

Second opinion oral pathology referrals in New Zealand



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Summary

Referral for a second opinion is an important aspect of pathology practice, which reduces the rate of diagnostic error and ensures consistency with diagnoses. The Oral Pathology Centre (OPC) is the only specialist oral diagnostic centre in New Zealand. OPC provides diagnostic services to dentists and dental specialists throughout New Zealand and acts as a referral centre for second opinions for oral pathology specimens that have been sent to anatomical pathologists. The aim of this study was to review second opinion referral cases sent to the OPC over a 15-year period and to assess the levels of concordance between the original and final diagnoses. The findings indicated that the majority of referred cases were odontogenic lesions, followed by connective tissue, epithelial and salivary lesions. The most prevalent diagnoses were ameloblastoma and keratocystic odontogenic tumour, followed by oral squamous cell carcinoma. Discordant diagnoses were recorded in 24% of cases. Diagnostic discrepancies were higher in odontogenic and salivary gland lesions, resulting in the change of diagnoses. Second opinion of oral pathology cases should be encouraged in view of the relative rarity of these lesions in general pathology laboratories and the rates of diagnostic discrepancy, particularly for odontogenic and salivary gland lesions.

Key words: Oral pathology; second opinion; diagnostic errors.

Received 9 October, revised 2 November, accepted 6 November 2016
Available online 6 March 2017

INTRODUCTION

A fundamental aim in the practice of pathology is to provide an accurate diagnosis. The head and neck has been shown to be a region where diagnostic discrepancies may occur.^{1,2} Confounders include the anatomical complexity of the region and the diversity and relative rarity of some of the pathology. Oral and maxillofacial pathology is recognised by the Dental Council of New Zealand as a specialist field in dentistry and it is also practiced by medically qualified anatomical pathologists.

Worldwide and in New Zealand oral and anatomical pathologists have close professional relationships both in clinical practice and in research. Of particular importance as a part of this relationship is second opinion referral between pathologists. Second opinion referrals, referred to as 'preventive medicine for pathologists'³ refers to the practice of

obtaining a second opinion or having a case reviewed by another pathologist. This process may be voluntary where a pathologist refers a case to a colleague who has particular expertise in a specific area, or mandatory, for example where a treating institution requires review of all cases diagnosed outside prior to initiating treatment. Obtaining a second opinion is known to minimise potential error through decreased disagreement rates and/or the reduction in the number of amendments made to the original pathology reports upon review, thereby reducing potential harm to the patients.^{1,4,5}

Founded in 1946 by Professor Frank Shroff, the Oral Pathology Centre (OPC; formally known as Medlab Dental Oral Pathology Diagnostic Service), University of Otago, is the only International Accreditation New Zealand (IANZ) accredited oral pathology diagnostic laboratory in New Zealand, thus serving as the reference centre for oral pathology.⁶ The OPC receives some 2000–3000 oral and maxillofacial diagnostic specimens annually. Amongst them are a percentage of second opinion referral cases sent from anatomical pathologists across New Zealand.

The aim of this investigation was to review second opinion referral cases received by the OPC over a 15-year period. The objectives were two-fold: (1) to profile the nature and prevalence of second opinion oral pathology referral cases in New Zealand and thus to highlight some of the important and commonly referred cases, and (2) to determine the impact of the oral pathology second opinion practice by examining the rates of concordance between the referrers' diagnoses and the final diagnoses.

MATERIALS AND METHODS

Cases referred by anatomical pathologists registered with the Medical Council of New Zealand to the OPC for second opinion from 2001 to 2015 were retrieved from the OPC database. Information collected included the referring pathologist, geographic location from which the specimen was sent, relevant clinical information, referrer's diagnoses and final OPC diagnoses. Exclusion criteria included secondary referrals from doctors other than anatomical pathologists and lack of any of the above details.

Diagnoses were categorised into five groups: Odontogenic cysts and neoplasms, Epithelial lesions, Connective tissue lesions, Salivary gland lesions, and Miscellaneous. Odontogenic neoplasms were subcategorised according to the current 2005 World Health Organization (WHO) classification.⁷ Since non-neoplastic odontogenic lesions were excluded from the 2005 classification they were subcategorised according to the previous WHO classification.⁸ In the 2005 classification the lesion previously known as odontogenic keratocyst was considered to be a benign cystic neoplasm and renamed as keratocystic odontogenic tumour (KCOT) and this terminology will be used in this paper. Epithelial lesions included those neoplastic and non-neoplastic lesions that derived from, or primarily affected the squamous epithelium of

the oral and maxillofacial regions. The connective tissue group included fibro-osseous, soft tissue and bone lesions, which were derived from, or primarily affected the lymphovascular and connective tissues of the oral and maxillofacial region. The salivary gland group included both neoplastic and non-neoplastic lesions affecting the major and minor salivary glands and were classified according to the current WHO classification of Head and Neck Tumours. Miscellaneous lesions included any lesions that would not fit any of the above groups.

The impact of the OPC's diagnoses was examined by comparing the referring pathologist's diagnosis with the OPC's final diagnosis. Second opinion cases received in the 5-year period between 2011 and 2015 were reviewed for this purpose. Discrepancies were classed according to the Royal College of Pathologists of Australasia (RCPA) Quality Assurance Programme (QAP) assessment criteria. A diagnosis was considered 'Concordant' when the referrer's diagnosis matched the OPC's diagnosis. Minor discordance was recorded when there was a minor discrepancy unlikely to be of any clinical significance. 'Discordance' was defined where the change in diagnosis was likely to result in change in treatment protocol and/or prognosis.⁵ 'Differential diagnosis' was considered when the referrer did not provide a provisional diagnosis, but listed differential diagnoses, requesting the OPC for a definitive diagnosis. Where the referrer's diagnostic consideration was not conveyed to the OPC, the category 'Unable to be assessed' was used.

The OPC diagnosis was not reviewed specifically for this study. All diagnoses had been made by a specialist oral pathologist with drafts prepared by trainee oral pathologists. All difficult cases, including all cases referred for second opinion are further assessed by all three staff oral pathologists and a consensus diagnosis confirmed. Further clinical information is often requested from clinicians prior to issuing a report, along with requests for clinical photographs and imaging. Additional tests, particularly immunohistochemistry are undertaken prior to the diagnosis.

RESULTS

In the 15-year period from 2001 to 2015, a total of 201 cases were received as secondary referrals from anatomical pathologists from a total of 24,924 accessions representing 0.8% of specimens seen in OPC. Three cases were excluded due to insufficient information and therefore the remaining 198 cases were analysed. There was variability in the number of cases received each year (range 3–31), with more referred cases received in 2014 and 2015 than previously (Fig. 1). Geographic regions were represented approximately relative to the population in each city/province (Fig. 2). Most cases came from Auckland (31%), followed by Wellington/Lower Hutt (15%), Hamilton (14%) and Tauranga (10). Eighteen

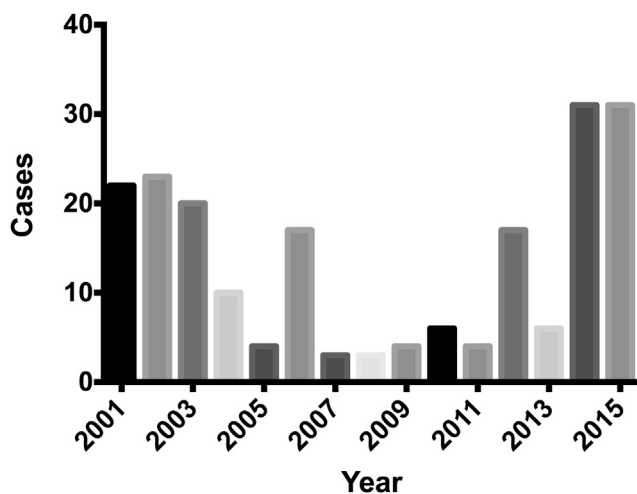


Fig. 1 Second opinion referral cases received by the Oral Pathology Centre (OPC) from 2001 to 2015.

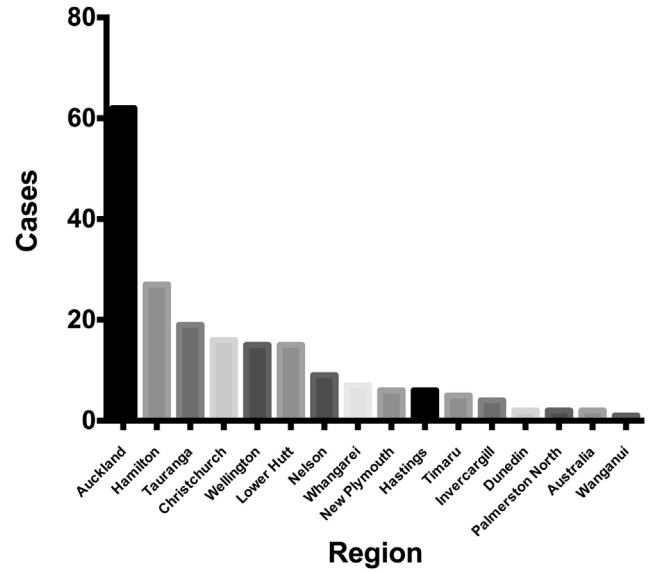


Fig. 2 Second opinion referral cases by city/region.

percent of cases were sent from the South Island and two cases were from Australia.

Odontogenic lesions were the most common disease category referred to the OPC by anatomical pathologists accounting for 51% of total secondary referrals (Fig. 3). Of those, ameloblastoma and KCOT were the most common disease entities (Table 1). Approximately one-third of cases of the ameloblastomas were unicystic ameloblastomas (UA), a distinct variant of ameloblastoma.

Connective tissue lesions accounted for 22% of all referred cases (Fig. 3). Many were non-specific inflammation and reactive lesions. Reactive metaplastic ossifications (fibrous epulis with ossification, also known as peripheral ossifying fibroma or ossifying fibrous epulis; osseous and cartilaginous metaplasia) and fibro-osseous lesions (ossifying fibroma, osseous dysplasia and fibrous dysplasia) also accounted for

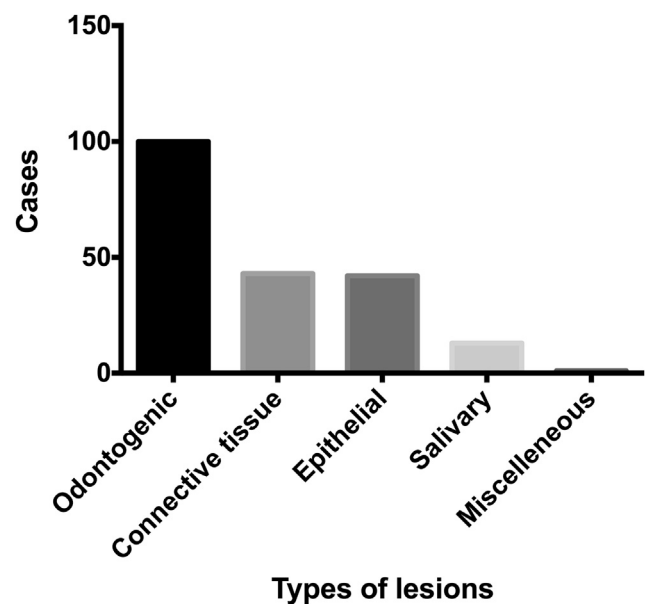


Fig. 3 Second opinion referral cases categorised by the lesion type, expressed as a percentage of total number of cases received.

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