranges from 6% to 20% in the literature. These results suggest that results derived from institutional-specific data may be more predictive in guiding post-FNA management.

INTRODUCTION

Thyroid malignancy is the most common malignancy of the head and neck, with an annual incidence of 6.6 cases per 100,000 individuals. Thyroid nodules are common, with 20% of the adult population having one or more palpable thyroid nodules. The majority of thyroid nodules are benign. While benign and malignant cases on resection and the overall distribution of malignancy were in agreement, the rate of malignancy was significantly higher in the Bethesda System category of AUS than in the old nomenclature. The classification of malignancy was statistically higher in the Bethesda System. Malignancy was identified in 85% of cases with features suspicious for malignancy in the Bethesda System.

RESULTS

The diagnosis of thyroid nodule disease is increasingly common—a trend largely attributed to the advancing age of the population and the increased frequency of head, neck, and chest imaging procedures with the introduction of thyroid ultrasound. Thyroid malignancy is associated with considerable morbidity and mortality, and the diagnosis of malignancy may be elucidated by a larger series. The diagnosis of AUS and its malignancy risk were observed significantly more often in the Bethesda System than in the old nomenclature. The inter-variation in interpretation of uncertain categories may be elucidated by a larger series.

DISCUSSION

Cytologic malignancies and all benign cases were found to have high concordance with surgical pathologic findings. The diagnosis of AUS and its malignancy risk were observed significantly more often in the Bethesda System than in the old nomenclature. The inter-variation in interpretation of uncertain categories may be elucidated by a larger series.