Neck Lump Clinic – A New Initiative at North Shore Hospital


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Introduction

All neck lumps whether benign or malignant can cause significant patient anxiety and the majority benefit from a multidisciplinary approach to their diagnosis, with an ultrasound scan (US) and fine needle aspirate cytology (FNA) cytology. Internationally, “one stop” clinics have been recommended as the preferred method for the investigation of neck lumps and other conditions such as haemangiomas and breast lumps. However, to date no such clinic has been established in the New Zealand public hospital system for neck lumps.

Objectives

A prospective pilot study at North Shore Hospital in Auckland, New Zealand was designed to explore the feasibility of a “one stop” neck lump clinic (NLC), with the aim of improving the patient pathway, demonstrate efficiency gains and a reduction in unnecessary investigations or clinic attendances.

Methods

A multidisciplinary monthly Neck Lump Clinic was instituted, staffed by a Head and Neck Surgeon, Radiologist, and Pathologist. Clinical evaluation, and a comprehensive neck US SS were performed synchronously, and if required, an ultrasound-guided FNA was performed with immediate reporting. Inclusion criteria were adult patients with a new presentation of a neck lump, referred by their general practitioner for further investigation. All attendees were given the opportunity to provide feedback by completing a patient satisfaction questionnaire.

A comparison group was obtained by performing a retrospective audit of patients seen in the ORL clinic with a neck lump between January 2015 and August 2017. For all patients; demographic data, number of outpatient attendances, investigations performed, and eventual diagnosis were extracted. Time intervals at each stage of the patient pathway were analysed. The treatment decision date was defined as the clinic date where a patient was placed on an operating list, discharged from clinic, or an expectant management plan documented. Patient satisfaction scores were obtained using a standardised questionnaire. A cost analysis was performed using time and resources required for each step of the diagnostic pathway obtained from the finance department at Waitakere DHB. The individual cost of the investigative pathway was calculated for each patient in New Zealand Dollars ($NZD) from the number of type and clinic visits and investigations they received. Descriptive statistics are reported, a two-tailed Student’s t-test was used to calculate p-values with significance <0.05 for normally distributed data and Mann-Whitney test for non-normally distributed data. Prospective institutional ethical approval for this project was obtained from the Research Office at Waitakere DHB.

Results

In this study 34 patients were seen in six clinic combinations between August 2017 and March 2018. There were 9 males and 25 females (n=34), with a median age of 53 years (range 23-77). The control group consisted of 26 males and 30 females (n=56), with a median age of 57 years (range 17-92). The median number of clinic visits required to make a treatment decision was 1 in the NLC, compared to 2 in the control group (p-value <0.001). In the control group, 32 patients (52%) were seen by a consultant at their FSA compared to 34 patients (100%) in the NLC.

The median time from GP referral to first specialist appointment (FSA) was 81 days in the control group and 70 days in NLC (p-value 0.441). There was a significant reduction in time from FSA to treatment decision in the pilot study, from a median 108.5 days in the control group to 0 days in the NLC (p-value <0.001). A significant improvement was seen in the number of patients receiving a diagnosis at their FSA with 30 patients (88%) seen in the NLC given a treatment decision at the first appointment compared to 7 patients (11%) in the control group (p-value <0.001). For patients requiring surgery the time from FSA to surgery was reduced from a median of 192 days in the control group to 134.5 days in the NLC (p-value 0.057).

A range of pathology was seen in the NLC, and the majority of these were benign salivary neoplasms or thyroid nodules. Of patients attending the NLC, 13 (38%) required surgery, 8 (27%) were managed expectantly with observation or further investigation and 11 (32%) were discharged after the first appointment.

An FNA was performed in 25 patients (74%) in the NLC and 41 (67%) of the control group (p-value 0.21). There was a significant reduction in the median number of investigations from FSA before treatment decision was made, from 2 in the control group to 1 in the NLC (p-value <0.001).

The median cost of the patient diagnostic pathway was $794 in the NLC compared to $1479 in the control group (p-value <0.001), a saving of $687 (p-value <0.001) per patient seen.

Discussion

One-stop neck lump clinics are common practice overseas, the NIC (New Zealand) guidelines have recommended that all Head and Neck units in the UK establish a clinic with a surgeon and on-site cytopathologist to improve efficiency of diagnosis and management of neck lumps, similar to the breast cancer model. We wanted to trial a similar clinic at North Shore Hospital to improve the service we provide for patients with neck lumps. However, when reviewing the literature, there is little evidence to support such guidelines. Cozens et al. performed a systematic review of the evidence for one-stop neck lump clinics in 2009 and found that the recommendations for a clinic model were based off two studies.

This project has demonstrated several potential advantages of utilising a multidisciplinary approach incorporating specialist surgical, radiology and pathology services to streamline the patient pathway in the investigation and diagnosis of neck lumps. To our knowledge this is the first study evaluating the efficiency of running a one-stop neck lump clinic compared to a control group. We found the NLC halved the number of clinic appointments and investigations, thus resulting in significant benefits for the patients and resource savings.

We found that 88% of our patients were given a diagnosis on the same day as the one-stop clinic compared to only 11% of the control group. The same day diagnosis rate reported in other studies ranges between 70 to 84% which is similar to our pilot.

All patients in the NLC were seen by a consultant compared to 52% of the control group, this may have contributed to the significant improvement in the efficiency of decision making observed. High levels of patient satisfaction were reported, and 96% of respondents stated they would recommend this model of service to their friends and family. Some international studies have reported that one-stop clinic has large periods of inactivity for the clinicians and that patients do not find that they have enough time to ask questions, but we did not observe this during this pilot.

Only 1 (3%) patient seen in the NLC had malignant disease and we hypothesised this was due to the interval between clinics. Patients referred with a high index of suspicion for malignancy are graded as high priority and allocated to the next available FSA within the department, which often meant they were seen before the next scheduled NLC in this pilot. Other studies11-13 have shown a rate of 13-16% malignant disease in their clinic, which remains higher than our baseline in the control group of 11%. The intention, given the success of this pilot, is to increase the frequency of clinics and improve compliance with the New Zealand Faster Cancer Treatment guidelines, this would allow us to see more malignant cases.

We acknowledge the small sample size of this pilot is a limitation, however we believe this study has shown significant savings in resource consumption and a more streamlined patient pathway. Based on the results of this pilot study, a business case has been submitted to allow this fortuitously clinic, increasing the capacity with the potential to reduce waiting times further.

References

2. W Co, C. Tan, M. Moon, D. Ong. One-stop head and neck clinic in Penang Hospital. Western Australia, a report of the first 500 cases. Scircles 2003; 183(2): 49-52

Table 1: Pathology and Outcomes

<table>
<thead>
<tr>
<th>Pathology Type</th>
<th>NLC</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salivary Neoplasm</td>
<td>13 (38%)</td>
<td>20 (35%)</td>
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<tr>
<td>Thyroid Nodule</td>
<td>11 (32%)</td>
<td>7 (12%)</td>
</tr>
<tr>
<td>Malignant</td>
<td>1 (3%)</td>
<td>1 (2%)</td>
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</table>

Table 2: Results

<table>
<thead>
<tr>
<th>Test</th>
<th>NLC</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median days from FSA to decision</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Median days from FSA to surgery</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Number of patients requiring FSA</td>
<td>30 (88%)</td>
<td>7 (11%)</td>
</tr>
<tr>
<td>Number of patients receiving decision</td>
<td>27 (79%)</td>
<td>4 (7%)</td>
</tr>
<tr>
<td>Number of patients requiring surgery</td>
<td>13 (38%)</td>
<td>20 (35%)</td>
</tr>
<tr>
<td>Number of patients requiring biopsy</td>
<td>4 (12%)</td>
<td>2 (3%)</td>
</tr>
</tbody>
</table>

Figure 1: Number of patients requiring FSA

Figure 2: Do you prefer one-stop clinic vs multiple clinics