高雄榮民總醫院

鼻咽癌放射治療政策及執行程序 (2017 年第一版)

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注意事項
一、 本治療指引主要做為臨床醫師與其他醫療保健人員參考之用。
二、 假如您是一位癌症患者，直接引用此治療準則並不恰當，請與您的醫師討論決定您最恰當的治療

本版與上版的差異: 1. 更新治療建議
2. 增加再次放射治療靶體積與劑量處方原則
3. 更新參考文獻

前言

放射治療是鼻咽癌的主要治療方式之一,除少數診斷時就已多處遠端轉移的病患以藥物治療為主,其餘病人必須接受放射治療以控制原發及頸部淋巴結腫瘤。同步放射化學治療的角色是增進中晚期病患的局部控制率與存活率;前置化學治療對於特定期別可以減少遠端轉移及提高存活率。手術切除在鼻咽癌的應用主要是放射治療後殘存淋巴結的摘除，或局部復發時之治療選項。鼻咽癌的診療照護需要專業團隊共同合作，此團隊包括有耳鼻喉科、放射腫瘤科、血液腫瘤科、放射線科、復健營養與護理等組成。本治療政策及執行程序是一概括性的原則，實際治療規劃應綜合病患的情形、各專科醫師的臨床判斷、及最新的醫學研究成果等，作最適合的治療建議。

鼻咽癌之放射治療政策(strategy)及執行程序

1. 放射治療的適應症及整體建議：[1, 4-10]（鼻咽癌的臨床分期見附表一）

1.1 T1N0M0：Definitive RT, neck targets for elective RT to the neck include levels 7A/B, II, III, and VA

1.2 T2N0M0：Definitive RT ± concurrent systemic therapy if high-risk features (bulky tumor volume, high serum EBV DNA copy number); Definitive RT +- reduced chemotherapy cycle (non-inferiority)。

1.3 T1-2N1M0 或 T3N0M0：CCRT ± induction or adjuvant CT if high-risk features (bulky tumor volume, high serum EBV DNA copy number)

1.3.1 前置化學治療(induction chemotherapy)：放射治療前給予高榮鼻咽癌團隊前置化療處方 2 至 3 療程。

1.3.2 輔助性化學治療(adjuvant chemotherapy)：同步化學放射治療後再給予高榮鼻咽癌團隊輔助性化療處方

1.4 T3,N1-3,M0 or T4,N0-3,M0 or T0 (EBV+)-2,N2-3,M0：

Induction CT+CCRT or RT (Poor medical condition or patient’s preference)

CCRT ± Adjuvant CT if high risk for distant failure (cT4 or cN3 or clinical demand)

For EBV related T3,N0~1,M0 disease, I/C 後 EBV not detected/complete response, 經團隊會議討論可 RT alone，並於 RT 間 check EBV titer

1.5 M1a:

PS 0-1: Induction chemotherapy +RT(RT to primary and regional nodes and to oligometastates as indicated) or CCRT/RT or Maintenance capecitabine

PS 2: Systemic therapy

M1b: PS 0-2: Systemic therapy

PS 3-4: Best supportive care
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1.7 局部殘存或復發

1.7.1 鼻咽腔部位：評估是否進行手術治療、再次放射治療、及手術後放射治療。

1.7.2 頸部淋巴結：優先考慮頸部淋巴摘除術，或放射治療

1.8 放射治療方式：以強度調控放射治療(IMRT)、動態式弧形放射治療(Volumetric Modulated Arc Therapy, VMAT)及可調式放射治療(Adaptive radiotherapy) [7,8]等為主要治療方法。

註*：高風險包括腫瘤體積大、高 EBV 病毒量/DNA copy number

2. 固定模具製作及影像擷取(定位)：

2.1 電腦斷層模擬攝影(CT simulation)，若臨床需要可考慮靜脈顯影劑注射以增加腫瘤與血管淋巴等組織之辨識。

2.2 仰臥，並以適當之固定器固定。

2.3 以雷射光於病人頭頸部兩側及中央劃上等中心(isocenter)記號

2.4 每 2.5 毫米擷取一張電腦斷層影像

2.5 將影像傳送至電腦治療計劃系統(radiation treatment plan, RTP system)

3. 靶體積定義(Target Volume Definition) [1-3,8,10]

3.1 腫瘤靶體積(Gross Target Volume, GTV): 電腦斷層或磁振照影影像可辨識的病灶(gross lesions seen at CT scan or MRI)，包括鼻咽腫瘤與淋巴腫瘤

3.2 臨床靶體積(Clinical Target Volume, CTV):

3.2.1 高風險臨床靶體積(CTV-H)：GTV 及臨床上疑似腫瘤侵犯的組織。

3.2.2 中等風險臨床靶體積(The intermediate risk CTV, CTV-M, CTV54-63)：整個鼻咽、蝶竇(sphenoid sinus)底部、鼻咽側顱底(skull base)、鼻腔後 0~2 公分, 上頜竇(maxillary sinus)後緣 0.5~2 公分、翼狀窩(pterygoid fossa)、側後咽壁(lateral and posterior pharyngeal wall)一直到扁桃窩的上緣、咽後淋巴(retropharyngeal nodes)、T3,T4 的病灶建議依腫瘤侵犯位置視需要包括海綿竇(cavernous sinus)與蝶竇(sphenoid sinus)。兩側頸部淋巴包括第 II、III、Va 區；在較低位的頸部淋巴有轉移時的第 IV 區;若臨床上屬高風險時可包括 IB 及 VIII 淋巴區域。(第 I 區: optional)

3.2.3 低度風險臨床靶體積(The low risk CTV,CTV-L, CTV44-50)：第 IV、Vb 區與鎖骨上窩淋巴。(第 I 區 optional)

3.2.4 CTV-HM：小於 1cm 疑似的淋巴結 (optional)

3.3 計劃靶體積(Planning Target Volume, PTV): PTV-H, PTV-M/PTV54-63, PTV-L/PTV44-50：各對應的 CTV 往外加 3-5mm 範圍。

3.4 再次放射治療(re-irradiation)(12)：照野以規劃腫瘤靶體積為主，不包括區域淋巴結等臨床靶體積。

4. 放射治療計畫規劃(Radiation Therapy Planning)及放射治療劑量:

4.1 劑量處方 (dose prescription):

4.1.1 PTV-H 總劑量為 70-70.2 格雷(1.8-2.0 格雷分次);69.96 格雷(2.12 格雷分次)[1]

4.1.2 PTV-M/PTV54-63 劑量為 54-63 格雷

4.1.3 PTV-L/PTV44-54 劑量為 44-54 格雷

4.1.4 CTV-HM 劑量為 58.8-63.8 格雷(optional, 2.2~2.25 格雷/次)

4.1.5 影像導引(IGRT)可提高準確性與減少周邊器官劑量[9]

4.1.6 近接治療:選擇性的應用在 rcT1-2 鼻咽腔復發病人,體外照射 40-60Gy 後使用高劑量率(HDR)近接治療,每次 4-6 Gy,給予 2-4 次治療。

4.2 再次放射治療劑量處方(12,13):50-66 格雷(2.0 格雷分次)(目標總劑量 60-66 格雷)(12)、多分次放射治療(hyperfractionation)優先、寡分次放射治療(hypofractionation)等方式,需依照腫瘤位置鄰近組織耐受劑量等因素個別調整劑量處方。

5. 危急器官 (Organ at Risk)及劑量限制(Dose Constraints)

5.1 腦幹:50-60Gy

5.2 脊髓:45-50Gy

5.3 視神經及視神經交义:<55Gy

5.4 眼球:45-50Gy

5.5 水晶體:4~10Gy

5.6 腮腺:平均劑量盡量低於 26-34 Gy

5.7 顳下頜關節:70Gy

5.8 咽縮肌群: 上中小於 64.2 Gy [11]

(以上為通則,應針對不同狀況微調)

6.追蹤:

6.1 詢問病史與身體檢查

第一年:1-3 個月

第二年:2-4 個月

第三至五年:4-6 個月

第六年以後:6-12 個月

6.2 核磁共振或電腦斷層檢查:放射治療後 3~6 個月內作第一次當基準,以後每年或臨床有發現時再作檢查。

6.3 頸部有接受照射者,建議每 6-12 個月驗甲狀腺刺激素(TSH)

附表一:鼻咽癌之臨床期別〔clinical stage system〕

T 分期

T1: Tumor confined to nasopharynx or extension to any of the following without parapharyngeal involvement: (1) oropharynx; (2) nasal cavity (including nasal septum)

T2: Tumor with extension to any of the following: (1) parapharyngeal space; (2) adjacent soft tissue involvement (medial pterygoid, lateral pterygoid, prevertebral muscles)

T3: Tumor with unequivocal infiltration into any of the following bony structures: (1)

skull base (including pterygoid structures); (2) paranasal sinuses; (3) cervical vertebrae。

T4：Tumor with any of the following extension/involvement: (1) intracranial extension; (2) unequivocal radiological and/or clinical involvement of cranial nerves; (3) hypopharynx; (4) orbit (including inferior orbital fissure); (5) parotid gland; (6) extensive soft tissue infiltration beyond the anterolateral surface of the lateral pterygoid muscle。

N 分期

N0：No tumor involvement of regional lymph node(s)。

N1：Tumor involvement of any of the following: (1) unilateral cervical lymph node(s); (2) unilateral or bilateral retropharyngeal lymph node(s). Tumor involvement in all of the following: (1) ≤6 cm in greatest dimension; (2) above the caudal border of cricoid cartilage; (3) without advanced extranodal extension

N2：Tumor involvement of bilateral cervical lymph nodes and all of the following: (1) ≤6 cm in greatest dimension; (2) above the caudal border of cricoid cartilage; (3) without advanced extranodal extension。

N3：Tumor involvement of unilateral or bilateral cervical lymph node(s) and any of the following: (1) >6 cm in greatest dimension; (2) extension below the caudal border of cricoid cartilage; (3) advanced radiologic extranodal extension with involvement of adjacent muscles, skin, and/or neurovascular bundle。

M 分期

M0：無遠端轉移。

M1a-b：M1: distant metastasis; M1a: ≤3 metastatic lesions in ≥1 organs/ sites; M1b: >3 metastatic lesions in ≥1 organs/sites。

A A, T and N groupings, eighth edition

		T1	T2	T3	T4
M0	N0	I	II	III	IVA
	N1	II	II	III	IVA
	N2	III	III	III	IVA
	N3	IVA	IVA	IVA	IVA
M1	Any N	IVB			

B A, T and N groupings, ninth edition

		T1	T2	T3	T4
M0	N0	IA	IA	II	III
	N1	IB	IB	II	III
	N2	II	II	II	III
	N3	III	III	III	III
M1	M1a	IVA			
	M1b	IVB			

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