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Original research

## Perceptions of oral and maxillofacial surgery amongst Australian medical general practitioners

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#### ABSTRACT

Objective: This study was undertaken to identify the proportion of referrals to Oral and Maxillofacial surgeons amongst Australian general medical practitioners (GP's) for common head and neck surgical scenarios.

Methods: A questionnaire presenting 34 common clinical surgical scenarios involving the head and neck region, as well as a descriptive component identifying reasons/barriers to referral was sent out through newsletter e-

as well as a descriptive component identifying reasons/barriers to referral was sent out through newsletter epublications targeting general practitioners. The main outcome measures were identification of the preferred specialty referral (Ear Nose and Throat, Plastic, Oral & Maxillofacial (OMS) or General surgery) for each of the clinical scenarios provided.

Results: 90 GP's participated with eligible responses. The majority of dento-alveolar surgery and facial trauma was referred to OMS. In cases of oral pathology, the referral rate to OMS was mixed (mean  $\sim$ 57%). Regarding facial cosmetics, the majority of respondents chose Plastic Surgery for referrals (94.4%), and ENT surgery for the management of obstructive sleep apnoea (90%).

Conclusions: The responses of this survey indicate an adequate awareness of the core fields in OMS (trauma, dento-alveolar). Less awareness appears to be present of the expanding role of OMS in the areas of pathology and cosmetic and OSA surgery. Medical education may play a role in expanding these perceptions.

#### 1. Introduction

Oral and Maxillofacial Surgery (OMS) in Australia is a relatively new and evolving speciality of medicine and dentistry which provides for the full scope of surgical treatment within a defined anatomical area. OMS is recognised by both the Australian Health Practitioners Regulatory Authority (AHPRA) and the Australian Government Medicare scheme as a speciality for both medicine and dentistry. Whilst the core of the speciality is still centred around the surgical management of the dentoalveolar complex, contemporary Oral and Maxillofacial practice within Australia has now expanded to include management of complex facial trauma, craniofacial deformity and head and neck oncology, which is a consequence of population need and a reflection of the expansion on the curriculum. This trend is mirrored in many countries globally, where training has become more organised and encompassing which is leading to further expansion in the scope of practice.

Traditionally in Australia, referrals to OMS services have come via dental practitioners. However, with the expansion of the speciality into non dentoalveolar based surgery, the reliance on alternative pathways of referral, such as from general medical practitioners/family physicians/primary care physicians (GP's) has led to a potential underutilization of Oral and Maxillofacial Surgical services due to the lack of awareness of services offered or in some cases a lack of knowledge of the speciality itself.

The aim of this study is to assess the current levels of awareness of the scope of Oral and Maxillofacial Surgery in Australia amongst practicing general medical practitioners. The objective is to identify referral patterns for services within the scope of Oral and Maxillofacial surgeons in order to highlight the common held misunderstandings of the role of the speciality by the medical profession specifically and subsequently target those areas to ensure continual growth of oral and maxillofacial surgery as a core surgical speciality.

#### 2. Materials and methods

This study was approved by Melbourne Health Human Research & Ethics Committee. Reference no. QA2016036.

To address the research objective, the investigators designed and implemented an online survey model. A questionnaire was designed

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outlining 34 different clinical scenarios. For each of these clinical scenarios 4 specialities were named that provide surgical care of the head and neck (Ears Nose and Throat, Plastic and reconstructive, Oral and Maxillofacial and General Surgery). Respondents were asked to identify and select who they would refer each particular clinical scenario to. The clinical scenarios and survey design were adopted from a similar survey study by Rocha et al., with a number of extra clinical situations to reflect Australian practices [1]. Respondents were also asked to rank 4 influencing criteria in order of greatest to least influential in the determination of selecting a certain surgical speciality.

Respondent general medical practitioners (internationally equivalent to primary care physicians/family physicians) were recruited Australia-wide utilising the services of Department of Health based "Primary Health Networks" organization e-newsletter publishing arms and the Australian Medical Association's e-publication "GP Network News".

A short article explaining the overlap of referrals between the specialities of ENT, OMS and Plastic surgery accompanied an online survey link. Respondents were blinded to the affiliations of the authors, as to reduce potential biases.

#### 3. Results

Overall, 90 responses from general practitioners across Australia were available for analysis. Half of the responses were from general practitioners who have been in practice for greater than 10 years, with a remaining equal distribution of responses between GP trainees, and GP's who have been in practice for less than 5 years and between 5 and 10 years.

Similar to Rocha et al., The clinical situations can be broadly divided into four categories; Trauma, pathology, reconstructive surgery and cosmetic surgery [1]. Additional clinical situations were also incorporated to reflect updates in clinical practice, such as provision of botox for functional reasons, and the surgical management of obstructive sleep apnoea. (Table 1)

The majority of general practitioners would refer to OMS regarding mandibular, maxillary fractures and dentoalveolar fractures (80%, 75.5% and 92.22% respectively). With regards to nasal fractures, ENT was the dominant referral destination with 72.22% of general practitioners choosing to consult with ENT. Responses with regards to frontal bone and zygomatic fractures were more equally distributed between OMS and Plastic Surgery, with the slight majority referring to OMS (53.3% for zygomatic fractures, 44.4% for frontal bone fractures) over plastic surgery (37.8% for zygomatic fractures, 41.11% for frontal bone fractures). For lacerations involving the face, the majority of respondents chose plastic surgery (86.7%), with only 2 responses (2.2%) choosing to refer OMS.

With the clinical situations involving pathology of the head and neck, ENT was the chosen referral stream for sinus pathology (87.78%) and lumps in the nose (94.4%). Oral pathology was more evenly distributed between ENT and OMS, with 51.11% of respondents choosing to refer oral cancer to ENT and 44.44% referring to OMS. Similar responses were noted for the biopsy of an oral lesion, with 37.78% referring to ENT and 53.33% referring to OMS. The majority of respondents however would refer jaw cysts and tumours for management by an OMS surgeon (71.11%), followed by ENT (16.67%). Similarly, the majority of respondents chose to refer to OMS for surgery involving the TMJ (87.8%).

With regards to scenarios involving reconstruction; Reconstruction of the maxilla and mandible was predominantly referred to OMS (62.2% and 70% respectively), with the second most preferred speciality being Plastic Surgery (30% for maxilla, 25.6% for the mandible). Cleft lip and palate was commonly referred to be managed by plastic surgery, with 63.33% and 52% of respondents referring to the speciality respectively, followed by OMS surgery (25.56% and 28.89% respectively).

Queries in regards to overall facial appearance and cosmetic botox were primarily referred to plastic surgery. Nasal deformity/appearance was equally referred between plastic surgery and ENT surgery (48.89% each). The majority of respondents chose to refer procedures involving jaw discrepancies to OMS (76%), followed by plastic surgery (18.89%). The majority of respondents referred Obstructive sleep apnoea (OSA) referred to ENT surgeons (90%) with only 7.7% referring to OMS.

With selection of the primary influencing criteria, perception of skill was the primary determinant of referral practice, with 61% of participants ranking it first (Fig. 1). This was followed by availability and access to the speciality (30%). Communication with the specialist, waiting time for consultation and literature provided by the speciality made up the remaining percentage of responses in an equal distribution

#### 4. Discussion

The objectives of the study were to identify current perceptions of the scope of the oral and maxillofacial surgery and referral patterns for head and neck conditions specifically in Australian general medical practitioners. Despite the small non-probability based sample of the survey and the large geographical distribution of the responses, certain patterns of referral can be identified and discussed, but the data did not allow for further extrapolation of regional differences of referral patterns or rigorous statistical analysis. While the training pathway of oral and maxillofacial surgery in Australia and New Zealand is administered on a binational level by the Royal Australasian College of Dental Surgeons, regional differences can vary between state to state and individual hospitals, which is a trend mirrored internationally.

With these limitations noted, the majority of general practitioners surveyed appreciated the scope of OMS in what Nayak (2011) determines as the areas of expertise of oral and maxillofacial surgery — oral pathology/medicine, dentoalveolar surgery, pre-prosthetic surgery and maxillofacial traumatology [2]. As expected, respondents overwhelmingly referred the management of dento-alveolar and TMJ conditions to OMS, in keeping with other studies internationally [1].

With regards to maxillofacial trauma, general practitioners correctly identified the strengths of OMS in managing dento-alveolar, maxillary and mandibular fractures. This reflects the specialities' unique dental roots in maxillofacial trauma, with the appreciation of the occlusion being of paramount importance in management of these fractures.

More even distribution of responses were noted in the management of zygomatic, nasal and frontal bone fractures. This even distribution of referral of management of midface trauma is reflected in previous studies [1,3,4]. Interestingly however, only 9% of respondents referred specific management of nasal fractures to OMS. This percentage of referral is significantly lower when compared to the study by Rocha et al. that also specifically assessed referral patterns of nasal fractures by medical practitioners [1]. Aside from geographic differences, a potential difference however exists in that the medical practitioners surveyed within this study were based in an emergency department, and more likely to be aware of the scope and efficiency of OMS in managing this specific clinical scenario. A survey of emergency physician chiefs across America found greater rates of satisfaction in timeliness, efficiency and competency in regards to referral treatment for facial fractures by OMS compared to ENT and Plastic Surgery [3].

Mixed referral patterns to both ENT and OMS were noted in the management of maxillofacial oncology and pathology. This confusion may be reflective of the fact that in Australia, management of head and neck oncology is often directed to head and neck multidisciplinary teams (MDT's), which have been traditionally ENT led. It should be noted however that these MDT's are increasingly involving OMS. A survey exploring the scope of oral & maxillofacial surgery in Australia found an increased percentage of involvement of OMS surgeons in ablative malignant pathology surgery compared to the previous generation of surgeons [5], which may be likely attributed to the evolution of

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