TREATMENT OF NASOPHARYNGEAL CARCINOMA — RECENT ADVANCES

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Many types of tumours, including rare; primitive ones have been described in the nasopharynx. Preliminary biopsy from the nasopharynx either from a mass or from the fossa of rossenmuller (proof biopsies) is often required for histodiagnosis before starting treatment. The histodiagnosis of some tumours can be difficult. Of all the tumours carcinoma is the most common. It is unique in its epidemiology and racial predisposition with distinctive immunogenetics influencing its prognosis and survival.[1] It is important to keep in mind that in all painless head and neck lumps malignancy must be suspected and a primary tumour in the nasopharynx can only be excludingly exhausitive and expansive investigations includings CT Scan, MRI and biopsy.[1] Nasopharyngeal carcinoma (NPC) and its metastasis often display fairly characteristic cytological and hsitological features in lymph nodes, (cervical) which enable a presumptive diagnosis of their origin to be made. This would then alert the surgeon to search for the primary tumours and excising a lymph node, without prior examination by otolarygologist. Radiotherapy is the definitive treatment for nasopharyngeal carcinoma and its regional node metastasis.[14] Trans nasal intra cavity brachy therapy with iridium – 192 is used to treat localized residual or recurrent tumour in the nasopharynx or adjacent areas.[14] Advanced nodel disease poses treatment problem with radiation dosimetry and a high loco regional relapse rate and risk of distant metastasis, so adjuvant and neoadjuvant chemotherapy should be given to reduce locoregional relapse.[14] Surgery plays a minor role in the treatment of nasopharyngeal carcinoma. It is limited to radical neck dissection in controlling radio-resistant nodes and post radiation cervical metastasis and in selected patients, salvage surgery for recurrence in the nasopharynx.[14] Patients with skull base lesions present a challenging management problem because of intractable symptoms and limited therapeutic stereotactic options. Radio surgery is a reasonable treatment modality for such patients, the dose distribution obtained with sterotactic radio surgery provide better homogenetics then an intracavitary implant when used as a boost for nasopharyngeal lesions.[1] Leurg T.W recommended the routine use of a modified reconstruction box for 3-D image reconstuctions for dose calculation and prescription in the treatment of NPC with high dose rate intracavitary brachy therapy.[2] Interruptions and prolonged treatment; (treatment that extend 1 week beyond scheduled time) adversely affect out come in radiotherapy for NPC and the effect of repopulation was confirmed on schedule and

interruptions for whatever reasons should be minimized.[3]

Two hundred and ninety three patients were studied by Chua-DT et al[8]. In these primary tumour volume (PTV) and nodal tumour volume (NTV) were obtained by a outlining the tumour contour followed by summation of areas in sequential pretreatment computed tomography axial scans. Total tumour volume (TTV) was obtained by adding the PTV and NTV. They suggest that a large variation of tumour volume was present in different T stage disease of NPC, and PTV represent an independent prognostic factor of local control that appears to be more predictive then Ho's T stage classification (Table – I). A rare complications of radiation is recurrent cytic radiation necrosis of the brain diagnosed by MRI Scans, and despite of placement of multiple cyto-peritoneal shunts for decompression, new cysts eventually developed and previously shunted cysts enlarged in size the management of their cysts remains unsatisfactory.[5] In-patients with locoregionally advanced NPC. The results of treatment with conventional radiotherapy are unsatisfactory, with significant rates of both distant metastasis and local recurrence. The use of neoadjuvant and adjuvant chemotherapy has resulted in consistently high response rates but no randomized trial has yet demonstrated an improvement in overall survival.[6] NPC is a chemosensitive tumour, and patients with metastatic disease have a high response rate with Cisplatin based chemotherapy.[7] Chua-DT et al[8] restaged one hundred and forty patients of locally recurrent NPC by CT Scan. They were restaged at recurrence according to the AJCC stage classification. Aggressive treatment for the locally recurrent NPC is warranted especially for those with disease confined to the nasopharynx. Survival after retreatment for more extensive disease remains poor but is still superior to supportive treatment only. Early diagnosis of local recurrence allows prompt administration of treatment and is associated with better outcome. The early lesions of NPC should be treated with a combination of external radiotherapy and brachy therapy. The total radiation time if reduced to < 12 weeks and not exceeding a radiation dose of 75 Gy gives the best results[9] Kwong et al[3] studied 74 patients (5 in stage III and 69 in stage IV) with loco regionally advanced NPC who were treated with concurrent chemotherapy and radiotherapy (CCRT). 96.7% of patients showed primary tumour control and 77.0% showed disease free survival of 3 years. The authors reported that infiltration of the clivus by the tumour and LDH greater then 410 U/L are the 2 independent and useful prognostic factor in patients with locoregionally advanced NPC when treated with CCRT[10]

TABLE – I

CLASSIFICATION OF TUMOURS OF THE NASOPHARYNX, ACCORDING TO Ho.

T_1: Tumour confined to the nasopharynx.

T_2: Tumour extended to nasal fosa, oropharynx, or adjacent muscles.

T_3: Tumour extended beyond T_2 limits and sub classified as:

T_{3a}: Bone involvement below the base of skull.

T_{3b}: Involvement with the base of skull.

T_{3c}: Involvement of cranial nerves.

T_{3d}: Involvement of orbits, laryngopharynx, or infratemporal fossa.

Radiotherapy of the head and neck can be associated with conductive and or sensorineural hearing loss due to labyrinthitis and radiation induced neuritis of the acoustic nerve, which can be rehabilitated by cochlear implantation.[11] Apart from conventional chemo radiotherapy, the weekly chemotherapy by 5 flourouracil 1250mg/m2 and Cisplatin 25 mg/m2 has been studied. This therapy was given as a 24 hours continuous intra venous infusion via a subcutaneous implanted port, using ambulatory pump in an out patient setting. Data from this study indicated that 24 hours weekly infusions of 5 flourouracil plus cisplatin has moderate activity but very low toxicity for NPC patients with distant metastasis[12] Radiation therapy has been the traditional treatment for nasopharyngeal carcinoma. Patients with advanced diseases have a higher rate of loco regional as well as distant metastasis, which has warranted the addition of chemotherapy in an attempt to improve survival.[13]

REFERENCES

1. C Melak AJ, et al. Radio surgery for skull base maligneces and nasopharyngeal carcinoma:

   Int-J Radiat-Oncol-Biol-phys 1997; 37(5): 997.

2. Leung TW, et al. The importance of three dimensional brachy therapy treatments planning for nasopharyngeal carcinoma: C lin-Oncol- R-Coll-radiol 1997; 9(1): 35.

3. Kwong DL, et al. The effect of interruptions and prolonged treatment time in radiotherapy for nasopharyngeal carcinoma; Int-J-Radiat-Oncol-Biol-Phys 1997; 39(3): 703.

4. Chua DT, et al. Volumetric analysis of tumour extent in nasopharyngeal carcinoma and correlation with treatment outcome; Int-J-Radiat-Oncol-Biol-Phys 1997; 39(3): 711.

5. Wong ET. Recurrent cystic radiation necrosis of the brain; Oncol-Rep 1998; 5(3): 685.

6. Chan AT, Teo PM, Johnson PJ. Controversies in the management of locoregionally advanced nasopharyngeal carcinoma; Curr-Opin-Oncol. 1998; 10(3): 219.

7. Chan AT, et al. The role of chemotherapy in the management of nasopharyngeal carcinoma; Cancer 1998; 82(6): 1003.

8. Chua OT, et al. Locally recurrent nasopharyngeal carcinoma: treatment results for patients with computed tomigraphy assessment; Int-J-Radiat-Oncol-Biol-Phys 1998; 41(2): 379-86.

9. Chaug-JT etal; Early stage nasopharyngeal carcinoma; radiotherapy dose and time factors in tumour control Jpn-J-Clin-Oncol 1998 March 28(3), 207.

10. Cheng SH, et al. Prognosis features and treatment outcome in loco regionally advanced nasopharyngeal carcinoma following concurrent chemotherapy and radiotherapy. Int-J-Radiat-Oncol-Biol-Phys 1998; 41(4): 755.

11. Formanek M, et al. Cochlear implantation as a successful rehabilitation for radiation induced deafness; Eur-Arch-Otorhinolaryngol 1998; 255 (4):

12. Lin JC, Jan Js, Hsu Cy. Outpatient weekly chemotherapy in-patients with nasopharyngeal carcinoma and distant metastasis; cancer 1998; 83(4): 635.

13. Smith TLD, Rugguero DC. Weissel MC. Nasopharyngeal carcinoma: evidence for improved survival with combined chemoradiation,. Ear-Nose-Throat-j 1998; 77(6): 484.

14. Chuan Tieh Chew. Nasopharynx (Postnatal space)- Scott Browns 6th Edition 1997;16.

15. A.G.D. Maran. Tumours of the Nasopharynx; Head & Neck Surgery 3rd Ed. 1993; page 266.