食道癌診療指引

胸腔腫瘤暨食道癌多專科團隊

2010.01 制訂
2011.12 修訂
2012.12 修訂
2014.12 修訂

參考資料：NCCN Guidelines Version

Esophageal and Esophagogastic Junction Cancers V1.2015

全民健康保險藥品給付規定行政院衛生署一百零三年版

☆：選項

EUS：Endoscopic ultrasound

EMR：Endoscopic mucosal resection

BSC：Best supportive care

CCRT：Chemoradiation

C/T：Chemotherapy

RT：Radiotherapy

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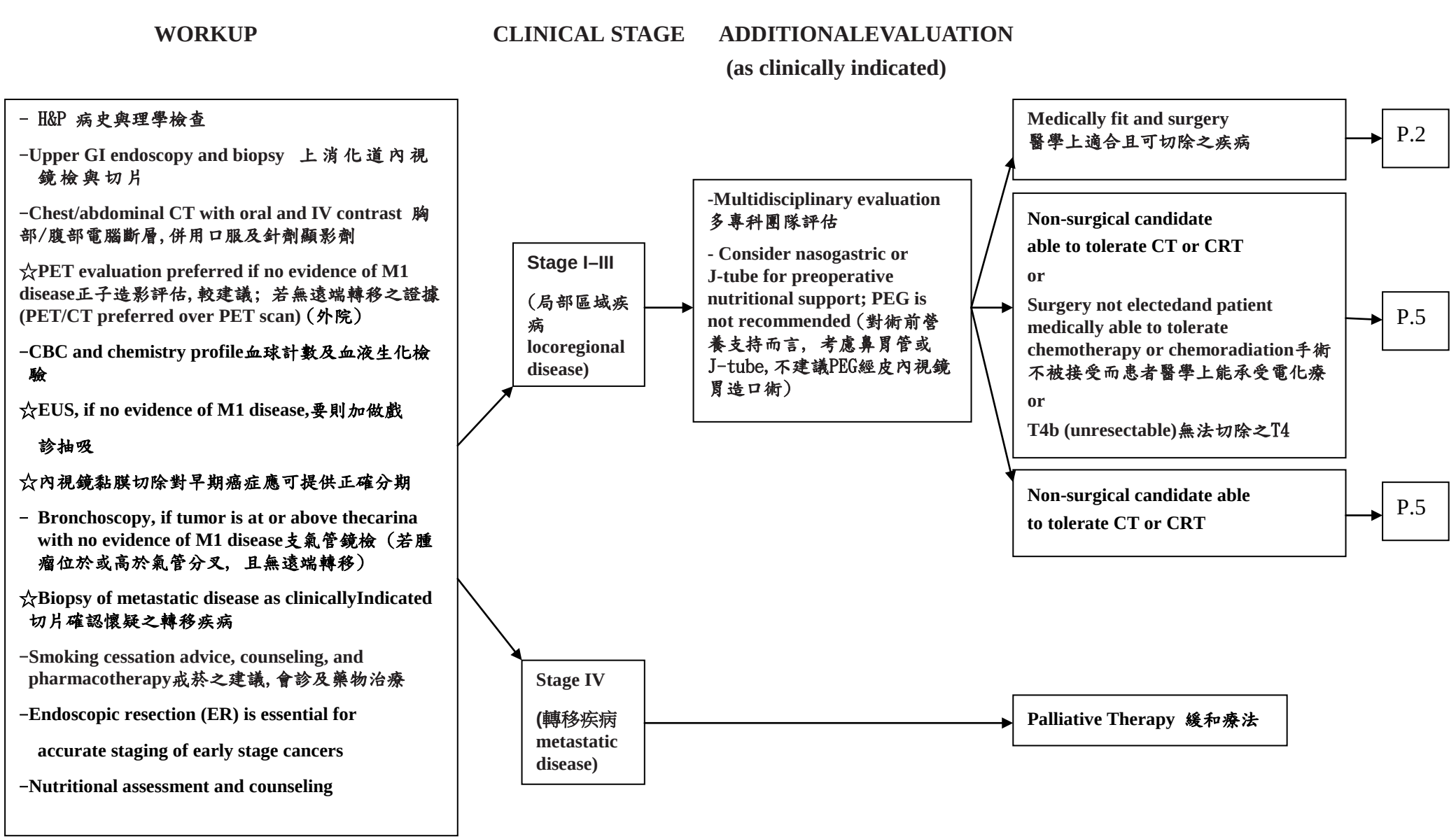
WORKUP
CLINICAL STAGE
ADDITIONALEVALUATION
(as clinically indicated)
- H&P 病史與理學檢查
-Upper GI endoscopy and biopsy 上消化道內視鏡檢與切片
-Chest/abdominal CT with oral and IV contrast 胸部/腹部電腦斷層,併用口服及針劑顯影劑
☆PET evaluation preferred if no evidence of M1 disease正子造影評估,較建議; 若無遠端轉移之證據(PET/CT preferred over PET scan)(外院)
-CBC and chemistry profile血球計數及血液生化檢驗
☆EUS, if no evidence of M1 disease,要則加做戲
診抽吸
☆內視鏡黏膜切除對早期癌症應可提供正確分期
- Bronchoscopy, if tumor is at or above thecarina with no evidence of M1 disease支氣管鏡檢(若腫瘤位於或高於氣管分叉, 且無遠端轉移)
☆Biopsy of metastatic disease as clinicallyIndicated 切片確認懷疑之轉移疾病
-Smoking cessation advice, counseling, and pharmacotherapy戒菸之建議,會診及藥物治療
-Endoscopic resection (ER) is essential for
accurate staging of early stage cancers
-Nutritional assessment and counseling
Stage I–III
(局部區域疾病 locoregional disease)
Stage IV
(轉移疾病 metastatic disease)
-Multidisciplinary evaluation 多專科團隊評估
- Consider nasogastric or J-tube for preoperative nutritional support; PEG is not recommended (對術前營養支持而言, 考慮鼻胃管或J-tube,不建議PEG經皮內視鏡胃造口術)
Medically fit and surgery 醫學上適合且可切除之疾病
Non-surgical candidate able to tolerate CT or CRT
or
Surgery not electedand patient medically able to tolerate chemotherapy or chemoradiation手術不被接受而患者醫學上能承受電化療
or
T4b (unresectable)無法切除之T4
Non-surgical candidate able to tolerate CT or CRT
Palliative Therapy 緩和療法
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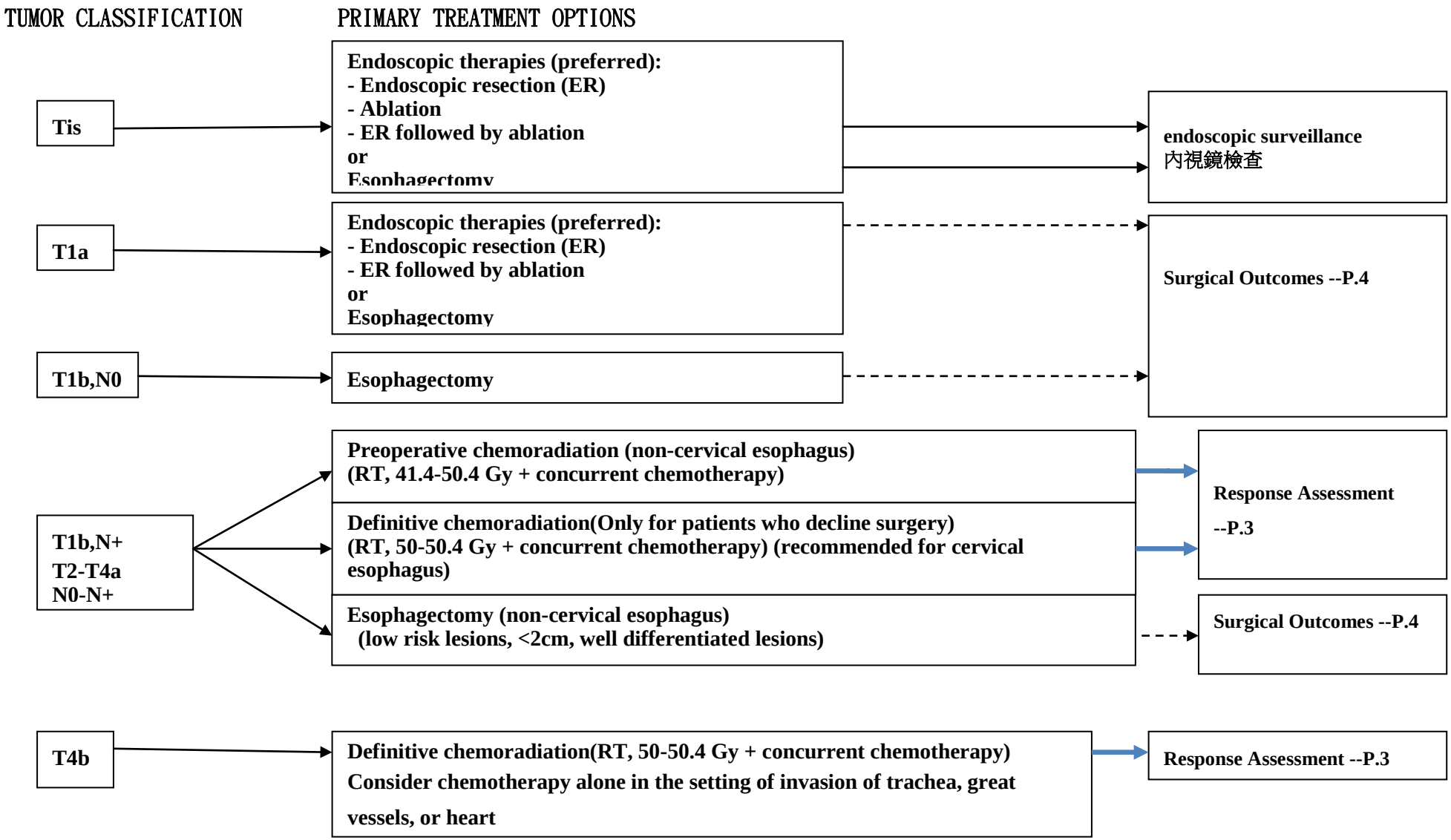
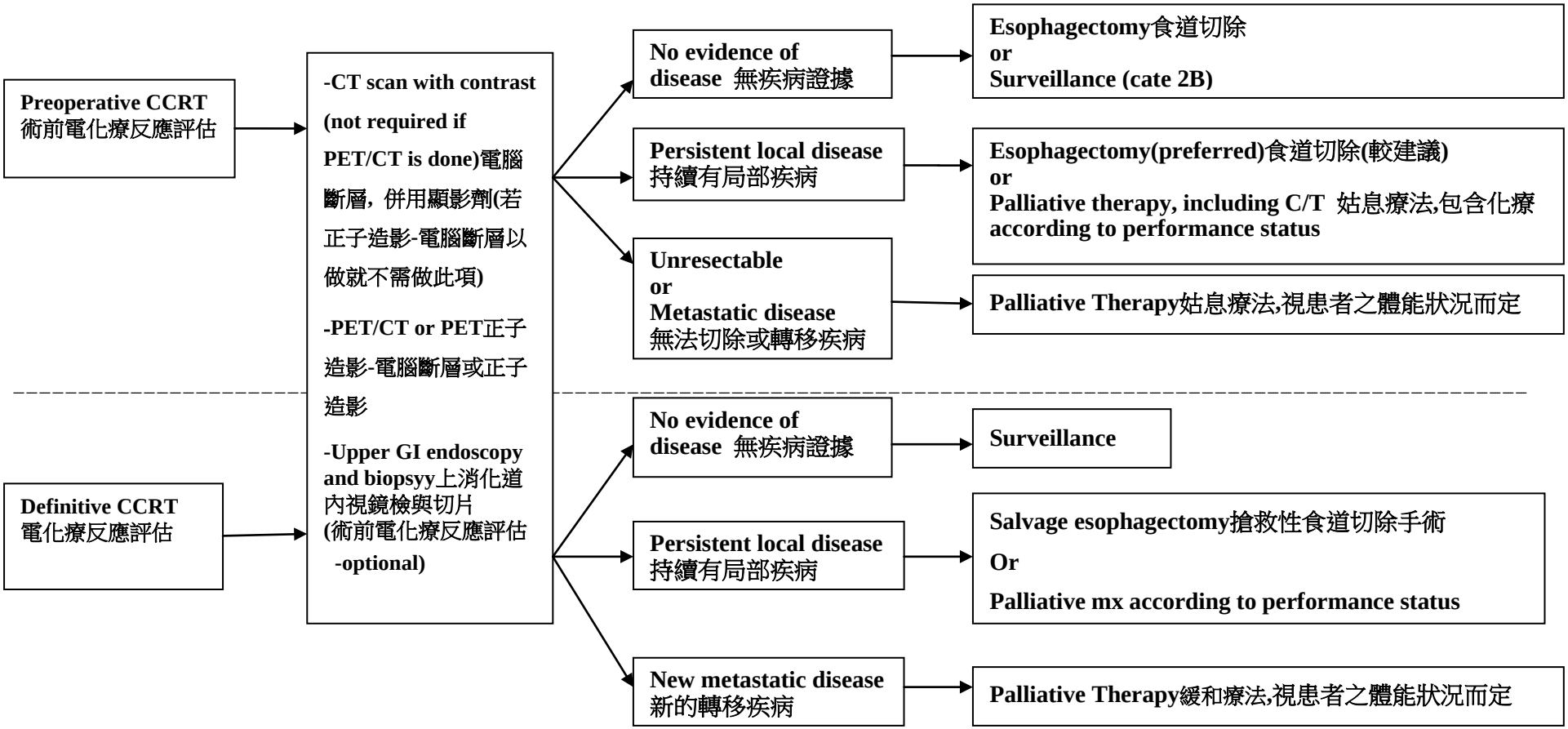
鱗狀上皮食道癌 Stage Ⅰ-Ⅲ，適合手術



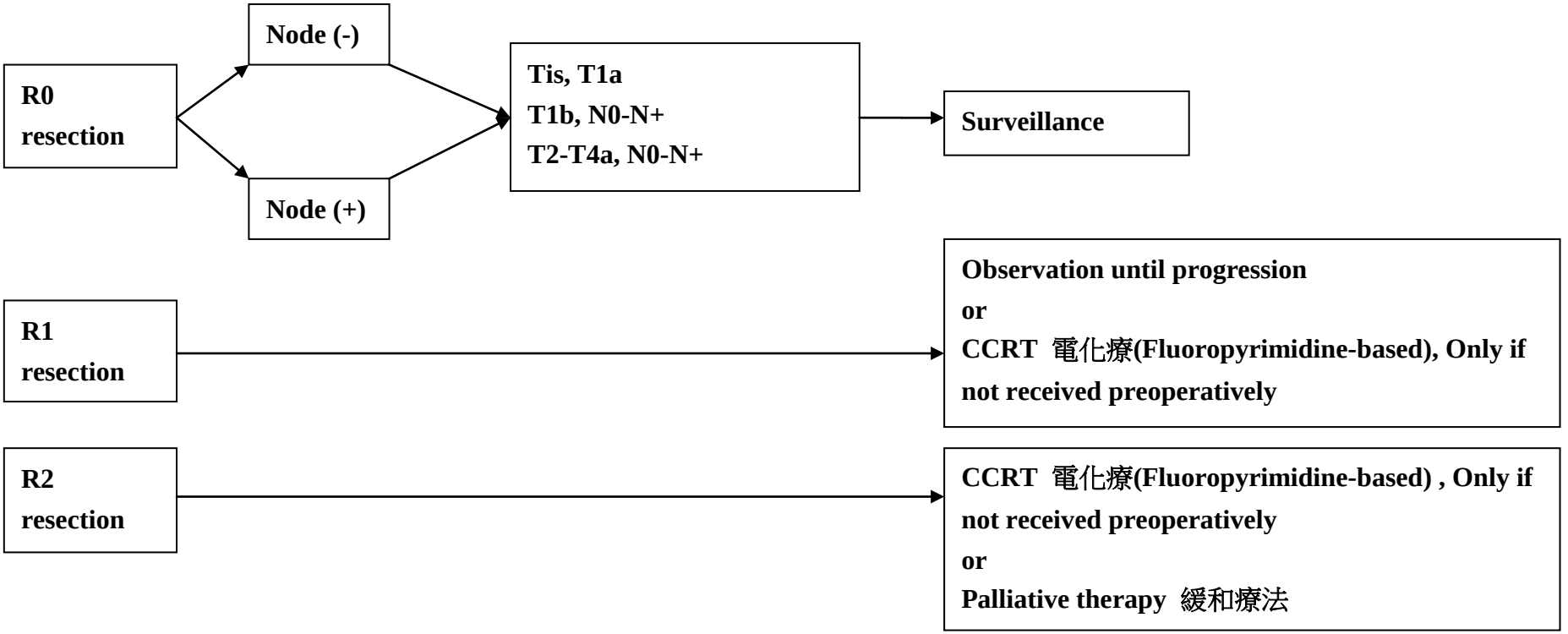
鱗狀上皮食道癌 Stage Ⅰ-Ⅲ
術前/Definitive電化療反應評估

RESPONSEASSESSMENTOUTCOMEADJUVANT TREATMENT



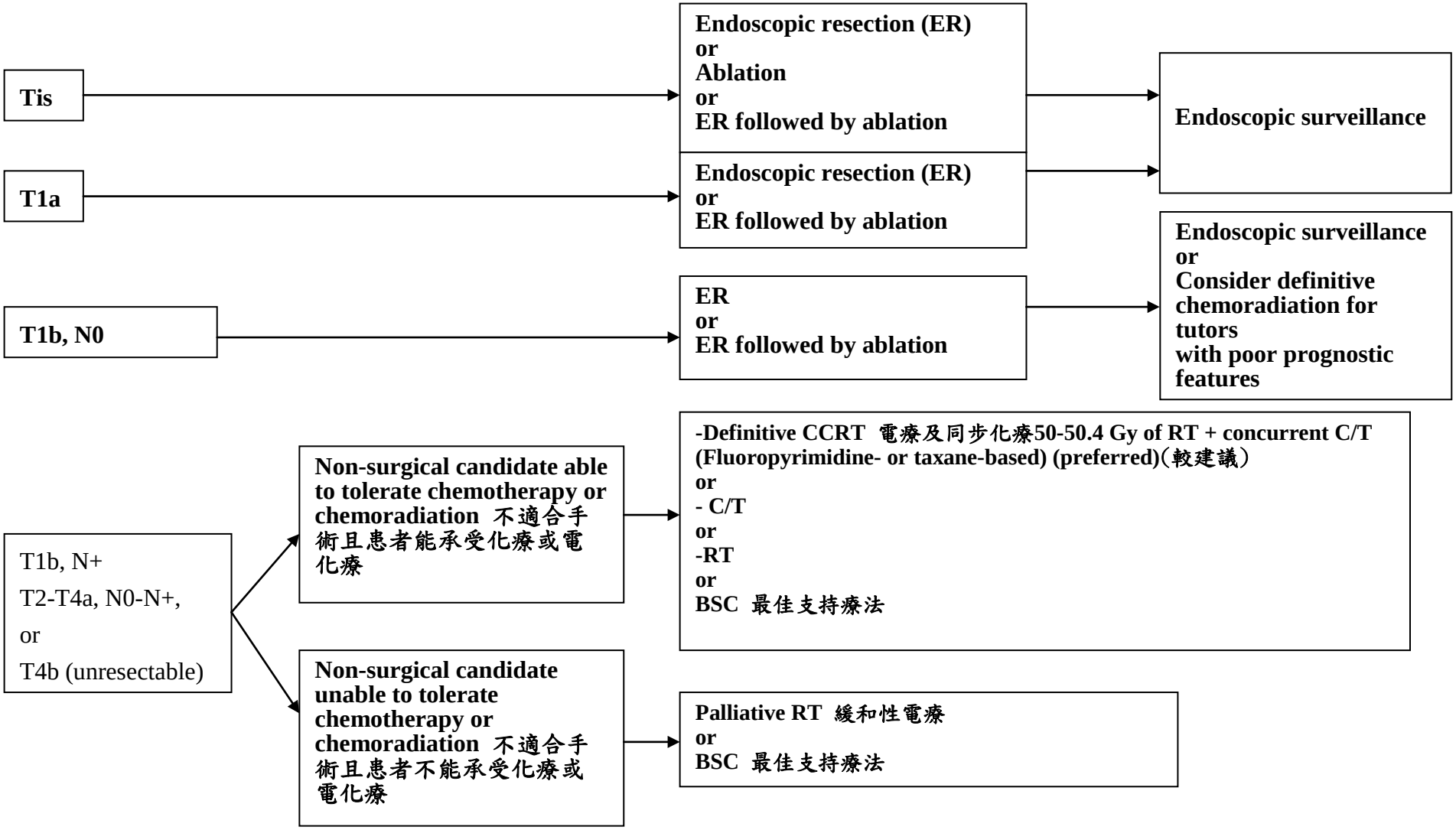
SURGICAL OUTCOMES/CLINICAL **PATHOLOGIC FINDINGS** **POSTOPERATIVE TREATMENT**

(Patients Have Received Preoperative Chemoradiation or Chemotherapy)



R0：No cancer at resection margins R1：Microscopic residual cancer R2：Macroscopic residual cancer or M1b

PRIMARY TREATMENT FOR NON-SURGICAL CANDIDATE



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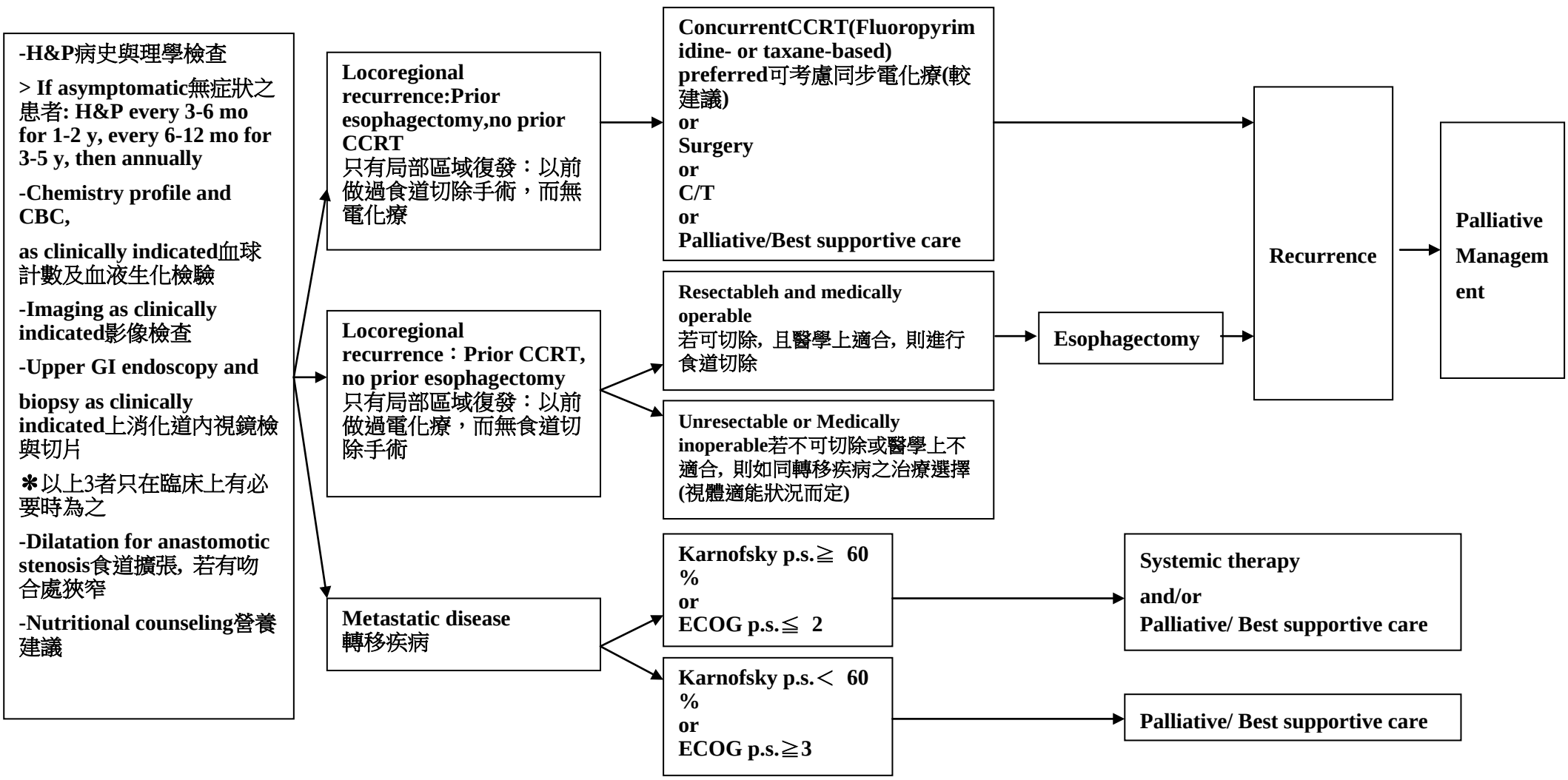
FOLLOW-UP
RECURRENCE
PALLIATIVE/SALVAGE THERAPY
-H&P病史與理學檢查
> If asymptomatic無症狀之患者: H&P every 3-6 mo for 1-2 y, every 6-12 mo for 3-5 y, then annually
-Chemistry profile and CBC,
as clinically indicated血球計數及血液生化檢驗
-Imaging as clinically indicated影像檢查
-Upper GI endoscopy and
biopsy as clinically indicated上消化道內視鏡檢與切片
*以上3者只在臨床上有必要時為之
-Dilatation for anastomotic stenosis食道擴張, 若有吻合處狹窄
-Nutritional counseling營養建議
Locoregional recurrence:Prior esophagectomy,no prior CCRT
只有局部區域復發：以前做過食道切除手術，而無電化療
Locoregional recurrence：Prior CCRT, no prior esophagectomy
只有局部區域復發：以前做過電化療，而無食道切除手術
Metastatic disease
轉移疾病
ConcurrentCCRT(Fluoropyrimidine- or taxane-based) preferred可考慮同步電化療(較建議)
or
Surgery
or
C/T
or
Palliative/Best supportive care
Resectableh and medically operable
若可切除, 且醫學上適合, 則進行食道切除
Unresectable or Medically inoperable若不可切除或醫學上不適合, 則如同轉移疾病之治療選擇(視體適能狀況而定)
Esophagectomy
Recurrence
Palliative Management
Karnofsky p.s.≧ 60 %
or
ECOG p.s.≦ 2
Karnofsky p.s.＜ 60 %
or
ECOG p.s.≧3
Systemic therapy
and/or
Palliative/ Best supportive care
Palliative/ Best supportive care

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Chemotherapy Regimens

Preoperative Chemoradiation

- **Paclitaxel and carboplatin (optinal)**
  Paclitaxel 50 mg/m^{2}IV on Day 1
  CarboplatinAUC 2 IV on Day 1
  Weekly for 5 weeks

- **Cisplatin and fluoropyrimidine (5-FU or capecitabine)**
  Cisplatin 75-100 mg/m^{2}IV on Days 1 and 29
  5-FU 750-1000 mg/m^{2}IV continuous infusion
  over 24 hours daily on Days 1-4 and 29-32 35-Day cycle

  Cisplatin 30 mg/m^{2}IV on Day 1 (optional)
  Capecitabine 800 mg/m^{2}PO BID on Days 1-5
  Weekly for 5 weeks

Definitive Chemoradiation

- **Cisplatin and fluoropyrimidine (5-FU or capecitabine)**

  Cisplatin 75-100 mg/m^{2}IV on Day 1
  5-FU 750-1000 mg/m^{2}IV continuous infusion over 24 hours daily on Days 1-4
  Cycled every 28 days for 2-4 cycles for 2 cycles with radiation followed by 2 cycles without radiation

  Cisplatin 30 mg/m^{2}IV on Day 1 (optional)
  Capecitabine 800 mg/m^{2}PO BID on Days 1-5
  Weekly for 5 weeks

- **Paclitaxel or docetaxel and cisplatin (optional)**

  Paclitaxel 60 mg/m^{2}IV on Days 1, 8, 15, and 22
  Cisplatin 75 mg/m^{2}IV on Day
  Given for 1 cycle

  Docetaxel 60 mg/m^{2}IV on Days 1 and 22
  Cisplatin 60-80 mg/m^{2}IV on Days 1 and 22
  Given for 1 cycle

  Docetaxel 20-30 mg/m^2 IV on Day 1
  Cisplatin 20-30 mg/m^{2}IV on Day 1
  Weekly for 5 weeks

References

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6. MinskyBD,PajakTF,Ginsberg RJ, etal.INT 0123(RadiationTherapyOncologyGroup 94-05) phaseIIItrialof combined-modalitytherapyforesophagealcancer:high-dose versusstandard-doseradiationtherapy.JClinOncol2002;20:1167-1174
7. UrbaSG,OrringerMB,IanettonniM,etal.Concurrent cisplatin,paclitaxel, andradiotherapyaspreoperative treatment forpatients withlocoregionalesophagealcarcinoma.Cancer 2003;98:2177-2183.
8. LiQQ,LiuMZ,HuYH,etal.Definitiveconcomitantchemoradiotherapywithdocetaxeland cisplatininsquamous esophagealcarcinoma.DisEsophagus2010;23:253-259.
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食道癌放射治療線治療

放射治療的適應症:

(一) 第 II-III 期並可進行根治手術者: 手術前進行新輔助合併化學放射治療 (neoadjuvantCCRT)，或在手術後進行輔助性合併化學放射治療 (adjuvant CCRT)。

(二) 第 I-III 期無法進行根治手術者: 合併化學放射治療(CCRT)或單純治癒性放射治療(definitive curative radiotherapy alone)(拒絕或不適化療者)

(三) 第 IV 期: 針對轉移部位(如骨骼、腦等部位)或原發部位施行緩解性放射治療。

二、放射治療執行程序(procedures)：

(一) 電腦斷層模擬攝影(CT-based simulation)

1. 仰臥、双手置於頭頂，並以真空氣墊(vaccum pillow) or alpha cradle 固定姿勢
2. 以雷射光於病人腹部、身體兩側劃上等中心(isocenter)記號
3. 透過靜脈注射顯影劑，可加強判讀腫瘤侵犯之範圍，但如果病患腎功能差(creatinine>2.0 mg/dl)或其他禁忌症為例外。
4. 每 3-5 毫米擷取一張電腦斷層影像
5. 將影像傳送至電腦治療計劃系統(radiation treatment plan, RTP system)

（二） 描繪標靶體積 (contouring target volume)

1. 標靶體積(Gross Target Volume,GTV):應包含由 CT 影像及可判讀之主要腫瘤(primary tumor)及臨床上呈陽性之淋巴腺。

2. 臨床標靶體積(Clinical Target Volume, CTV): 為包含 GTV 可能侵犯之範圍，由 GTV 頭腳方向(cranio-caudal directions) 加上 3~5 公分、左右前後側加上 0.5~1.0 公分之三度空間之範圍。

3. 計畫標靶體(Planning Target Volume,PTV): CTV + 0.5-1 cm

（三） Organs At Risk (OAR):

1 脊索(Spinal cord)

(1) 圈選範圍：所有含 PTV 的橫切面(axial planes)影像圈選畫脊索，外加頭腳方向

要再加圈選至少 1 公分之脊索。另再組成範圍 5 毫米的 PRV。

(2) 劑量限制：最高劑量< 50 Gy。

2 肺(Lung)

(1) 圈選範圍：整個肺部(不包含 CTV)，分別圈選左、右及整個肺部。

(2) 劑量限制:整個肺部之平均劑量建議 <20 Gy、整個肺部之 V20Gy < 35%(20 Gy 劑量之體積，應低於肺總體積之 35%)，如肺功能較差之病患，整個肺部之 V20Gy < 30%。

3 肝臟(Liver)

(1) 圈選範圍：胸腔內之食道(不含 PTV)。

(2) 劑量限制：1/2 之體積應低於 35 Gy、2/2 之體積應低於 30 Gy。

4 腎臟(Kidney)

(1) 圈選範圍：分別圈選左、右可看到之腎臟。

(2) 劑量限制：1/3 之體積應低於 50 Gy、2/3 之體積應低於 32 Gy、所有體積應低於 23Gy。

5 心臟(Heart)

(1) 圈選範圍：影像中可圈選之心臟組織。

(2) 劑量限制：1/3 之體積應低於 60 Gy、2/3 之體積應低於 45 Gy、所有體積應低於 40 Gy。

（四） 劑量處方 (dose prescription)：

1. 手術前進行新輔助合併化學放射治療 (neoadjuvantCCRT)：每分次 1.8-2.0 格雷，每週五~六分次，五週總劑量為 45-50.4 格雷(1.8-2.0 fraction dose,5-6 fractions per week, total dose 45-50.4Gy over 5 weeks)
2. 手術後進行輔助性合併化學放射治療 (adjuvant CCRT)：每分次 1.8-2.0 格雷，每週五~六分次，五週總劑量為 45-50.4 格雷(1.8-2.0 fraction dose,5-6 fractions per week, total dose 45-50.4Gy over 5 weeks)，根治性病患可縮小範圍(GTV)續照至 50-66Gy
3. 合併化學放射治療(CCRT)或單純治癒性放射治療(definitive curative radiotherapy alone)：每分次 1.8-2.0 格雷，每週五~六分次，五週總劑量為 45-50.4 格雷(1.8-2.0 fraction dose,5 fractions per week, total dose 45-50.4Gy over 5 weeks)，根治性病患可縮小範圍(GTV)續照至 50-66Gy

（五） 體外放射治療技術 (external radiotherapy technique)：

1. 三維順形放射治療(3-Dimension Conformal Radiation Therapy, 3D-CRT)
2. 強度調控放射治療(Intensity Modulation Radiation Therapy, IMRT)
3. 影像導引放射治療(Image-guided Radiation Therapy, IGRT)

（六） 治療驗證(Treatment Verification)

1. 三度空間放射治療或強度調控放射治療：治療前及每周應由放射師拍攝正交之驗證片(orthogonal verification films)來驗證照野之中心點。

2. 影像導引放射治療(IGRT)：如放射治療設備備有影像導引功能，治療前及每周應由放射師拍攝電腦斷層影像或正交之驗證片確認治療範圍。

參考資料:

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PRIMARY TUMOR (T)	
TX	**Primary tumor cannot be assessed**
T0	**No evidence of primary tumor**
Tis	**High-grade dysplasia ***
T1	**Tumor invades lamina propria, muscularis mucosae, or submucosa**
T1a	**Tumor invades lamina propria or muscularis mucosae**
T1b	**Tumor invades submucosa**
T2	**Tumor invades muscularispropria**
T3	**Tumor invades adventitia**
T4	**Tumor invades adjacent structures**
T4a	**Resectable tumor invading pleura, pericardium, or diaphragm**
T4b	**Unresectable tumor invading other adjacent structures, such as aorta, vertebral body, trachea, etc.**
***High-grade dysplasia includes all non-invasive neoplastic epithelium that was formerly called carcinoma in situ, a diagnosis that is no longer used for columnar mucosae anywhere in the gastrointestinal tract.**	

REGIONAL LYMPH NODES (N)	
NX	**Regional lymph nodes cannot be assessed**
N0	**No regional lymph node metastasis**
N1	**Regional lymph node metastases involving 1 to 2 nodes**
N2	**Regional lymph node metastases involving 3 to 6 nodes**
N3	**Regional lymph node metastases involving 7 or more nodes**

DISTANT METASTASIS (M)	
M0	**No distant metastasis (no pathologic M0; use clinical M to complete stage group)**
M1	**Distant metastasis**

ANATOMIC STAGE • PROGNOSTIC GROUPS					
Squamous Cell Carcinoma					
GROUP	**T**	**N**	**M**	**Grade**	**Tumor Location****
0	**Tis(HGD)**	**N0**	**M0**	**1**	**Any**
IA	**T1**	**N0**	**M0**	**1,X**	**Any**
IB	**T1** **T2-3**	**N0** **N0**	**M0** **M0**	**2-3** **1,X**	**Any** **Lower,X**
IIA	**T2-3** **T2-3**	**N0** **N0**	**M0** **M0**	**1,X** **2-3**	**Upper,middle** **Lower,X**
IIB	**T2-3** **T1-2**	**N0** **N1**	**M0** **M0**	**2-3** **Any**	**Upper,middle** **Any**
IIIA	**T1-2** **T3** **T4a**	**N2** **N1** **N0**	**M0** **M0** **M0**	**Any** **Any** **Any**	**Any** **Any** **Any**
IIIB	**T3**	**N2**	**M0**	**Any**	**Any**
IIIC	**T4a** **T4b** **Any**	**N1-2** **Any** **N3**	**M0** **M0** **M0**	**Any** **Any** **Any**	**Any** **Any** **Any**
IV	**Any**	**Any**	**M1**	**Any**	**Any**