Fine needle aspiration adequacy in a one-stop neck lump clinic: 2nd cycle improvement

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BACKGROUND

The one-stop neck lump clinic at Warrington Hospital was established in 2011 in line with NICE head and neck cancer guidelines.¹ They recommend that fine needle aspiration (FNA) is performed under ultrasound guidance in the presence of an onsite cytopathologist. This enables an immediate assessment of adequacy and repeat sampling as required on the same day to prevent diagnostic delay.²

The Royal College of Radiologists recommend a minimum adequacy rate of 70% for thyroid lesions. In 2014, a systematic review of 78 papers found an average FNA adequacy rate for all head and neck lesions of 90.7%.³

This re-audit aimed to evaluate whether local recommendations for improving the performance of ultrasound-guided fine needle aspiration (FNA) sampling were successful.

METHODS

Data collected retrospectively between August 2017 and January 2018 were compared to the first cycle audit (December 2015 – May 2016).

The adequacy of initial FNA samples were recorded and whether repeat aspirations were required. Samples were considered inadequate if the cytology report stated insufficient material for adequate diagnosis.⁴ The reasons for diagnostically inconclusive reports were documented.

Table 1: Demographics

	2 nd Cycle	1 st Cycle
Sample size	62	56
Gender (% female)	53	64
Average age	60	54
Age range	15-93	14-98

RESULTS

FNA cytology reports for 62 patients (53% female) in the second cycle were compared to 56 patients (64% female) in the first cycle (Table 1). All pathologies were included (Table 2), except for patients with suspected lymphoma (8 in second cycle; 10 in first cycle).

Table 2: Frequency of specific FNA lesions

Frequency	2 nd Cycle	1 st Cycle
Salivary glands	15	19
Thyroid	23	13
Lymph nodes	14	9
Other	2	5
Total	54	46

The adequacy rate for initial FNA reports increased from 76% to 89%. The specific adequacy rates for thyroids, salivary glands and lymph nodes improved by 18%, 18% and 4% respectively (Figure 1).

Fig. 1. FNA adequacy rates for specific lesions and overall

1 out of 9 (11%) repeat FNA reports were inadequate in the second cycle compared to 4 out of 13 (30%) in the first cycle (Figure 2).

Fig. 2. Frequency of repeat FNA reports

In both cycles, all of the patients with initial inadequate FNA reports (n = 17) were diagnosed with benign pathology on further investigation.

In the 2nd cycle, 6 patients underwent core biopsies at the first clinic appointment after FNA sampling was deemed inadequate by the on-site cytopathologist. This service was not available during the 1st cycle.

CONCLUSION

Discussion with the local pathology and radiology departments after the initial audit generated recommendations to improve adequacy rates.

The introduction of CytoRich fluid for thyroid specimen preparation significantly increased adequacy. Narrower bore needles reduce the risk of haemorrhagic samples and were used for repeat FNA sampling to successfully decrease inadequate reports.

References

- 1) Improving outcomes for head and neck cancer. NICE guidance CSG6 November 2004
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- 3) Ganguly A, Burnside G, Nixon P. A systematic review of ultrasound-guided FNA of lesions in the head and neck – focusing on operator, sample inadequacy and presence of on-spot cytology service. Br J Radiol 2014; 87: 20130571
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The ability to perform core biopsies was incorporated into the neck lump clinic and reduced diagnostic delay after initially inadequate FNA samples.

In conclusion, this audit highlighted limitations of the clinic and implemented positive recommendations that successfully improved FNA adequacy rates.

Improved FNA performance has enabled earlier diagnosis and enhanced the effectiveness of this one-stop clinic.