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United Kingdom and Ireland oral medicine and oral and maxillofacial surgery multidisciplinary clinics for the management of oral epithelial dysplasia

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Abstract

Oral epithelial dysplastic (OED) lesions have an increased risk of malignant change compared to normal mucosa. Multidisciplinary teams (MDTs) are widely used in medicine including for the management of patients with OED. There is little consensus in treatment, but a management algorithm from a joint oral medicine-oral and maxillofacial surgery (OM-OMFS) dysplasia management clinic was proposed in 2015 (the Liverpool Algorithm). We wished to determine the use of OM-OMFS MDTs for managing patients with OED in dental hospitals in the UK and Ireland using an online survey with results anonymised for analysis. We surveyed oral medicine units in the UK and Ireland reporting their use of joint clinics and management algorithms. All nineteen units responded with eight having OM-OMFS MDTs. Three used a published algorithm (Liverpool algorithm) and five used the algorithm with adaptations. 50% of units always excised lesions with moderate or severe dysplasia, with varying review intervals for different degrees of dysplasia. Seven of eight units kept patients with mild dysplasia under review for five years before discharge; for severe dysplasia some units never discharged. A total of 42% of oral medicine units in the UK and Ireland have MDTs for patients with OED. Most MDTs use the Liverpool Algorithm, or a slight variation of it, to help manage their patients. Wider adoption of MDTs and use of published algorithms may improve patient care by promoting consistent monitoring and management criteria.

Keywords: Oral medicine; Maxillofacial surgery; Oral epithelium; Dysplasia; Multidisciplinary team; Algorithm

Introduction

Oral mucosal dysplastic tissue is at increased risk of transformation to squamous cell carcinoma (SCC), compared to normal tissue and so is an important focus for both clinicians and patients. The histological diagnosis of dysplasia in a tissue sample of a visibly altered area of oral mucosa by an experienced oral and maxillofacial pathologist is the first step.[1] Many OMFS units are outside of a dental hospital so a general pathologist, rather than an OMF pathologist is most likely to be making diagnoses in the general hospital setting. The pathologist will describe the degree of dysplasia, which informs clinicians on how best to proceed.[2] A 2023 paper by Wolk and Lingen discusses problems in the histological grading of dysplasia,[3] and includes a summary of the World Health Organization (WHO) Blue Book on head and neck tumours and oral epithelial dysplasia (OED) and refinements of the three-tier classification of dysplasia.[4] Management decisions are important because typically, the more severe the degree of dysplasia, the greater the risk of SCC.[5]

Given the lack of consensus on precise management strategies, shared decision making is often adopted, and multi-disciplinary teams (MDTs) are formed to determine treatments options.[6,7] Treatment algorithms can often help with decision-making, and in the case of OED management an algorithm was described by Field et al (2015) based on an

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MDT in Liverpool dental hospital, often termed 'the Liverpool algorithm' (Fig. 1).[8]

Material and methods

Following ethical approval (Cardiff University Dental School Research Ethics Committee [DSREC 2111a]) we circulated an online survey (Fig. 2. Supplemental information, online only) to all dental hospitals in the United Kingdom and Ireland who had a specialist oral medicine (OM) service.[9] Participation in the study was voluntary. The survey link was distributed to consultants and specialty registrars via the British and Irish Society for Oral Medicine. Following the collection of basic demographic information, the survey asked whether the institution held MDTs (including joint clinics) for the management of patients with OED and what specialties were represented. For the MDTs, we asked about their frequency, the number of patients seen on each clinic, the use of and frequency of mucosal biopsies in the clinic for OED monitoring, the use of an algorithm and the management and follow-up practices for different degrees of dysplasia. Simple multiple-choice questions were used for ease of response and free-text boxes for additional information or clarification by participants. Where there were duplicate responses, the replies were consolidated for each institution, and simple analyses performed.

Results

At the time of the survey there were 19 dental hospitals and schools in the UK and Ireland with specialist OM clinics. Twenty-seven responses were received and following consolidation, we had data for 19 dental hospitals (100% response rate).

Prevalence of joint multidisciplinary team clinics for oral epithelial dysplasia and specialties and clinicians represented

Eight institutions had an OED MDT (42%). Of these, five had formal, established joint OM-OMFS MDTs, whilst three had arrangements short of a formal MDT where OMFS were

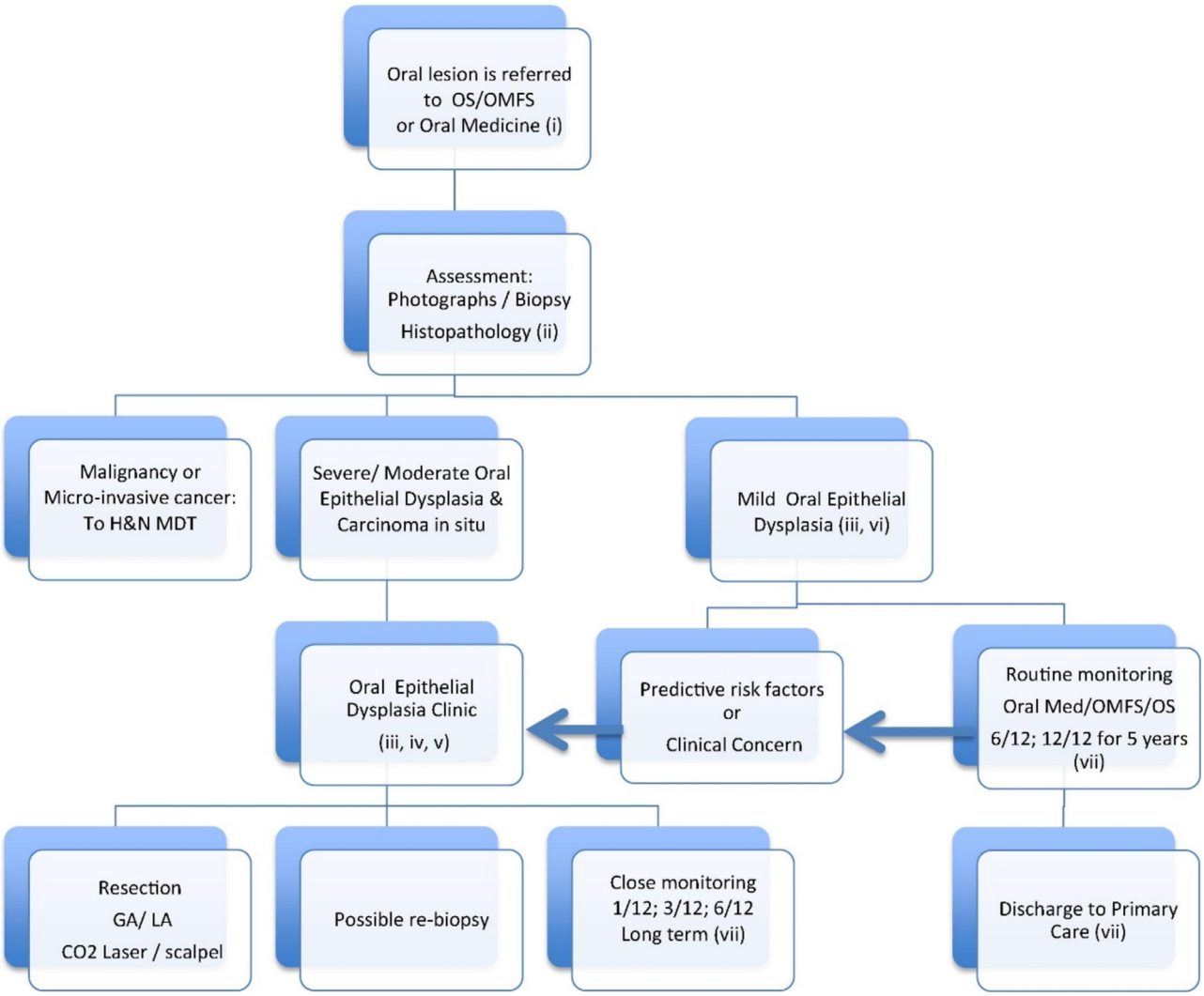


Fig. 1. The Liverpool algorithm[8] (reproduced with permission).

not always in attendance. Eleven surveyed units did not have an MDT. In the five formal MDT clinics, representation included OM and OMFS consultants, specialty registrars, a consultant oral and maxillofacial pathologist and/or oral surgery staff of different grades. The eight units with MDTs completed the remainder of the survey. Not all survey questions were mandatory, but most units answered most questions.

Frequency of clinics

One of eight units had more than one MDT clinic a week, one unit had an MDT clinic each week and the remaining units held MDT clinics every two weeks or more.

Use of and frequency of mucosal biopsies for dysplasia monitoring

We asked if dysplastic lesions would be excised following initial diagnostic biopsy. Most units reported they would if the lesion was amenable in size or anatomical location or if there was aneuploidy. For mild and moderate dysplasia four of eight units (50%) would excise, the remainder might do so depending on local factors. For severe dysplasia six of eight units (75%) would excise and the remainder may do so depending on local factors. (Table 1) We asked for frequency of review of patients with different degrees of dysplasia. For mild dysplasia, seven of eight units (87.5%) reviewed patients every three to six months. For higher grades of dysplasia, patients were reviewed more frequently with six of eight units (75%) reviewing at between one and four months and the remainder employing different review patterns. (Table 2).

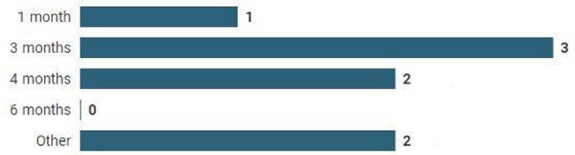
Use of management algorithms, management and follow-up practices (review/monitoring schedules and duration)

Five units (62.5%) used an algorithm to help guide management, and of these, three used the Liverpool algorithm.[8] Most units had maxillofacial pathologists who graded dysplasia using the most widely accepted approach of the 2017 'three-tiered' WHO classification system; reporting OED as

Table 1
Excision of lesion following first diagnostic biopsy.

	Do you excise the lesion following first diagnostic biopsy?	If no excision, free-text comment
Mild dysplasia		• If small enough • No. Unless aneuploid on biopsy • Dependent on size • Depends on size, site, patient and clinician
Moderate dysplasia		• Mostly if safe for patient unless improved since biopsy or risk factors improve depends on case • Not always and varies by with clinical findings, site, size, risk factors. • Yes if amenable to excision - size, patient related factors, location

Table 2
How frequently do you review your patients?

	Frequency of review	Free-text comment
Mild dysplasia		• No set protocol - Depends on variables - appearance, risk factors, visibility to patient, if have GDP, how often see GDP etc • 3-4 months • 4-6 monthly initially
Moderate dysplasia		• No set protocol - Depends on variables - appearance, risk factors, visibility to patient, if have GDP, how often see GDP etc • 2 - 3 monthly

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either mild, moderate or severe.[10] One unit had oral and maxillofacial pathologists that reported dysplasia using the 2006 binary classification system; reporting OED as either low risk or high risk.[11]

We asked if there was a set protocol for repeat biopsy (for monitoring of degree of dysplasia) without apparent clinical change in appearance. No units had a set protocol. (Table 3).

There was no standard duration of review before discharge for patients with mild dysplasia. One unit (of the eight) stated they would discharge a patient within one year, six units discharged after five years, and one unit said they discharged patients with mild dysplasia. For moderate dysplasia the time to discharge was variable with four of eight units (50%) keeping patients under review for up to five years, and two units (25%) reporting they would never discharge. For severe dysplasia, four of eight units (50%) would keep patients on review for at least five years, with two units (25%) never discharging these patients, and instead keeping them under long-term review in hospital clinics. (Table 4). All units offered smoking cessation services.

Discussion

According to Taberna et al, the core function of multidisciplinary team MDTs is to bring together a group of healthcare professionals from different fields in order to determine patients' treatment plans.[12] The introduction of MDTs in cancer care began following the 1995 Calman-Hine report, a policy framework for commissioning cancer services in England,[13] followed by similar advisory group reports in

Table 3
For dysplasia of different grades, how often do you repeat biopsies without apparent clinical change?

Variable	Free-text comment
Mild dysplasia	• Never • Further/repeat biopsies are guided by clinical changes • Rarely if no clinical change • Rarely repeat unless change in appearance • On clinical indication. Not pre-determined by review interval unless part of a study. • Never. Biopsy based on clinical change only • Repeat biopsies based on clinical changes • Depends on lesion, site, size, patient, risk factors
Moderate/severe dysplasia	• As clinically necessary • As above - only in case of clinical changes. • Severe lesions are nearly always excised. so monitoring is usually of residual mucosa • Depends on clinical picture. Not routine. • Never pre-determined by set intervals such as 6 or 12 months. • Repeat biopsy only if clinical change • Repeat biopsies on high grade dysplastic lesions based on clinical change • Depends on lesion, site, size, patient, risk factors

Table 4
How long are patients kept under review?

Variable	Free-text comment
Mild dysplasia	• 5 years • I do not discharge • No set protocol -Depends on variables - appearance, risk factors, visibility to patient, if have GDP, how often see GDP etc • 5 years approx. Depends if patient has a GDP, also dependent on patient and lesion risk factors. e.g. PVL with mild dysplasia on biopsy is never discharged. Challenging to discharge these cases, often patients prefer to attend annually than be discharged from the service. • 12 months or less dependent on additional risk factors. • 5 years provided no change • Depends on lesion, site, size, patient, risk factors
Moderate dysplasia	• 5 years or as clinically necessary • No discharge • No set protocol -Depends on variables - appearance, risk factors, visibility to patient, if have GDP, how often see GDP etc • Depends on patient and lesion factors. Years - at least 5. Often patients prefer not to be discharged. • At least 5 years following biopsy. • 5 years if no recurrence after excision, otherwise ongoing review • Up to 5 years but depends on lesion, site, size, patient, risk factors
Severe dysplasia	• 5 years or more if necessary • No discharge • No set protocol -Depends on variables - appearance, risk factors, visibility to patient, if have GDP, how often see GDP etc • Years. These patients are rarely discharged. • At least 5 years or longer. • Generally don't discharge. May discharge after 5 years if risk factors addressed, no recurrence after excision but this is rare • Indefinitely

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Scotland, Wales and Northern Ireland.[14–16] The cancer MDT model has been adopted for other diseases, including OED.

The 2015 Liverpool algorithm[8] was referred to by several units. A newer 2023 algorithm summarises the American Association of Oral and Maxillofacial Surgeon's position on the management of oral mucosal dysplasia.[17] Both algorithms share the same essence – that all dysplastic lesions should be reviewed and there may be additional predictive risk factors (patient factors such as smoking or alcohol) that may influence the risk of malignant change from the known grade of dysplasia and trigger MDT review for biopsy or scalpel/CO_2 laser excision or ablation. Some OM units report that they never discharge their dysplasia patients and maintain regular review, but in the Liverpool algorithm, patients with mild dysplasia with no clinical change or patient risk factors are discharged to primary care after five years.

This study has shown that fewer than half of OM units in the UK and Ireland use an MDT in managing their patients with OED and that there is variation in review intervals, and duration of review for patients with different degrees of dysplasia. In the future an MDT in each unit with shared responsibility for decision making and adoption of current best practice, as identified in the published algorithms, and collection of data on patient management, might help in future analyses of outcomes and in turn influence treatment strategies.

Ethical approval

Cardiff University DSREC 2111a.

Conflict of interest

We have no conflicts of interest.

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None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.bjoms.2025.01.001.

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