

End of Life Care in Terminal Head and Neck Cancer- An Amalgamated Approach

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ABSTRACT

Oral cancer is among the leading causes of cancer morbidity and mortality worldwide, and palliative care is a critical requirement for cancer patients. It is a multidisciplinary strategy that involves professionals from a variety of medical specialities. Yet, a stomatologist's presence in the palliative care group is unavoidable. Although oral care is considered one of the most fundamental nursing practices, it might be affected in cancer patients due to the disease or various treatment regimens. The present review focuses on combined approach, starting with breaking down news to the family and progressing to palliative care measures for Head and Neck Cancer (HNC) patients. This includes pain management, aftereffects of chemoradiation therapy, outcome of cytoreduction, management of external fungating lesion, postradiotherapy dysgeusia management, postmalignancy therapy trismus management and xerostomia management. Furthermore, this also includes special interest topics like results of altered anatomy, cancer cachexia and Euthanasia legalisation in Indian scenario. Prioritising cure along with prolonging survival of the patient with minimal suffering is the basic goal of palliative care. As a result, a respectable death is one that is painless, serene, and honourable, occurring in the presence of loved ones and without the need for unnecessary brave interventions.

Keywords: Euthanasia, Head and neck neoplasms, Quality of life, Survival, Terminal care

INTRODUCTION

"Life is pleasant; death is serene; it is only the transition that is difficult".

India has the highest number of oral cancer cases, accounting for one-third of the global burden. Oral cancer is a severe health threat in countries going through economic change [1]. Every year, over 77,000 new cases and 52,000 fatalities are recorded in India, accounting for almost one-fourth of global incidents [2]. Oral cancer is a far bigger issue in India than it is in the west, with over 70% of cases being reported in the late stages (American Joint Committee on Cancer, Stage III-IV). Because to the late identification, the odds of cure are extremely slim or nearly non-existent, with five-year survival rates hovering around 20% [3].

As per the World Health Organisation (WHO), palliative consideration is "a methodology that is planned for improving the individual Quality of Life (QoL) of patients and their families confronting the issues related with life threatening sickness, through the avoidance and alleviation of endurance by methods for early identification and faultless evaluation and treatment of agony and different issues, physically, psychosocially and spiritually" [4]. Numerous cancer patients are said to die in an inhumane manner as a result of poorly treated symptoms [5]. A decent death is one that is painless, serene, and dignified, occurring in a location of one's choice, with family present, and without heroic measures that serve no purpose [6]. Prior research on treatment quality has indicated that the primary concern for patients and their families is effective pain and symptom management, followed by maintaining the patient's dignity and hygiene [7]. Fried T et al., in his research, elucidates valuable information regarding a patient's dying hours [8]. Pain was a prevalent complaint (84%) that was well controlled in all of the patients, with 93 percent getting opioids. Other symptoms were well-managed, with the exception of neuropsychologic issues. Only 22% of patients had a family present when they died, while 63% of patients died in the hospital. Although none of the patients were admitted to the Intensive Care Unit (ICU) or required resuscitation, only 65% of the patients mentioned it. In the last month of life, 53% of patients were hospitalised as an emergency, and the most prevalent reason for admission was haemorrhage [8]. Aird DW et al., considered 150 patients with head and neck cancer and pronounced eight major

complaints in those patients which compromised with the QoL were pain (50%), dysphagia (38%), airway obstruction (28%), fungating wound (14%), nausea and vomiting (12%), mucosal dryness (10%), conductive deafness (<5%) and bleeding (<1%) [9]. Additionally, other research indicates an excessive prevalence of pain, weight loss, feeding problems, difficulty in breathing signs and symptoms and speech problems [10,11]. Oral cancer is reported to be the most common cancer in India, accounting for 32-40% of all cancer cases. The production and consumption of tobacco on a vast scale by the Indians is the primary underlying cause [12]. End of life care is a critical requirement for cancer patients all around the world. However, in underdeveloped countries like India, where patients are detected in advanced stages and have limited access to preventive measures and treatment services, it plays a significant role [13].

END OF LIFE CARE

Conversing with the Family

When faced with cancer that may be terminal, honest, open and legitimate communication is critical. A cancer nurse, an oncologist and a general physician are required at the very least in a successful head and neck cancer approach [14]. Poor performance status, age greater than 70 years (for chemotherapy), history of past treatment (prior doses of radiation and chemotherapy), extent of cancer and predicted survival are some of the considerations for refusal of treatment for advanced cancer [15]. This staffing offers many degrees of social care, medical assistance, and counselling for the numerous tests and visits that a patient may face. Patient and family satisfaction with the treatment they receive is improved considerably by such a service [14]. The patient's general well-being status is significant.

Measures of Palliative Care

Pain management: Cancer patients may experience excruciating pain as a result of the disease or as a side-effect of therapy. The goal of palliative treatment for such individuals should be to alleviate this discomfort on both levels [15]. The severity and features of the pain, the patient's emotional response, and the impact of pain on the patient's capacity to function should all be evaluated by the physician.

In general, pain management in palliative care consists of a basic pain-relieving strategy and the potential options for future therapy. The administration of nociceptive pain medications (anticonvulsives and antidepressants-gabapentin, carbamazepine, phenytoin, amitriptyline and Nortriptyline) and therapy with adjuvants are the most important pain-relieving measures, according to WHO, (corticosteroids, tranquilisers, antiemetic, alfa-2 agonists, local anaesthetics, N-methyl-D-Aspartate (NMDA) receptor antagonists and so on) can be used as a "step-by-step" approach [16-18].

Generally, the pain reduces on pharmacological treatment with analgesics and adjuvants taken orally. The effective use of oral opioids for moderate to severe pain is the most significant aspect of the WHO approach and the rationale for its success. Morphine is the standard 'step 3' opioid, and there are recommendations for its usage in cancer pain treatment since 1996. {Expert Working Group of the European Association of Palliative Care (EAPC), 1996}. Morphine appears to have no clinically significant analgesia ceiling effect: dosages of oral morphine can be varied 1000-fold or more to attain the same pain relief threshold [19].

Aftermath of Chemoradiation Therapy

The decision to pursue curative chemoradiation vs palliative treatment is frequently challenging, and it necessitates honest dialogue with the patient and family. When palliative care is chosen, the objective must be to give maximal alleviation while minimising treatment adverse effects and recognising that cure is not the goal [14]. When induction treatment was utilised before combination chemoradiotherapy rather than induction chemotherapy and radiation, Yogi V and Singh OP found that patients had better survival and symptom alleviation [20]. Graf R et al., wanted to see if treating inoperable head and neck tumours with concurrent radiation and chemotherapy would be better than the standard way of sequential treatment with induction chemotherapy followed by radiation [21]. Two sessions of neoadjuvant chemotherapy, cisplatin and 5-fluorouracil, were followed by a course of radiation utilising standard fractionation up to 70 Gy in a sequential procedure. The concurrent treatment included two sessions of 5-fluorouracil with mitomycin, as well as a normal fractionated Radiotherapy (RT) course of up to 30 Gy, followed by a hyper fractionated course of up to 72 Gy. After five years, the group that had concurrent radiation and chemotherapy followed by radiation had significantly greater response rates and local control, as well as a tendency toward higher disease-specific and overall survival rates. In both groups, late toxicity of RT was found to be close such as dysgeusia, postradiotherapy trismus, Osteoradionecrosis (ORN) and xerostomia [21].

Outcome of cytoreduction: Cytoreduction or tumour debulking is a cancer treatment approach that aims to reduce the number of cancer cells by removing the primary tumour or metastatic deposits to minimise the potential immunosuppressive tumour burden, relieve symptoms, and prevent complications [22]. Airway obstruction, dysphagia, discomfort, and death are among serious consequences of terminal head and neck malignancy. The purpose of palliative surgery, according to Forbes JF [23], is to improve a patient's QoL by lowering symptoms while avoiding surgical consequences. He emphasised various points on the importance of surgery in palliation, as well as the principles of preoperative care, advanced cancer surgery, and postoperative care [Table/Fig-1] [23].

Laccourreye O et al., employed the CO₂ laser to debulk endolaryngeal tumours in a 10-year study of 42 patients [24]. They had a 95% success rate in patients who were awaiting final therapy for their condition and an 87.5% success rate in patients who were receiving palliative care. Recently, Phelan E et al., reported effective debulking and reestablishment of airways in patients with obstructive laryngeal malignancies using microdebriders [25].

Surgery's involvement in palliative care
1. Cancer patients are first and foremost surgical patients.
2. The tumour's implications are the focus of surgery.
3. Include surgery as part of a comprehensive treatment plan and follow-up care.
4. Avoid putting off palliative surgery indefinitely.
5. Surgical complications might be due to a benign source; get histopathology.
Preoperative care principles
1. Consult with clients and explain everything to them.
2. Make arrangements for both urgent and long-term care.
Principles of advanced cancer surgery
1. Determine where the incision will be made.
2. Each patient must go through the surgery that is best for them.
Postoperative care principles
1. Make the most of your rehabilitation by avoiding problems.
2. Obtain an early diagnosis and aggressively handle any complications that occur.
[Table/Fig-1]: Forbes' insights on palliative surgery's goals [23].

Management of External Fungating Lesion

There is an increased risk of clinically significant oral fungal infection during cancer therapy. Because of the persistent and debilitating nature of a fungating sore, patients usually suffer excruciating emotional and physical agony. Patients may see morphological changes in their bodies, which might affect their confidence and willingness to collaborate in social situations. They also have a foul odour that interferes with their communication. Foundational anti-toxins, topical metronidazole, and charcoal dressings are three tools suggested by Grocott P to aid with fetid odour [26]. Wound management is frequently a perplexing process. Cleaning and dressing with antiseptics are only required for injuries that produce excessive exudates, purulence, or serous liquids [27].

Postradiotherapy Dysgeusia Management

For individuals with malignant development of the head and neck, RT is an important therapeutic option. It is usually presented as a last therapy or as an adjuvant treatment following a medical procedure [28]. Many patients are treated with significant doses of RT applied to large areas of the body, including the dentition, oral mucosa, salivary organs, maxilla, and mandible. Oral manifestations, such as dental caries, xerostomia, oral mucositis, taste adjustment, and candidiasis, are common during and after treatment due to the immediate or atypical effects of ionising radiation.

Despite the fact that critical tumours in the head and neck region do not often affect taste directly, the majority of HNC patients report changes in their sense of taste [29,30]. Dysgeusia treatment focuses on basic dental hygiene, dietary changes, and counselling [31].

Postmalignancy Therapy Trismus Management

Trismus, or a limited mouth opening, is common in individuals with head and neck malignant development and interferes with basic functions such as eating, swallowing, and conversing [32,33]. It also interferes with dental hygiene, which can be very bothersome to sufferers [34]. Trismus can be caused by tumour penetration into the masticatory muscles, namely the pterygoids, or the Temporomandibular Joint (TMJ), or it can be triggered by cancer treatment, such as surgery or RT [34,35]. Post-treatment trismus is unpredictable in terms of frequency and severity, and often manifests three months after radiation [34]. It commonly develops into a long-term problem [35].

Osteoradionecrosis (ORN) Management

Based on clinical presentation and observation, the most often accepted definition of ORN affecting the jaws is: Irradiated bone becomes non vital and gets exposed through the overlying skin or mucosa for about three months, without healing and repairing, with no recurrence of the tumour [36-38].

Conservative Management of Osteoradionecrosis (ORN)

Local irrigation (saline solution, NaHCO₃, or chlorhexidine 0.2 percent), systemic antibiotics in acute infection episodes, avoidance of irritants (tobacco, alcohol, denture usage), and dental hygiene instruction are all part of “conservative therapy.” In addition to these conservative treatments, “simple management” refers to the careful removal of sequestrum in sequestering lesions (without local anaesthesia). In situations with persistent pain, inability to respond to conventional therapies, and progressive worsening, resection, Hyperbaric Oxygen (HBO) therapy, or both were used. The treatment ended on the date of resection or the first HBO dive [39].

Hyperbaric oxygen therapy in the treatment of Late Radiation Tissue Injury (LRTI):

Bennett MH et al., conducted a systematic review by assessing the quality of eleven relevant randomised control trials and extracting data from the trials using the Cochrane Handbook for Systematic Reviews of Interventions criteria [40]. Based on its capacity to enhance the blood flow to these tissues, Hyperbaric Oxygen Therapy (HBOT) has been recommended as a treatment for LRTI, according to the review. The HBOT is thought to aid tissue repair as well as the avoidance of complications following surgery. There was no indication of a benefit in clinical outcomes when there was known radiation harm to brain tissue, and there was no data on the use of HBOT to treat other LRTI presentations. In an irradiated area, HBOT also appears to minimise the risk of ORN after tooth extraction. The HBOT treatment of specific individuals and tissues may be warranted [40].

Ultrasound in the Management of Osteoradionecrosis (ORN)

The physical effects of therapeutic US on cells and tissues can be achieved through both thermal and non thermal processes. In physiotherapy, thermal effects are utilised to treat acute injuries, strains, and pain alleviation [41]. Tissue regeneration, venous ulcer healing, pressure sore healing, blood flow in chronically ischaemic muscles, protein synthesis in fibroblasts, and tendon repair are all aided by nonthermal effects. Ultrasound impacts bone through accelerating bone healing in animals and humans and inducing bone growth in vitro. Non thermal influences have been proven to aid in the healing of mandibular ORN. According to Young and Dyson, the main benefit is the activation of angiogenesis. Activation, basement membrane disintegration, migration and proliferation of endothelial cells from pre-existing venules, capillary tube creation, and maturation of new capillaries are all involved in the generation of new capillaries [42]. Therapeutic angiogenesis is utilised to improve tissue healing and lessen negative tissue consequences produced by local hypoxia, such as ORN. The use of ultrasonography for revascularisation of mandibular ORN has been suggested by Harris M. Ultrasound (3 MHz, pulsed 1:4, 1 W/cm) was used to treat the patients for 40 sessions 15-minute each day [38]. Only one case required mandibular resection and reconstruction, and 10 of the 21 cases (48%) healed with debridement and ultrasound alone. Eleven cases remained unhealed after ultrasound therapy and debridement were covered with a local flap, and only one case required mandibular resection and reconstruction [38].

Pentoxifylline and tocopherol in the management of osteoradionecrosis: New therapy regimens have been established to counteract alterations in reactive oxygen species that cause radiation-induced fibrosis and, eventually, ORN. Pentoxifylline is a methylxanthine derivative that reduces inflammatory responses in vivo, enhances erythrocyte flexibility, dilates blood vessels, inhibits proliferation of human dermal fibroblasts and extracellular matrix synthesis, and increases collagenase activity in-vitro. It is combined with tocopherol (vitamin E), which protects cell membranes against peroxidation of lipids, partial suppression of Transforming Growth Factor-1 (TGF-1), and production of procollagen genes, hence

decreasing fibrosis. These two medications work together as a powerful antifibrotic agent. The treatment comprises of 400 mg of pentoxifylline twice a day and 1000 IU of tocopherol once a day [31].

Surgical management of ORN: Reconstruction surgery has made significant breakthroughs in the surgical management of ORN. The invention of myocutaneous flaps and the utilisation of microvascular free bone flaps allowed for significant changes in the surgical ablation of vast ORN. The replacement of the dead bone with a vascularised bone-containing flap will restore mandibular continuity while also providing non irradiated soft-tissue covering with an intact blood supply. Fibular flaps, ileac crest flaps, and scapular-parascapular flaps are all often utilised flaps [43].

Xerostomia management: Xerostomia can be caused by a multitude of factors, including radiation and chemotherapy. One of the most common radiation-induced toxicities in postradiotherapy head and neck patients is xerostomia, which is caused by damage to the salivary glands [44,45]. The four goals of xerostomia therapy are to increase existing saliva flow or replace lost secretions, to maintain oral health, to prevent dental caries, and to treat potential infections [46]. The use of cholinergic pharmacological preparations like pilocarpine or cevimeline can help increase salivary flow. The Food and Drug Administration (FDA) has licenced both of these parasympathomimetic medications for the treatment of xerostomia: pilocarpine for Sjögren's syndrome and RT-induced xerostomia, while cevimeline appears to be more specific for Sjögren's syndrome. Pilocarpine, a natural alkaloid, is a parasympathomimetic drug with adrenergic effects that stimulates the salivary glands residual activity by activating cholinergic receptors and 5 mg orally three times a day is the recommended dosage [47-50]. Cevimeline is similar to acetylcholine in that it binds to muscarinic acetylcholine receptors in exocrine glands, especially the M1 and M3 subtypes found, for example, in the salivary and lacrimal gland epithelium, causing an increase in exocrine gland production, such as saliva and perspiration. In heart and respiratory organs, M2 and M4 receptor sites predominate. The systemic side effects of muscarinic-cholinergic stimulation is believed to be mitigated by this receptor subtype specificity [50].

SPECIAL INTEREST TOPICS

Results of altered anatomy: “A scar just indicates that you are tougher than whatever attempted to harm you...”

Our physical appearance plays a significant role in our everyday lives and is usually overlooked. Patients go through a lot when their physical appearance changes as a result of diligent therapy. No two patients have the same scars, heal the same way, or have the same perceptions about their appearance and in such scenario psychological counselling is of utmost significance [14].

Dealing with cancer cachexia: Systemic inflammation, a negative protein and energy balance, and an involuntary loss of lean body mass, are all symptoms of cancer cachexia [51]. It is a deceptive condition that not only has a big influence on patients' QoL, but it is also linked to poor treatment responses and shorter survival spans [52,53]. Despite the fact that several pathways are documented to be involved in its genesis, with a variety of cytokines suggested to have a role in the aetiology of the chronic catabolic state, cachexia remains mostly undiagnosed and untreated [53]. Existing cachexia treatments, such as orexigenic appetite stimulants, are aimed at alleviating symptoms and reducing patient and family discomfort rather than extending life. A multidisciplinary strategy has been used in recent cachectic syndrome treatments. Novel pharmacological drugs such as megestrol acetate, medroxyprogesterone, ghrelin, and omega-3 fatty acid have been introduced to combination treatment with diet modification and/or exercise. These drugs have been shown to increase survival rates and QoL [51,53].

Supreme Court Verdict on Euthanasia Legalisation in India

While dismissing Pinki Virani's supplication for Aruna Shanbaug's killing, the court spread out rules for latent euthanasia [54]. According to these rules, detached wilful extermination includes the pulling back of treatment or food that would permit the patient to live [54]. Forms of dynamic killing, including the organisation of deadly mixes, legitimate in various countries and locales including Luxemburg, Belgium and the Netherlands, just as the US conditions of Washington and Oregon, are as yet illicit in India [54,55].

Wilful extermination/Euthanasia in India and elsewhere in the world: Active euthanasia is almost always prohibited in other parts of the world [56]. The legal position of passive euthanasia, which includes the deprivation of nutrition or water, differs from country to country [57]. Because there was no Euthanasia statute in India, the Supreme Court's directions became law until Parliament passed legislation. Veerappa Moily, India's Minister of Law and Justice, in the year 2011, called for a meaningful political debate on the matter [57]. The following rules were established:

1. A decision to stop life support must be made by the parents, spouse, or other close relatives, or in the absence of any of them, by a person or group of people acting as a next friend. It can also be administered by the doctors who are caring for the patient. The choice must, however, be made in the best interests of the patient.
2. Even if a decision to remove life support is made by close relatives, physicians, or a close friend, it must be witnessed by two people and countersigned by a first-class court magistrate, as well as authorised by a hospital medical board.

Hospice Care

Hospice care is a multidisciplinary programme that aims to improve a person's QoL as they approach death, although it is not necessary that the patient has to be in a terminal condition. This programme can be administered at the patient's preferred location, such as a nursing home, a family member's house, or the patient's own home. Clinical, passionate, deep, and therapeutic support may be provided. Frequently, a portion is provided for the patient's group, which might include counselling, grief assistance, support groups, and training in how to think about their loved one. India has numerous hospice care associations and about 146 Institutions nationwide which provide hospice care to the maximum involving cross department consultations and ensuring empathetic care to the patient [58].

CONCLUSION(S)

Palliative care for patients with head and neck cancer is a complex issue that requires a collaborative approach. It is critical for the oral physician to communicate with the patient and family openly and honestly about incurable cancer. Open and legitimate communication is critical to palliative care success. Maintaining a high standard of living should be a priority, and patients' treatment options should include both non surgical and surgical procedures. A specialist in oral medicine is a critical member of the palliative care team. Stomatologists are better able to connect with patients who have incurable head and neck cancer and are nearing the end of their lives, providing the highest level of care and empathy. Increased awareness of palliative oral care among all healthcare professionals will assist terminally ill patients and their families in their search for solace and comfort. While there is undeniable sadness, there is also a great deal of hope for healing and happiness. That is the objective of palliative care.

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