

## Objectives

With increasing focus on the time from referral to diagnosis and treatment, outpatient biopsy under local anaesthetic (OPB) provides a potential way to reduce diagnostic times in selected patients with accessible lesions (1).

The aim of this study was to report outcomes from a 3-year period of outpatient biopsy in a single tertiary referral ENT unit.

## Introduction

The incidence of oropharyngeal cancer has been increasing in young non-smokers due to rising prevalence of human papillomavirus infection (2,3).

The highest rates remain in older males and are related to tobacco and alcohol consumption.

Minimising diagnostic delay enables early initiation of appropriate treatment.

Every patient referred to Head and Neck clinic with suspicion of cancer undergoes clinical examination and flexible nasoendoscopy to visualise tonsils, tongue base, pharynx and larynx.

Once suspected malignant lesion is identified, the patient is referred for the current 'gold standard' investigation – direct laryngoscopy with biopsy under general anaesthetic (4). This procedure carries risks of general anaesthetic as well as need for day-case admission and a visit to pre-assessment clinic with potential delay to diagnosis.

We propose that biopsy performed during outpatient appointment under local anaesthetic is safe, effective and time-efficient way to provide rapid diagnosis for a selected group of patients. Furthermore, provision of OPB is likely to reduce cost to NHS.

## Methods and Materials

Review of a prospectively held record of OPB between January 2016 and November 2018 in NHS Lothian. A comparison of times from clinic appointment to diagnosis was made using the T-Test.

## Results

51 patients underwent outpatient biopsy.

Of these, 20 were male (39%). The median age was 46 years (range 22-83).

The site was oropharynx in 40 (78%) patients, sinonasal tract in 9 (18%) and oral cavity 2 (4%).

The diagnosis was benign in 42 (82%) and malignant in 9 (18%).

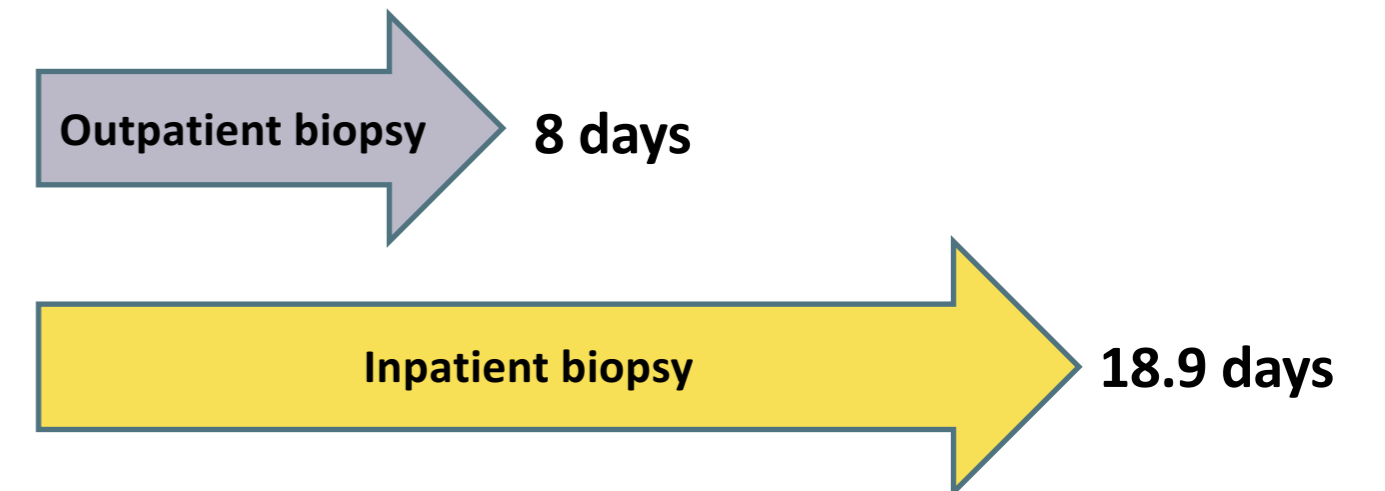
No patient biopsy samples were found to be benign on initial biopsy but subsequently diagnosed with cancer.

There were 0 complications.

We compared this group to 10 patients, who underwent an inpatient biopsy for head and neck cancer (sites= oropharynx 60%, larynx 30% sinonasal tract 10%).

**The mean time from OPB to diagnosis was 8 days (SD=4.5d) compared with 18.9 days (SD=6.8d) for inpatient biopsy (p=0.001).**

## Time to diagnosis



## Discussion

• **Clinical effectiveness** – We did not identify any RCTs comparing clinical outcomes between patients who had undergone OPB and inpatient biopsy.

• **Diagnostic accuracy** – In our study no patient biopsy samples were found to be benign on initial biopsy but subsequently diagnosed with cancer. Prospective and retrospective observational studies (5-9) suggest that OPB has high enough specificity to rule out malignancy, but low sensitivity. Therefore patients with negative findings require further biopsy under general anaesthetic.

• **Time to diagnosis** – Scottish government has set up a target for 95% of patients who receive an urgent cancer referral to receive treatment within 62 days. Our results show that OPB can lead to a rapid diagnosis, on average achieved 11 days earlier than for an inpatient biopsy group.

• **Safety** – Our patients had no complications. Other authors quote rates of complications ranging from 0 to 2.6% and most complications were described as self-limiting (most commonly epistaxis). (6-9)

• **Cost effectiveness** Formal cost comparisons were not a focus of this study. According to Scottish Health Technologies Group, who have carried out budget impact analysis the average resource saving per annum over five years is expected to be in excess of £400,000 for NHS Scotland. These savings account for initial investment in new laryngoscopes, imaging stack and peripheral imaging equipment (1)

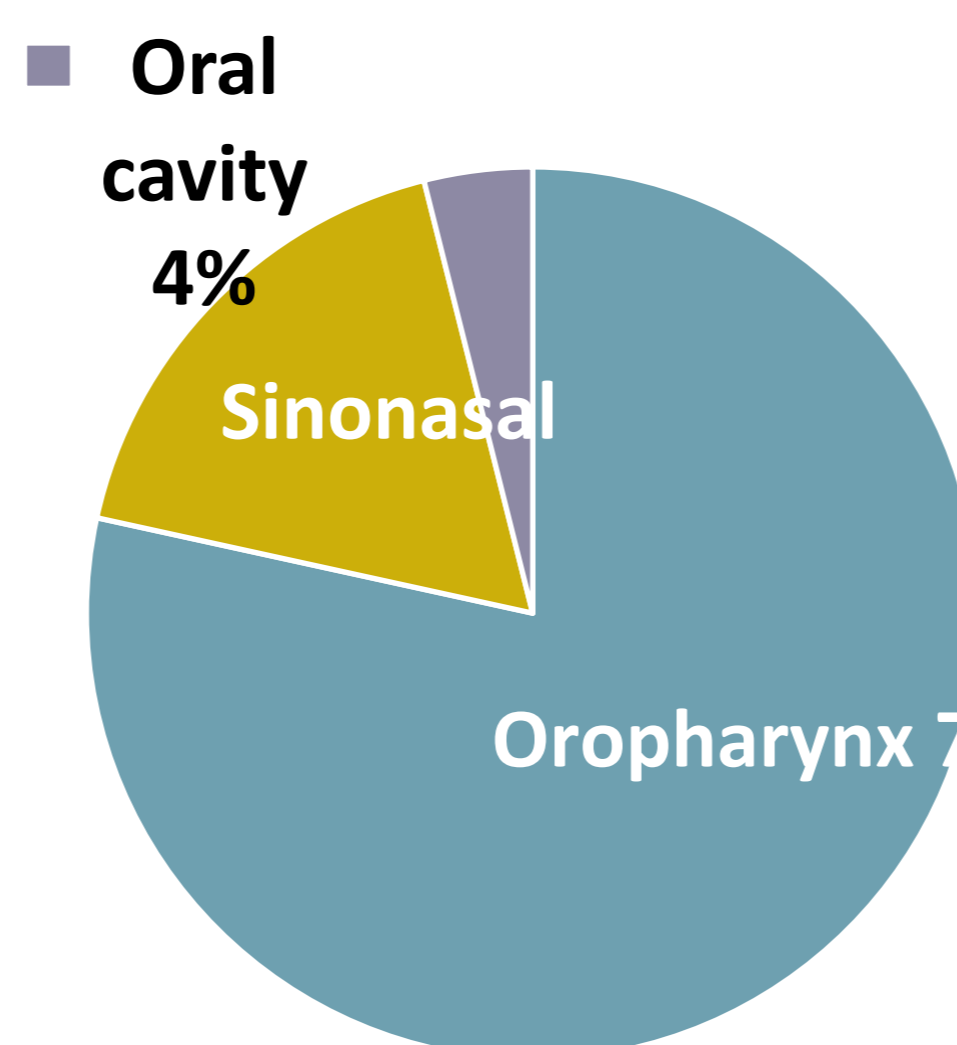


Chart 1. Site of biopsy

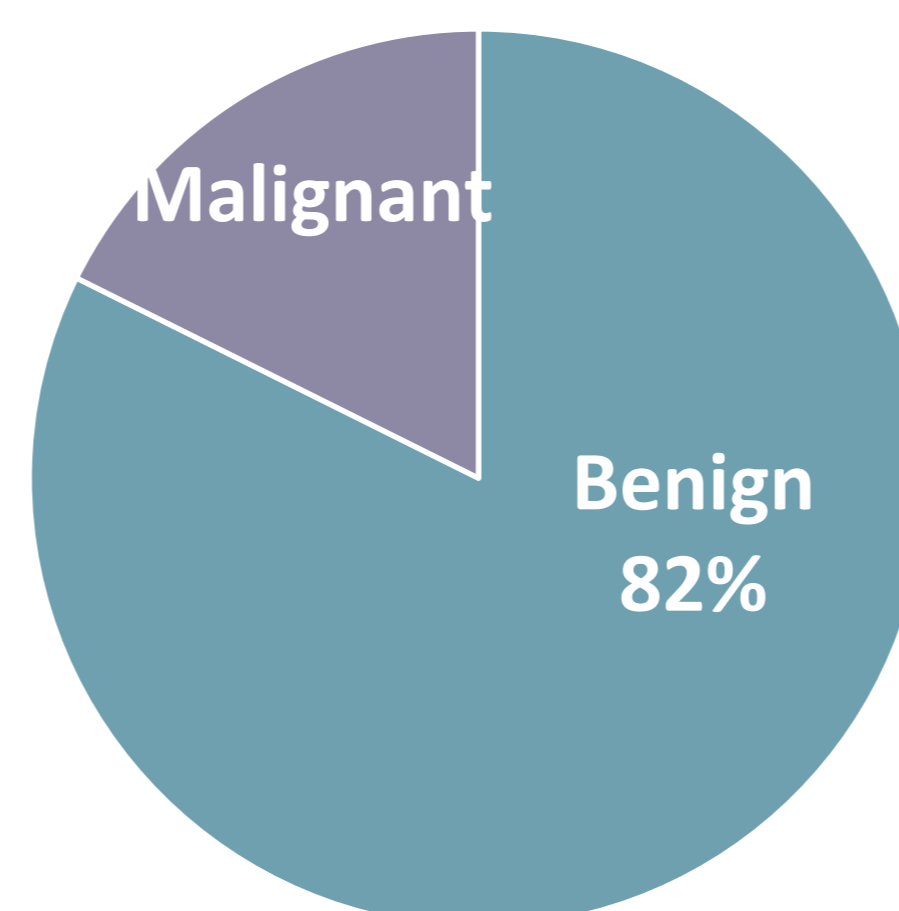


Chart 2. Pathology results

## Conclusions

Outpatient biopsy from the head and neck is safe and effective (1,10). It has the potential to reduce the time from referral to presentation in both a statistically and clinically significant manner (in our hands by 10 days) and should be considered in properly selected patients.

## Contact

Ang Kok Kiong  
University of Edinburgh  
Email: a.kokkiong@gmail.com

## References

- Scottish Health Technologies Group (SHTG). Healthcareimprovementscotland.org. (2019). Outpatient biopsy for diagnosis of suspicious lesions of the larynx pharynx and tongue base: Advice Statement 012-18. October 2018 [online] Available at [http://www.healthcareimprovementscotland.org/our\\_work/technologies\\_and\\_medicines/shtg\\_advice\\_statements/advice\\_statement\\_012-18.aspx](http://www.healthcareimprovementscotland.org/our_work/technologies_and_medicines/shtg_advice_statements/advice_statement_012-18.aspx) [Accessed 3 Jan. 2019].
- Van Dyne EA, Henley SJ, Saraiya M, et al. Trends in Human Papillomavirus-Associated Cancers - United States, 1999-2015. MMWR Morb Mortal Wkly Rep 2018; 67:918.
- ISD Scotland. Cancer of the head and neck: incidence. [cited 2019 March 11; Available from: <http://www.isdscotland.org/Health-Topics/Cancer/Cancer-Statistics/Head-and-Neck/>.
- Scottish Intercollegiate Guidelines Network. Diagnosis and management of head and neck cancer: a national clinical guideline. Edinburgh: SIGN; 2006.
- Cohen JT, Benyamini L. Transnasal flexible fiberoptic in-office faryngeal fopsies-our experience with 117 patients with suspicious lesions. Rambam Maimonides Med J. 2014; 5(2):e0011.
- Castillo Farias F, Cobeta I, Souviron R, Barbera R, Mora E, Benito A, et al. In-office cup biopsy and laryngeal cytology versus operating room biopsy for the diagnosis of pharyngolaryngeal tumors: Efficacy and cost-effectiveness. Head Neck. 2015;37(10):1483-7.
- Cha W, Yoon BW, Jang JY, Lee JC, Lee BJ, Wang SG, et al. Office-based biopsies for laryngeal lesions: Analysis of consecutive 581 cases. Laryngoscope. 2016;126(11):2513-9.
- Richards AL, Sugumaran M, Aviv JE, Woo P, Altman KW. The utility of office-based biopsy for laryngopharyngeal lesions: comparison with surgical evaluation. Laryngoscope. 2015;125(4):909-12.
- Saga C, Olalde M, Larruskain E, Alvarez L, Altuna X. Application of flexible endoscopy-based biopsy in the diagnosis of tumour pathologies in otorhinolaryngology. Acta Otorrinolaringol Esp. 2018;69(1):18-24.
- Lippert D, Hoffman MR, Dang P, McCulloch TM, Hartig GK, Dailey SH. In-office biopsy of upper airway lesions: safety, tolerance, and effect on time to treatment. Laryngoscope. 2015;125(4):919-23.