

ORIGINAL ARTICLES

Cervical Lymphadenopathy Resulting in a Diagnosis of Lymphoma

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Tel: 0141 232 0705 Fax: 0141 232 0707 Email: shirleyanne.savage@ggc.scot.nhs.uk**Abstract****Background and Aims**

Currently there is no protocol in the west of Scotland for the investigation of a patient with a lymph node in the neck which might contain lymphoma. The aim of this audit was to examine the current management of these patients.

Methods

Data were collected on 112 patients diagnosed as having lymphoma from a neck node biopsy within a 12 month period from 1st November 2004 to 31st October 2005. Biopsy data were collected in combination with the first point of consultation, investigations used to arrive at diagnosis and any associated complications.

Results

Eighty seven percent of patients underwent excision biopsy with complications noted in 7%. Fine needle aspiration cytology (FNAC) was carried out in 60% of which 34% were ultrasound guided. Core biopsy was carried out in 17% of which 63% were ultrasound guided. Forty-five percent of patients were first referred to ear, nose and throat (ENT) surgery, 17% to general surgery, 14% to haematology, 13% to general medicine and 11% to other specialties.

Conclusion

This audit shows that there was a wide range of first points of consultation and diagnostic procedures used. It is recommended that there should be access for all patients with cervical lymphadenopathy to a weekly neck lump clinic with standardised protocols for lymphoma diagnosis. This should ensure that patients are diagnosed accurately and treated in a timely manner.

Lymphoma can be subdivided into Hodgkin lymphoma (HL) and non-Hodgkin Lymphoma (NHL). HL represents approximately 15% of lymphoma cases and NHL 85%. The largest two subgroups of NHL are high grade Diffuse Large B Cell (DLBC) and low grade follicular, which account for 40% and 25% of cases respectively.

Chemotherapy (+/- radiotherapy) can achieve high rates of cure for both HL¹ and DLBC NHL.² Follicular NHL, however, is an indolent disease generally regarded as incurable³ and it is often appropriate in these patients to adopt a 'watch and wait' policy before introducing chemotherapy.⁴ Although most lymphomas present with painless lymphadenopathy, between 30% and 40% of cases of NHL present with extranodal disease.⁵

Appropriate patient management of cervical lymphadenopathy has to be timely, with the minimum morbidity, but must also be accurate. Current opinion would suggest that a neck lump clinic with a clinician and radiologist who can carry out ultrasound with fine needle aspiration cytology (FNAC) and/or core biopsy is desirable.⁶

Currently there is no protocol in the west of Scotland for the investigation of a patient with a lymph node in the neck which might contain lymphoma. The draft guidelines from the British Committee for Standards in Haematology state, "Excision biopsy is the preferred method: trucut biopsy if node not accessible: not fine needle aspirate. Needle biopsies are prone to artefact and may be too small to permit the full range of investigations needed for the diagnosis in many cases."⁷ The value of ultrasound guided core biopsy is not addressed specifically in these guidelines. The limitations of FNAC for the diagnosis of lymphoma have been described previously.^{8,9,10,11}

Other centres in the United Kingdom are currently diagnosing many of their lymphomas from an ultrasound guided core biopsy.¹² The advantage of this technique is that it is less invasive with minimum morbidity. It is, however, very dependent on operator skills and may not provide an adequate sample for the full range of investigations required for diagnosis in all cases.⁷

The aim of this audit was to examine the management of patients who were diagnosed as having lymphoma presenting in cervical lymph nodes. This was carried out as a collaborative project between the West of Scotland Head and Neck and Blood Cancer Networks.

Introduction

Neck lumps are common. However the majority of patients with neck lumps have benign reactive lymphadenopathy. Lymphadenopathy presenting in the neck which turns out to be lymphoma is rare.

Methods

A total of 463 patients were diagnosed with lymphoma in the west of Scotland within a 12 month period from 1st November 2004 to 31st October 2005. Of these 463 patients, 112 (24%) patients had their diagnosis from a neck node biopsy. Data were available on all 112 cases (100%).

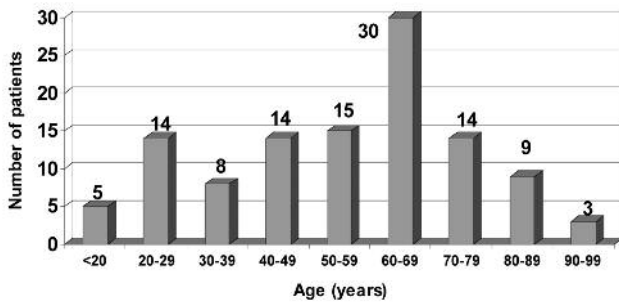
Patients were identified through the West of Scotland Haematological Cancer Audit Database. Biopsy data were collected in combination with the first point of consultation in the west of Scotland (including specialty and geographical site), investigations used to arrive at diagnosis (ultrasound, FNAC, core and excision biopsy) and any associated complications. Data were collected retrospectively from patient casenotes.

Results

(a) Demographics

Of the 112 patients, 49% were male and 51% female. The median age at presentation was 59 years (range 15-94). The age distribution is shown in Figure 1.

Figure 1: Number of Patients by Age at Diagnosis



(b) Lymphoma subtype

When we examined the 463 cases of lymphoma from the 12 month period, 35 of 63 (55%) of HL cases, 28 of 81 (35%) of follicular lymphoma cases and 23 of 173 (13%) of DLBC cases were diagnosed from a neck node biopsy.

Of the 112 patients diagnosed from a neck node biopsy, 32% had HL and 68% NHL (26% follicular lymphoma, 24% DLBC lymphoma and 18% other subtype). Of the other 351 cases of lymphoma, diagnosed from biopsy of tissue other than neck nodes, in the same time period, 8% had HL and 92% NHL (16% follicular lymphoma, 44% DLBC lymphoma and 32% other subtype). The proportions of HL and NHL diagnosed from neck node biopsy and the biopsy of other tissues were found to be significantly different ($p < 0.001$).

(c) Referral

Forty-five percent of patients were first referred to ear, nose and throat (ENT) surgery, 17% to general surgery, 14% to haematology, 13% to general medicine and 11% to other specialties (4% accident and emergency, 3% maxillofacial, 2% plastic surgery, 1% communicable diseases and 1% dermatology).

The first point of contact was to one of 17 hospitals in the west of Scotland. The greatest number of referrals was to Glasgow Royal Infirmary with 14%, then to Crosshouse Hospital with 11% (Table I).

Table I: Number (%) of Patients by Hospital

Hospital	No	Percent
Glasgow Royal Infirmary (GRI)	16	14.3
Crosshouse Hospital(CH)	12	10.7
Dumfries & Galloway Royal Infirmary (DGRDI)	11	9.8
Monklands Hospital (MH)	8	7.1
Falkirk & District Royal Infirmary (FDRI)	7	6.2
Wishaw General Hospital (WGH)	7	6.2
Royal Alexandra Hospital (RAH)	7	6.2
Gartnavel General Hospital (GGH)	6	5.4
Inverclyde Royal Hospital (IRH)	6	5.4
Southern General Hospital (SGH)	5	4.5
Glasgow Victoria Infirmary (GVI)	5	4.5
Stirling Royal Infirmary (SRI)	5	4.5
Hairmyres Hospital (HH)	5	4.5
Vale of Leven Hospital (VoL)	4	3.6
Stobhill Hospital (SH)	3	2.7
Lorn & Islands Hospital (L&I)	3	2.7
Ayr Hospital (Ayr)	2	1.8
Total	112	100.0

(d) Investigations

Of the 112 patients, 97 (87%) had an excision biopsy, 67 (60%) an FNAC, 19 (17%) a core biopsy, and 39 (35%) an ultrasound. Sixty percent of patients had multiple invasive investigations (ie FNAC, core or excision). Table II shows the different combinations of diagnostic investigations used.

Table II: Diagnostic Investigations

Investigation	Frequency	Percent
U/S, FNAC	1	0.9
Core only	3	2.7
U/S, Core	5	4.5
Excision only	32	28.6
U/S, Excision	4	3.6
FNAC, Core	1	0.9
U/S, FNAC, Core	5	4.5
FNAC, Excision	37	33.0
U/S, FNAC, Excision	19	17.0
U/S, Core, Excision	1	0.9
U/S, FNAC, Core, Excision	4	3.6
Total	112	100.0

The definitive method of diagnosis was excision biopsy in 97 (87%) of the patients, core biopsy in 14 (12%) patients and FNAC in only one (1%) patient.

Five of the 19 patients who had a core biopsy subsequently went on to have an excision biopsy because the core was insufficient to provide a full diagnosis. When we compare the results of the core versus the excision, one case was diagnosed correctly on the core, two core biopsies were not diagnostic and two were diagnosed as NHL but the subtype could not be assessed accurately.

Of the 67 patients who had a FNAC, 23 (34%) were noted as ultrasound guided, 37 not ultrasound guided and seven not recorded. Of the 19 patients who had a core biopsy, 12 (63%) were noted as ultrasound guided, three not ultrasound guided and three not recorded.

Of the 19 core biopsies carried out, 11 (58%) were carried out in Glasgow Royal Infirmary.

Table III: Diagnostic Investigations by Hospital

Investigation	GRI	CH Ayr	DGRI	MH/ WGH HH	RAH IRH/Vol /L&I	FDRI/ SRI	SH/ GGH	SGH/ GVH	Total
U/S, FNAC	1	0	0	0	0	0	0	0	1
Core only	1	0	0	0	1	1	0	0	3
U/S, Core	3	0	0	2	0	0	0	0	5
Excision only	1	2	5	5	8	1	5	5	32
U/S, Excision	0	0	0	3	1	0	0	0	4
FNAC, Core	0	0	0	0	1	0	0	0	1
U/S, FNAC, Core	4	0	0	0	0	1	0	0	5
FNAC, Excision	2	10	4	4	4	9	0	4	37
U/S, FNAC, Excision	1	1	2	6	4	0	4	1	19
U/S, Core, Excision	0	0	0	0	1	0	0	0	1
U/S, FNAC, Core & Excision	3	1	0	0	0	0	0	0	4
Total	16	14	11	20	20	12	9	10	112

Some hospitals used ultrasound guided FNAC more frequently than others. For example, ultrasound guidance was used in nine of 11 patients in Glasgow Royal Infirmary whereas only two of 12 patients in Crosshouse/Ayr and one of 10 patients in Falkirk/Stirling had ultrasound guided FNAC (Table III).

Complications were noted in seven of 97 patients who underwent excision biopsy. These were nerve damage (n=3), infection (n=2), swelling (n=1) and pain in shoulder and neck (n=1). There were no noted complications for the other procedures.

Discussion

It was necessary to audit the management of patients with lymphoma presenting in cervical lymph nodes as there were differing practices across the west of Scotland. In one year, 112 patients were diagnosed by neck node biopsy and all of these cases were characterised and analysed.

Thirty-two percent were classified as HL and 68% as NHL. This varied significantly from those lymphomas (n=351) not diagnosed from a cervical lymph node. In these cases only 9% were HL and 91% NHL ($p < 0.001$). This is not unexpected as HL almost always presents as nodal disease and is often supradiaphragmatic whereas approximately one third of NHL has an extranodal origin.⁵ NHL is therefore less likely than HL to present as cervical lymphadenopathy.

The draft guidelines from the British Committee for Standards in Haematology state, "Excision biopsy is the preferred method of diagnosis, a core biopsy if the node is not accessible or if there are clinical or technical reasons why excision biopsy is inappropriate."⁷ Excision is preferable as it allows a more detailed assessment of architecture and permits the full range of investigations required for diagnosis.⁷ FNAC is not recommended for diagnosis.^{7,9,10,11} In this audit we examined the use of ultrasound, FNAC, core biopsy and excision biopsy. The audit clearly showed that there was a wide range of diagnostic procedures used with many patients undergoing multiple invasive investigations. There were also variations in practice within the individual units.

Eighty-seven percent of patients underwent excision biopsy. The risk with excision biopsy is the morbidity associated with this technique.⁸

Complications were noted in 7% of the patients. However, this is likely to be an underestimate as complications may not be recorded in the patients' notes. The risk from excision biopsy therefore has to be weighed against the risk from an incomplete diagnosis. A more in depth audit of excision versus core biopsy in the diagnosis of lymphoma is currently being carried out.

Core biopsy was carried out in 19 (17%) patients and was the definitive diagnosis in 14 of these 19 patients (12% overall). It failed to provide adequate tissue for diagnosis in five patients showing that in some cases there was a need to undergo an excision biopsy to provide enough tissue for a full accurate diagnosis. Core biopsy was primarily carried out by one unit with 58% of the cases. This unit has a weekly neck lump clinic with a radiologist who is able to perform ultrasound guided core biopsy if desirable.

In this cohort of 112 patients, 60% had an FNAC. However, in only one case this was the definitive method of diagnosis. In the other cases, the FNAC would most likely be carried out to exclude other head and neck malignancies,¹¹ eg squamous cell carcinoma.

The use of ultrasound guidance for core biopsy and FNAC was examined as part of this audit. There were three cases where ultrasound guidance was not used for core biopsy despite this now being recognised as inappropriate practice. Ultrasound guided FNAC is now accepted as best practice. However, of the 67 patients who had an FNAC as part of their investigations, only 23 were noted as ultrasound guided. The practice of non-ultrasound guided FNAC was observed within most teams but the frequency of this varied. It is therefore suggested that protocols for the diagnosis of lymphoma, with particular reference to the use of ultrasound guidance for core biopsy and FNAC, should be developed for the west of Scotland.

Currently there is an unacceptably wide range in practice across the west of Scotland. It is therefore suggested that the point of consultation for these patients be standardised and investigation protocols for their management be developed. Previous studies have shown that neck lump clinics are ideal for diagnosing and triaging the management of neck lumps.^{13,14} Currently in the west of Scotland the level and quality of the neck lump services are variable. Access for all patients with cervical lymphadenopathy to a weekly neck lump clinic, with investigation protocols for lymphoma diagnosis, would ensure that patients are diagnosed accurately and treated in a timely manner.

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