Multidisciplinary clinical approach to the management of head and neck cancer

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Within the practice of cancer care over the past two decades, there has been a continual and rapidly expanding range of potentially efficacious treatment options, which introduce therapeutic dilemmas about optimum management plans and how these should be presented to patients [1]. This increased specialisation and complexity of knowledge has led to the introduction of multidisciplinary teams (MDTs) for the management of patients with cancer [2]. In the past, treatment for all but a few patients with cancer was based on decisions that were made unilaterally, without necessarily following an evidence-based approach [3]. One of the aims of cancer management by a multidisciplinary team hopes to ensure that all patients will benefit from the wisdom of a variety of specialist team members who can share their expertise, professional perspective, and knowledge [1, 3, 4] and has become the model of care in many countries [5]. The introduction of MDTs in England was given impetus by the production of tumour-specific guidance (Improved Outcomes Guidance; IOG), which aimed to standardise and improve the outcomes of cancer care [6]. The benefits of MDT working are thought to include improved communication, coordination, and decision-making between health care team members when weighing up treatment options. Indeed, multidisciplinary discussion can help health care professionals to tailor holistic treatment plans to patients' tumour types, biological markers as well as their comorbidities and social circumstances [7]. Evidence has been provided that multidisciplinary team-working can make a positive impact on

the quality of clinical decision-making, clinical outcomes for patients, patients' experience of care and also the impact on the working lives of team members [8].

The introduction of MDT practice for cancer management was originally introduced to counter apparent shortfalls in cancer care provision in the UK in the mid-1990s and aimed to ensure all patients achieved prompt access to expert advice, up-to-date treatments, provided by relevant professionals with specialist knowledge and skills [6]. An additional aspiration was to ensure seamless specialist continuity of care for all patients, as well as the offer of adequate information and support. There is almost universal approval for this strategy [9], which indeed some considers crucial [10], despite the fact that there is little evidence of its effectiveness in improving outcomes [11]. A large survey [5] of MDT members in the UK in 2009, and included 109 from the Head and Neck Service, enabled a set of recommendations to be formulated to define how an effective MDT would work (<http://www.ncat.nhs.uk>). In summary, the analysis of the survey reveals a strong consensus between MDT members from different tumour types, while also identifying areas that require a more tailored approach, such as the clinical decision-making process, and preparation for and organisation of MDT meetings [5]. In addition, in a systematic review on factors that affect the quality of clinical decision-making of MDTs, several factors have been identified: inclusion of time to prepare for MDTs into team-members' job plans, making teams and leadership skills training available to team-members, and systematic input from nursing personnel would address some of the current shortcomings [7, 12].

The management of patients with head and neck cancer is considered complex and requires a multifaceted treatment strategies for a heterogeneous group of tumours

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located in key anatomical, physiological and functional-sites, not only for diagnosis but also for immediate and long-term rehabilitation [13–18]. Case presentation at HnN MDT affects and changes the clinical staging and therefore improves outcomes in a significant number of patients and improves quality of survival [19–21]. Because head and neck cancer is rare and complex, it has been suggested that advanced stage disease surgery should only be performed in high volume hospitals which will result in a shorter hospital stay, a better long-term survival and cure-rate [22–24]. Therefore, the team members involved in such a care-pathway are numerous and each has a unique part to play in the each patient's treatment decision-making and subsequent management. The IOG for head and neck cancer in England and Wales [6] has defined the membership of the core team who must attend weekly meetings and sessional commitments should be formally agreed in their job planning process. This team is composed of doctors (surgeons, clinical oncologists, pathologists, radiologists) clinical nurse specialist, speech and language therapist, dietician, nursing staff, MDT coordinator, data manager, team secretary and restorative dentist. The head and neck surgeon is the only job defined and states that "should normally dedicate half of his or her time to head and neck cancer". Also listed is other individuals who because of their designated expertise and should make themselves available whenever their expertise is needed. An audit of the clinical resources available for the care of head and neck cancer patients in England [25] revealed the widespread practice of MDT and the dedication of the specialist care teams. It was identified that there was a lack of non-core member's availability to attend the MDT. Other deficiencies also highlighted involved the provision of supportive services such as imaging and histopathology. The provision of dieticians, and speech and language therapists was patchy and often dependent on local facilities, priorities and workload. A recent updated audit [26] has revealed that there remains a need for increased resources and further changes in practice are required to implement current NHS Cancer Policy and teams need to improve recording of their decision-making, discuss morbidity and mortality and support recruitment to clinical studies. Short and long-term identification and structure rehabilitation is key to the rehabilitation of the treated head and neck patient, and involves an active weekly review of treatment strategies to ensure adequate weight gain, nutrition, voice and swallowing, as well as help to achieve cessation of smoking and dependency on alcohol [27–31]. The MDT environment is an ideal environment to collect, collate and review each patient's progress with patient's availability to complete quality-of-life questionnaire [32].

One area of importance in MDT working is adherence to clinical management guidelines [33–37]. However, the

development of clinical management guidelines does not ensure physician adherence, many barriers exist and develop which may need to be identified and targeted solution need to be invented to overcome clinician resistance [38]. Within Europe, some countries, not all, have developed management guidelines for head and neck cancer but most are written in their native language and circulated within each country, thus making comparisons difficult [39–41]. A report [42] has reviewed the pre-treatment of head and neck cancer patients to a USA tertiary care centre with recurrent or persistent disease have been treated with significant deviation from NCC guidelines. In 1999, The Netherlands clinical practice guidelines for the management of laryngeal cancer was introduced and a retrospective review reported that their introduction had contributed to uniformity [43], and a follow-up paper [44] continued to report that the efficiency of the care process improved. Another retrospective report from The Netherlands [45] on the management of tongue and floor of mouth squamous cell carcinoma reported that protocol violation occurred in 45 % of patients, this did not result in a worse tumour recurrence, and neither did over-treatment nor under-treatment appeared to affect the overall tumour recurrence.

A solution suggested [46] is a need for stabilising the process of decision-making, and responsibility should be clearly identified for every person who is contributing to the multidisciplinary decision, with a common agreement that serves as a guideline for governing subsequent discussions about clinical interventions in complex cases. They also suggest that responsibility for success and failures should be traced and associated with every member contributing to the decision by constant feedback on whether the endpoints were accomplished or not. The chairman of the MDT should be aware of the outcomes from every situation, keeping in mind that success is not to be taken for granted.

Another area of MDT practice highlighted is the unwarranted practice variation between MDTs and even within MDTs [47]. Evidence of practice variation has been documented in the recent publications of DAHNO6 and DAHNO7 with respect to the management of oropharyngeal cancers and early laryngeal cancers [48, 49]. Ultimately, clinical outcome should be included when assessing MDT performance, but short-term outcome and potentially process measures (such as time from first referral to diagnosis, time from diagnosis to the first treatment, and cost reductions) should also be developed. There is evidence that the ability of an MDT to reach a decision on the first-case presentation and ability of MDT decisions to be implemented appear to be useful markers of the performance of the MDT [7]. Moreover, outcomes such as patient's satisfaction and health care professional

satisfaction are also increasingly seen as important measures of the effectiveness of health care [50, 51]. Patient involvement in decisions about their treatment is widely considered to be crucial to improving outcomes, and many cancer patients wish to play a more active role in their care. The current structure of cancer MDT meetings makes patient participation very difficult to achieve [52].

The aims for improving the quality of head and neck cancer care has been summarised [53]: (a) to increase the safety of health care by avoiding injuries to patients through care intended to help them, (b) to deliver effective services based on scientific knowledge and to avoid services of no proven benefit, (c) to deliver individualised treatment respectful of and responsive to the patient's preferences, needs, and values, (d) to deliver timely care by reducing wait times and harmful delays, (e) to increase efficiency by not wasting equipment, supplies, ideas, and energy, and (f) to deliver care that is equitable and does not vary by personal characteristics, patient sex, ethnicity, geography, and social economic status.

However, the multidisciplinary team structure has enormous potential to harmonise and improve cancer care through improved documentation of imaging and pathology cancer stage and prognosis, the evaluation of available treatments, surgery, radiotherapy, chemotherapy and novel therapies, involvement of team members in audit of outcomes and active participation in clinical research.

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