

Main Article

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Abstract

Objective. Out-patient channelled endoscopic local anaesthetic biopsy reduces the time to diagnosis and wider use may improve cancer pathway times. This study aimed to assess the practice of ENT surgeons using channelled local anaesthetic biopsy.

Method. A survey was distributed nationally, containing questions about out-patient local anaesthetic biopsy.

Results. In total, 58 responses were returned; only 12 per cent of respondents ($n = 7$) used general anaesthetic biopsy. The advantages of local anaesthetic biopsy were: the avoidance of general anaesthetic for patients with poor performance scores (95 per cent, $n = 55$) and faster cancer pathway times (91 per cent, $n = 53$). Disadvantages were: clinics running late (29 per cent, $n = 17$) and complications (24 per cent, $n = 14$). The main barrier to using local anaesthetic was access to channelled flexible endoscopy (38 per cent, $n = 22$), with 43 per cent ($n = 25$) reporting they were not using out-patient channelled endoscopes but would be interested in using them.

Conclusion. Surgeons are interested in using channelled endoscopic local anaesthetic biopsy, but they are limited by access to equipment. Increased use of channelled endoscopes may improve national cancer pathway times and avoid challenging general anaesthetics.

Introduction

Head and neck cancer is the eighth most common cancer in the UK, with 3 per cent of new cancers diagnosed having a head and neck cancer origin.¹ Guidance from the National Institute for Health and Care Excellence recommends that all patients with symptoms or signs of cancer be referred by their general practitioner and seen by a specialist within two weeks.² This two-week target is designed to expedite the diagnosis of suspected cancer, to allow for prompt diagnosis and initiation of treatment. In Scotland, there is a target that decision to treat is made within 31 days of referral, and that 95 per cent of patients should wait a maximum of 62 days from referral to initiation of treatment.³ However, in Scotland in 2022, this target was met for only 76.3 per cent of patients, a significant drop from 83.7 per cent in December 2019. In England, 62.1 per cent of patients had started first definitive treatment with 62 days of being urgently referred, down from 67.1 per cent in December 2021.⁴

The increase in the number of referrals has exceeded the increase in population, with a rise of almost 10 per cent between 2019 and 2022 compared to a population increase of 0.4 per cent annually.⁵ The main risk associated with delayed treatment for cancer is progression of the disease leading to upstaging of the cancer at diagnosis.⁶ Policies to minimise delays to cancer treatment could improve survival outcomes in the population.

Tissue diagnosis confirms diagnosis and influences the management options offered by the multidisciplinary team (MDT). Tissue sampling is traditionally performed under general anaesthetic (GA), with direct visualisation using panendoscopy. An alternative is local anaesthetic (LA) biopsy at initial out-patient appointment. This can be carried out using biopsy forceps through the oral cavity or channelled endoscopic equipment. Local anaesthetic biopsy can reduce time to diagnosis and avoid unnecessary GA in frail patients.^{7,8} However, adoption of this technique has been slow in the UK ENT community, despite its benefits.

Objectives

This paper aims to assess the practice of ENT surgeons using channelled endoscopic LA biopsy.

Methods

An online survey was created on Microsoft Forms software (Appendix 1). The survey included questions relating to biopsy techniques, and the advantages and disadvantages

Table 1. Responses for advantages and disadvantages of LA biopsy

Responses	Respondents (% (n))
Advantages	
- Avoids GAs, e.g. for patients with poor performance scores	95 (55)
- Faster cancer pathway	91 (53)
- Avoids difficult intubations, e.g. for large-volume tongue base tumours	74 (43)
- Avoids panendoscopies on theatre lists, which could create space for other procedures	70 (40)
- High diagnostic hit rate in literature, comparable to GA biopsy	29 (17)
Disadvantages	
- May make clinics run late	29 (17)
- Potential for complications, e.g. bleeding	24 (14)
- Synchronous primary cancer may be missed	19 (11)
- No access to another doctor or nurse at clinic to open & close endoscopic biopsy forceps	14 (8)
- May not be well tolerated by patients	14 (8)

LA = local anaesthetic; GA = general anaesthetic

of using channelled LA biopsy. The survey was distributed through ENT Scotland and ENT UK mailing lists to all members, and responses were gathered between March and June 2022. Descriptive analysis of the survey results was used to present the responses in a narrative approach.

Results

In total, 58 responses were returned, from 26 different UK trusts, comprising 49 (84 per cent) responses from consultants, with 57 per cent ($n = 33$) of these responses from subspecialists in head and neck surgery.

Overall, 30 (52 per cent) respondents thought there were diagnostic delays in cancer patients meeting the 31-day diagnostic target. When asked about techniques for obtaining tissue diagnosis, 7 (12 per cent) respondents advised they would only use GA biopsy, and 51 (88 per cent) said they would use GA and LA biopsy. Only 51 (88 per cent) respondents used LA biopsy. In addition, 37 per cent ($n = 22$) of respondents used intra-oral forceps only, 1 per cent ($n = 1$) used endoscopic biopsy forceps only, and 48 per cent ($n = 28$) used both intra-oral forceps and endoscopic biopsy forceps.

Respondents were asked what they thought were the advantages and disadvantages of LA biopsy. The most popular responses are given in Table 1 (respondents were allowed to give multiple answers). It was found that 22 (38 per cent) respondents reported that one barrier to using LA biopsy was lack of access to channelled endoscopic biopsy equipment, and 25 (43 per cent) respondents reported that they were not using LA biopsy with a channelled endoscope, but were interested in starting to use this technique.

Discussion

Current practice

Current practice in the UK for obtaining tissue biopsies was assessed in order to determine how many ENT surgeons are

using LA biopsies and to identify any barriers to the implementation of LA biopsy. Overall, 48 per cent ($n = 28$) of the respondents were carrying out LA biopsies with both endoscopic and intra-oral forceps, and 43 per cent ($n = 25$) were not using LA endoscopic biopsies but would like to. This survey identified some potential barriers that may be preventing the widespread application of LA biopsy.

Benefits of local anaesthetic biopsy

The traditional method of obtaining a tissue diagnosis is via laryngoscopy under GA. A GA is resource-heavy, and requires operating theatre space, staffing for the operating theatre, anaesthetic input and recovery time. Naidu *et al.* found that using LA endoscopic biopsies resulted in a cost saving of 77 per cent.⁹

Following MDT discussion, 18–21.5 per cent of head and neck cancer patients are treated with palliative intent.¹⁰ Tissue diagnosis can confirm diagnosis and help the MDT make decisions about treatment, including palliative options. Patients with head and neck cancer are more likely to have a difficult airway to secure by anaesthetics, putting the patient at a potentially unnecessary risk.¹¹ At least 1.6 per cent of patients undergoing panendoscopy require a tracheostomy, which can result in a longer in-patient hospital stay. Survey respondents thought a benefit of LA endoscopic biopsies was avoiding a GA, specifically in patients with a poor performance score (95 per cent, $n = 55$) or difficult intubation (74 per cent, $n = 43$). Local anaesthetic biopsies can also lead to significant reductions in the time from general practitioner referral to treatment decision, with the average length of pathway, from referral to decision to treat, taking 35.7 days with LA biopsy compared to 61.5 days with GA biopsy.⁷ Furthermore, 91 per cent ($n = 53$) of survey respondents thought that LA endoscopic biopsies could lead to a faster cancer pathway.

Barriers of local anaesthetic biopsy

This survey identified several barriers to the adoption of LA endoscopic biopsies.

The most commonly cited barrier was a worry that carrying out biopsies would make the clinic run late. The addition of a LA biopsy procedure increases the duration of a standard out-patient clinic appointment. Local anaesthetic is applied and given time to work, multiple biopsies are taken, and Trusts may require additional room cleaning. Having a double clinic slot set aside at the end of clinic may allow sufficient time for a biopsy to be carried out.

In total, 14 (24 per cent) respondents were worried about complications of LA biopsy, for example bleeding. However, most research indicates that LA biopsies are safe, and there are very few major complications reported in the literature.⁸ Furthermore, the most common complications, for example bleeding, are minor and often self-limiting.

Overall, 19 per cent ($n = 11$) of respondents were concerned about missing a synchronous primary cancer. Head and neck cancer patients have a high rate of synchronous primary cancers.¹² With the advent of high-resolution imaging and fibre-optic endoscopes in clinic, synchronous primary cancers are often detected before a patient has a panendoscopy.

One barrier highlighted through the study was the requirement of an assistant for the LA biopsy procedure. In fact, 14 per cent ($n = 8$) of clinicians stated they could not carry out LA endoscopic biopsies, as they did not have access to another

doctor or nurse at clinic to open and close the biopsy forceps. Resources and staffing in out-patient clinics may be limited, but the cost benefits of avoiding operating theatre use may allow for extra out-patient staffing. Local anaesthetic endoscopic biopsy is similar to gastrointestinal endoscopy without sedation. The American Society for Gastrointestinal Endoscopy Standards of Practice Committee suggests minimal staffing requirements of one assistant, who can be a registered nurse or healthcare support worker.¹³

Overall, 14 per cent ($n = 8$) of respondents were concerned patients may not tolerate LA biopsy well. It is important that a patient tolerates the procedure, to avoid undue distress for the patient, and that there is optimal access to gain an adequate biopsy sample for diagnosis. A systematic review of the literature found less than 1 per cent of procedures were abandoned because of poor tolerability.⁸

- Delays in the head and neck cancer pathway result in patients not meeting the 62-day target of referral for treatment
- In this study, 43 per cent ($n = 25$) of respondents were not using local anaesthetic (LA) biopsy with channelled endoscope, but were interested in using it
- Advantages of LA biopsy include avoiding general anaesthetic and difficult intubation, and faster cancer pathway times
- Disadvantages of LA biopsy include clinic running late, complications and missing a synchronous primary cancer
- The main barrier to using LA biopsy is lack of access to channelled flexible endoscopy

With sufficient LA, biopsy is normally well tolerated. Out-patient transnasal oesophagoscopy, using a scope with an outer diameter of 5.4 mm, is a well-tolerated procedure under LA in the out-patient setting.¹⁴ The small biopsy forceps used with the channelled endoscope cause minimal trauma and tumour distortion. Tumour distortion from large excisional biopsies performed before imaging can result in the over-staging of a tumour and cause uncertainty at MDT discussions.

Environmental impact

The UK government has committed to reaching net zero carbon emissions by 2050. As the National Health Service (NHS) is estimated to be responsible for at least 4 per cent of the UK's carbon footprint, in July 2022 the NHS became the first health system where net zero is embedded by legislation.¹⁵ Services at all levels should seek to minimise their carbon footprint. The impact of surgical operating theatres on climate change is well known, with factors such as equipment, ventilation, staffing and anaesthetic gases playing a part. Alternatives to procedures requiring an operating theatre and GA should be considered, and LA endoscopic biopsies are such an alternative.

Conclusion

There is a clear view from clinicians moving their practice towards out-patient-based investigation. Local anaesthetic

endoscopic biopsies offer clinicians an economical and well-tolerated option to obtaining a tissue diagnosis in head and neck cancer patients, that avoids a GA. There are potential barriers to LA biopsy in the clinic, but given the significant benefits, it is important that solutions are found to overcome these concerns. The authors believe that access to endoscopic biopsy should be improved so that this service can be offered by all ENT clinicians in the UK.

Supplementary material. The supplementary material for this article can be found at <https://doi.org/10.1017/S0022215123001500>

Competing interests. None declared

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