國軍左營總醫院放射腫瘤科

2026 年口腔癌放射治療指引

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口腔癌放射治療指引與監測修正對照表

2025	2026	說明
	根治性放射治療技術之 二、無手術之放射治療新增 Reduce field boost 可考慮再做 CT scan simulation 評估療效，並做為 treatment plan 參考。	Adaptive radiotherapy for H&N cancer
	更新 references	補充

放射治療適應症

一、根治性目的(curative intent)

1. T1-2N0 Definitive RT, T1-2N1: CCRT
2. 手術後之輔助性放射治療(adjuvant radiotherapy)
   - A. Inadequate margin
   - B. ECS (Extracapsular nodal spread)
   - C. LN(+) (N1 in level IV/V or N2, N3)
   - D. PNI (Perineural invasion)
   - E. LVP(Lymphovascular permeation)
   - F. T3 or T4
3. 可切除但有內科問題或開刀危險不適合手術(Resectable, but with poor medical problem or surgical risk)
4. 未產生遠端轉移之局部復發

二、緩解性目的(palliative intent)

1. 無法手術切除:T4b or Unresectable nodal disease
2. 有遠端轉移病灶
3. 併有遠端轉移且產生症狀之局部復發

根治性放射治療必要流程

一、治療計劃前完整的臨床評估

1.確認期別、手術紀錄及病理報告，包括組織型態、腫瘤大小、惡性級數、開刀邊緣、有無神經旁侵犯、有無淋巴血管浸潤、

有無淋巴結轉移(包括數目/區域)、有無 ECS 等等。

2. 安排必要檢驗以排除有全身轉移之可能。

3.經團隊會議討論及相關科別照會。

4.必要時會做放射治療前的牙科會診及牙齒處置。

二、治療體位設定

1.病人採仰臥，以頭頸模具固定，治療標記設定於模具及身體上。

三、模擬攝影

1.病人依設定體位躺上電腦斷層攝影床，以金屬線進行必要標記(如手術疤痕、腫大之頸部淋巴、可疑腫塊)，視腫瘤位置及病患狀況需要時口中可含 cork 固定，並配合模具固定身體位置。

2.通常電腦斷層掃描每切面為 2.5mm，掃描範圍應包含整個口腔腫瘤及頸部淋巴區域，通常至少包括從眼眶到鎖骨下緣。

3.掃描後應以油性水洗不掉簽字筆作好標記供治療辨認。

四、治療計劃(treatment planning)

1. 臨床腫瘤體積(CTV: clinical target volume)

A.手術後之輔助性放射治療：CTV 包括原發腫瘤區(primary tumor bed)、侵犯淋巴部位/淋巴區以及潛在風險淋巴區。

B.無手術之放射治療：CTV 包括原發腫瘤部位、侵犯淋巴部位/淋巴區以及潛在風險淋巴區。

C.局部復發病人：CTV 包括復發部位。

2. 採用強度調控放射治療(IMRT)為治療方式，以減少危急器官放射劑量。

3. 治療計劃標靶體積(PTV: planning target volume)：PTV 依 CTV 增加 0.3 至 0.5 公分。鄰近腦幹處，考慮器官忍受劑量可為 0.1 公分。

4. 劑量評估參數：至少包括腦幹、脊髓、腮腺、顳下頜關節，當腫瘤位置較高時，尚要包括眼睛、視神經，視交叉等劑量。

五、放射治療前評估紀錄：包括病理報告、期別、核磁共振或電腦斷層攝影影像報告、病人簡史、理學檢查、重要檢查結果、診斷評估、體能狀態及治療計劃。

六、首次治療前應使用定位照相驗證片以確保照射範圍正確性，並由主治醫師確認簽章後才能進行。

根治性放射治療技術

一、 手術後之輔助性放射治療

1. 原發腫瘤區(primary tumor bed) 至少給予 59.4Gy,侵犯淋巴部位(involved nodes)給予 60-66Gy ,未侵犯但有潛在風險淋巴區給予 45-63 Gy。每天一次，每週五次。每次 1.8-2Gy。
2. 輔助性放射治療建議於手術後三至四週後開始實施。
3. 建議分高，低危險區域做二階段不同劑量治療。

二、無手術之放射治療

1. 原發腫瘤部位(primary tumor) 及侵犯淋巴部位(involved nodes)給予 66-72Gy ,未侵犯但有潛在風險淋巴區給予 45-63Gy。每天一次，每週五次。每次 1.8-2Gy。合併化學治療時可考慮向下調整治療劑量。

2. 建議分高，中，低危險區域做三階段不同劑量治療。Reduce field boost 可考慮再做 CT scan simulation 評估療效，並做為 treatment plan 參考。

三、Example:

A. Postoperative RT:

Sequential: Two phases: deliver the initial phase (week 4-5) followed by high-dose boost volume phase (weeks 6-7) using 2 separate dose plans

CTV-H: primary tumor bed and involved nodal area:
59.4 Gy/33fr-68.4Gy/38fr

CTV-L: uninvolved nodal area :
41.4 Gy/23fr-50.4Gy/28fr

CTV-H: primary tumor bed with 1.0-1.5 cm margin /
involved nodal bed with 0.5-1.0 cm margin or involved nodal level

CTV-L: uninvolved nodal level

B. Definitive RT:

Sequential IMRT technique: deliver the initial phase (week 4-5) followed by moderate-dose boost volume phase (week 5-6.5), then gross tumor boost to high dose (week 6.5 to 8), usually using 3 separate dose plans

CTV-H: primary tumor with involved nodal area:

66.6Gy/37fx – 75.6Gy/42fx

CTV-M: primary tumor with 1.5-2.0 cm margin /

involved node with 1.0-1.5 cm margin or involved nodal level :

57.6 Gy/ 32 fx– 61.2 Gy/ 34 fx

CTV-L: uninvolved nodal area :

41.4Gy/23fx-50.4Gy/28fx

重要器官劑量評估參數

NOTE: All dose constraints below should be met whether the patient undergoes 3D-CRT or IMRT techniques.

Critical Normal Structures

Dose constraints are given below:

Structure	true structure constraint	PRV constraint
Brainstem	54 Gy max dose	no more than 1% to exceed 60 Gy
Spinal Cord	45 Gy max dose	no more than 1% to exceed 50 Gy
Optic Nerves, Chiasm	54Gy max dose	54 Gy max dose
Mandible, TM joint	70 Gy, if not possible then nomore than 1cc to exceed 75 Gy	

Parotid glands: Mean dose <26 Gy (optimal) or 30 Gy(acceptable), should be achieved in at least one gland; or at least 50% of one gland will receive < 33 Gy (optimal) or 35Gy(acceptable) (should be achieved in at least one gland).

Other normal structurescan be considered:

Each cochlea	No more than 5% receives 55 Gy or more
Eyes	Max dose less than 45Gy
Lens	Max dose less than 10Gy
Glottic Larynx	Mean dose less than 40Gy
Esophagus, Postcricoid pharynx	Mean dose less than 45 Gy

根治性口腔癌放射治療常見之副作用及程度分級:

CTCAE v5.0

	Grade				
Adverse event	**1**	**2**	**3**	**4**	**5**
Oral pain	Mild pain	Moderate pain; limiting Instrumental ADL	Severe pain; limiting self care ADL	-	-
Definition: A disorder characterized by a sensation of marked discomfort in the mouth, tongue or lips					
Mucositis oral	Asymptomatic or mild symptoms; intervention nor indicated	Moderate pain; not interfering with oral intake; modified diet indicated	Severe pain; interfering with oral intake	Life-threatening consequences; urgent intervention indicated	death
Definition: A disorder characterized by inflammation of the oral mucosal					
Dry mouth	Symptomatic(e.g., dry or thick saliva) without significant dietary alteration; unstimulated saliva flow>0.2ml/min	Moderate symptoms; oral intake alteration(e.g., copious water, other lubricants, diet limited to purees and/or soft, moist foods); unstimulated saliva 0.1-0.2 ml/min	Inability to adequately aliment orally; tube feeding or TPN indicated; unstimulated saliva <0.1 ml/min	-	-
Definition: A disorder characterized by reduced salivary flow in the oral cavity					
Dysphagia	Symptomatic, able to eat regular diet	Symptomatic and altered eating/swallowing	Severely altered eating/swallowing; tube feeding or TPN or hospitalization indicated	Life-Threatening consequences; urgent intervention indicated	Death
Definition: A disorder characterized by difficulty in swallowing					
Dermatitis radiation	Faint erythema or dry desquamation	Moderate to brisk erythema; patchy moist desquamation, mostly confined to skin folds and creases; moderate edema	Moist desquamation in areas other than skin folds and creases; bleeding induced by minor trauma or abrasion	Life-threatening consequences; skin necrosis or ulceration of full thickness dermis; spontaneous bleeding from involved site; skin graft indicated	Death
Definition: A finding of inflammatory reaction occurring as a result of exposure to biologically effective levels of ionizing radiation					

根治性口腔癌放射治療可能副作用與處置:

一、 急性副作用：

1. 口腔黏膜炎：常以溫開水漱口，嚴重時可請醫師處方漱口劑及藥膏。
2. 嗅覺味覺遲鈍：需配合調節食物口味，在治療後將漸漸恢復。
3. 皮膚炎: 減少磨擦，嚴重時可請醫師處方藥膏。
4. 口乾: 隨身攜帶水壺漱口或飲用。
5. 下巴、頸部淋巴水腫：嚴重時可請醫師處理或開處方藥物。
6. 短暫性脊髓病變：在治療後將漸漸恢復。
7. 在經濟條件許可下，治療期間可建議病患服用 Glutamine 降低黏膜副作用。

二、 慢性副作用：

1. 口乾: 隨身攜帶水壺漱口或飲用，嚴重時可請醫師處方藥物。
2. 蛀牙: 保持口腔清潔，定期牙科門診防治。
3. 牙關緊閉: 練習張口運動。
4. 頸部僵硬: 經常做頸部柔軟運動及手部按摩。
5. 中耳炎及聽力減退: 定期耳鼻喉科門診追蹤。
6. 少數零星個案且較嚴重的副作用，如腦組織壞死、視神經及視網膜病變、腦幹病變、腦下垂體功能低下、永久性脊髓病變、骨頭壞死、白內障、吞嚥困難、大量出血及中風等等：定期門診追蹤，嚴重時可考慮介入處置。

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2026 年口腔癌放射治療品質監測指標

1. 根治性口腔癌病人接受放射治療前，主治醫師對該療程進行確認及簽章比率:閾值:95%

分子定義：監測期間內，因口腔癌進行根治性放射治療，於接受放射治療前，主治醫師對病患療程進行確認及簽章之人數

分母定義：監測期間內，因口腔癌進行根治性放射治療總人數

2. 根治性口腔癌病人接受放射治療前，使用定位照相以確保照射範圍正確性之比率:閾值:95%

分子定義：監測期間內，因口腔癌進行根治性放射治療，於接受放射治療前，使用定位照相或影像導引以確保照射範圍正確性之人數

分母定義：監測期間內，因口腔癌進行根治性放射治療總人數

3. 根治性口腔癌病人接受放射治療時，劑量符合標準政策之比率:閾值:90%

分子定義：監測期間內，因口腔癌進行根治性放射治療，於療程完成時總劑量與標準劑量誤差為正負(含)10%以內之人數

分母定義：監測期間內，因口腔癌進行根治性放射治療總人數

4. 根治性口腔癌病人接受放射治療時，治療時間符合標準政策之比率:閾值:90%

分子定義：監測期間內，因口腔癌進行根治性放射治療，於療程完成時，總治療時間與標準治療時間誤差為正負(含)兩週以內之人數

分母定義：監測期間內，因口腔癌進行根治性放射治療總人數

5. 根治性口腔癌病人接受放射治療時，治療次數符合標準政策之比率:閾值:90%以上

分子定義：監測期間內，因口腔癌進行根治性放射治療，於療程完成時，實際次數與標準次數誤差為正負(含)10%以內之人數

分母定義：監測期間內，因口腔癌進行根治性放射治療總人數

6. 根治性口腔癌病人接受放射治療時，急性期非血液副作用出現第三級或以上之反應的比率:閾值:30%

分子定義：監測期間內，因口腔癌進行根治性放射治療；於療程完成時，急性期副作用出現第三級或以上之反應之人數

分母定義：監測期間內，因口腔癌進行根治性放射治療總人數