

# 食道癌診療指引

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參考資料：NCCN Guidelines Version

Esophageal and Esophagogastric Junction Cancers V1.2015

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☆：選項

EUS：Endoscopic ultrasound

EMR：Endoscopic mucosal resection

BSC：Best supportive care

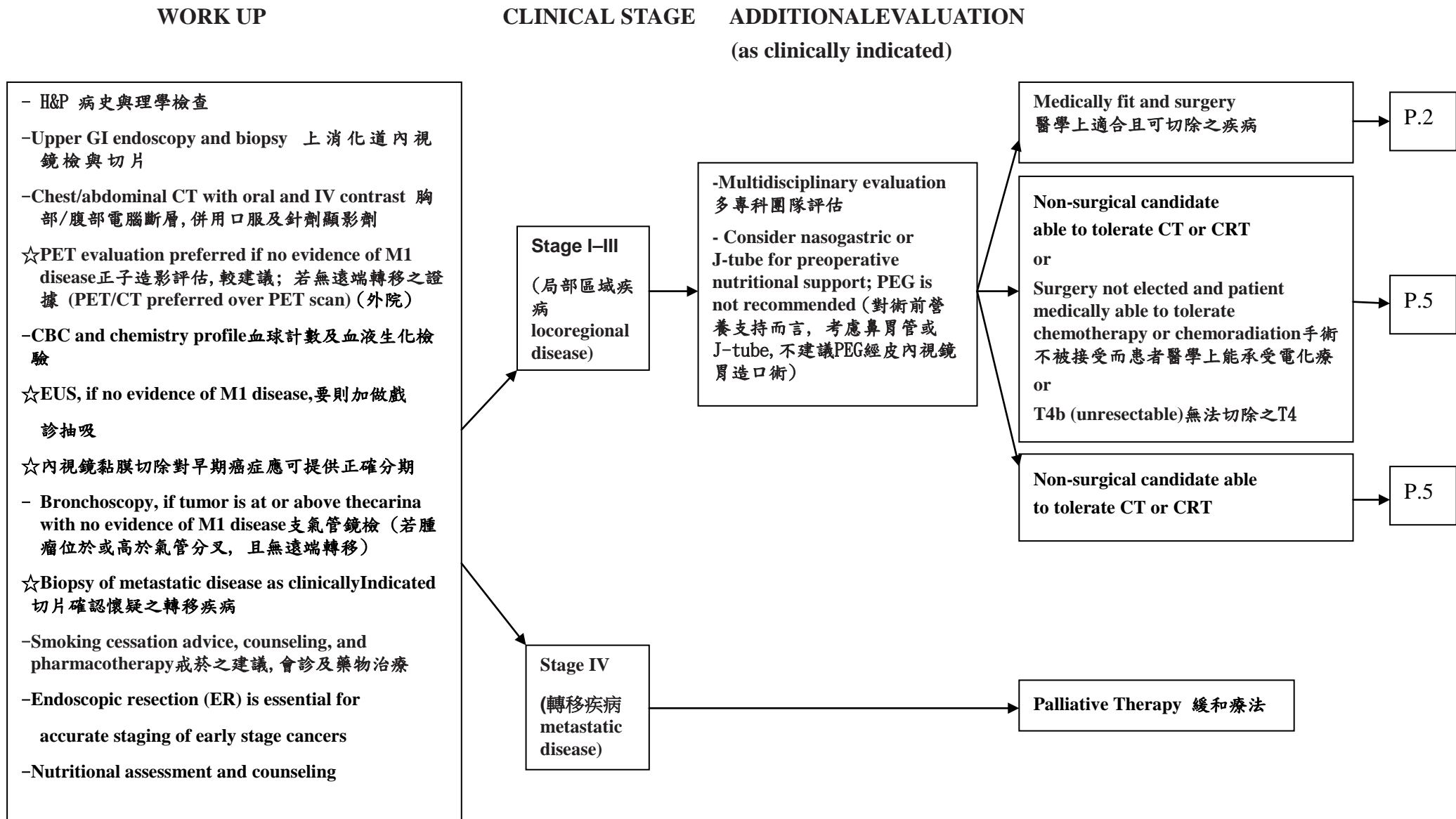
CCRT：Chemoradiation

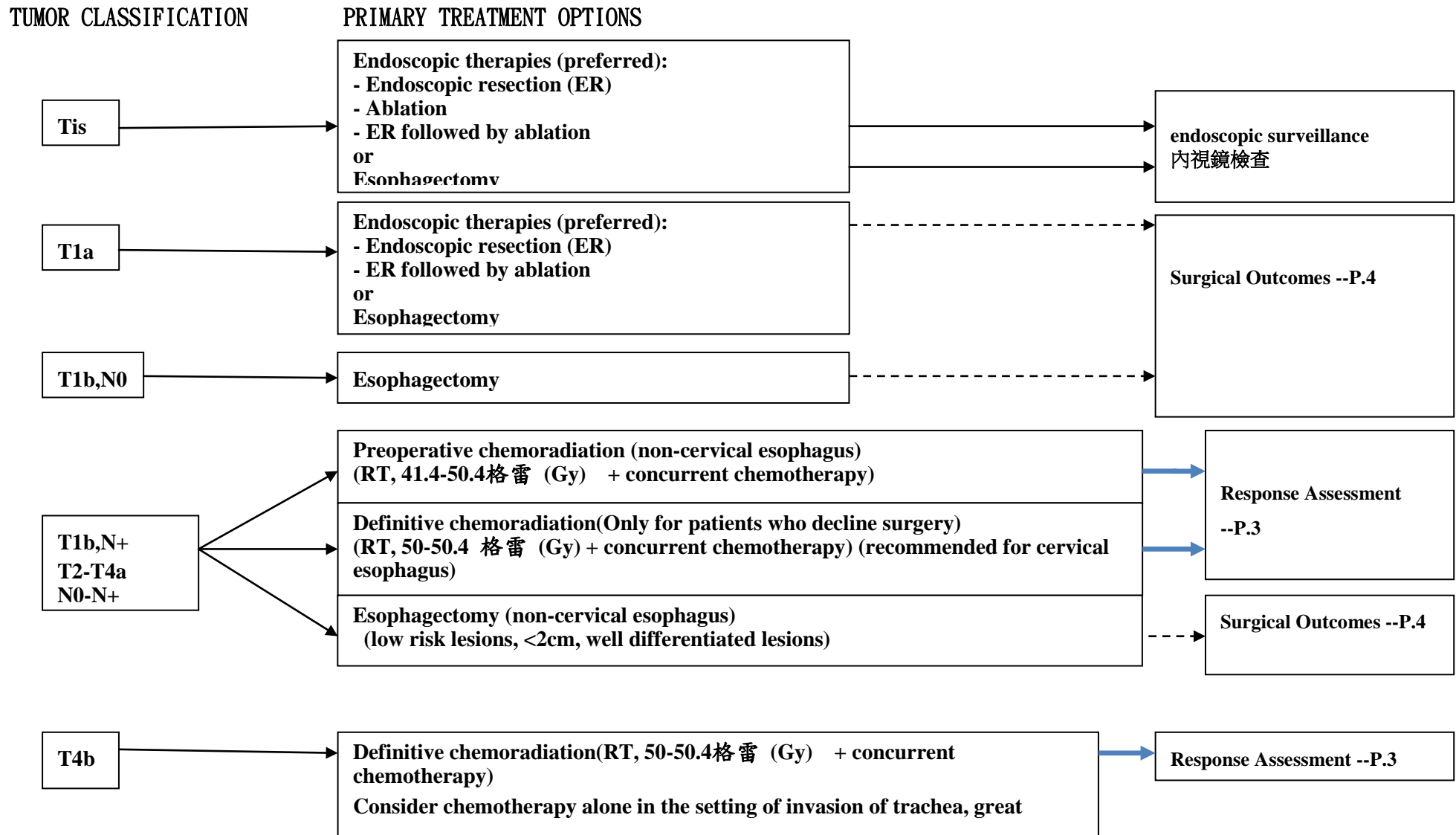
C/T：Chemotherapy

RT：Radiotherapy

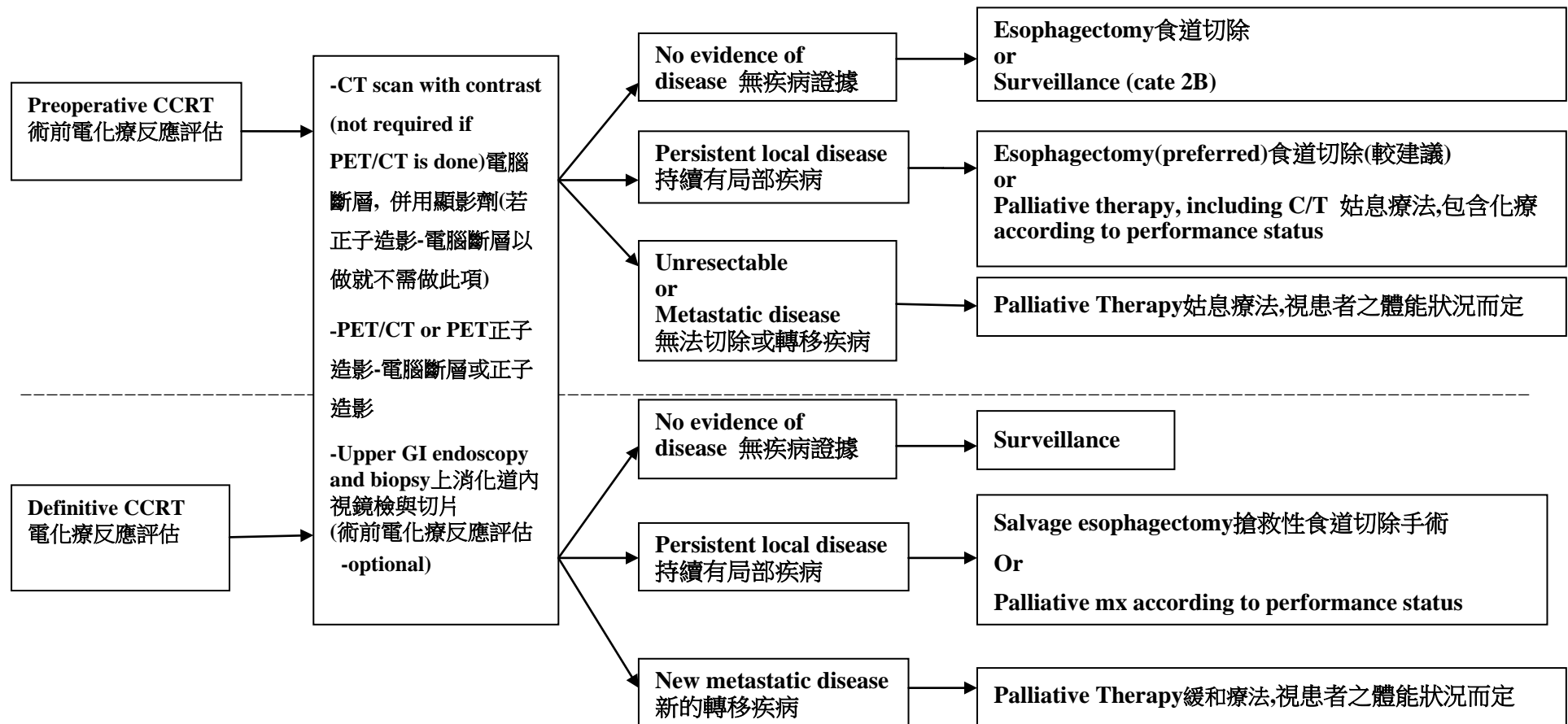
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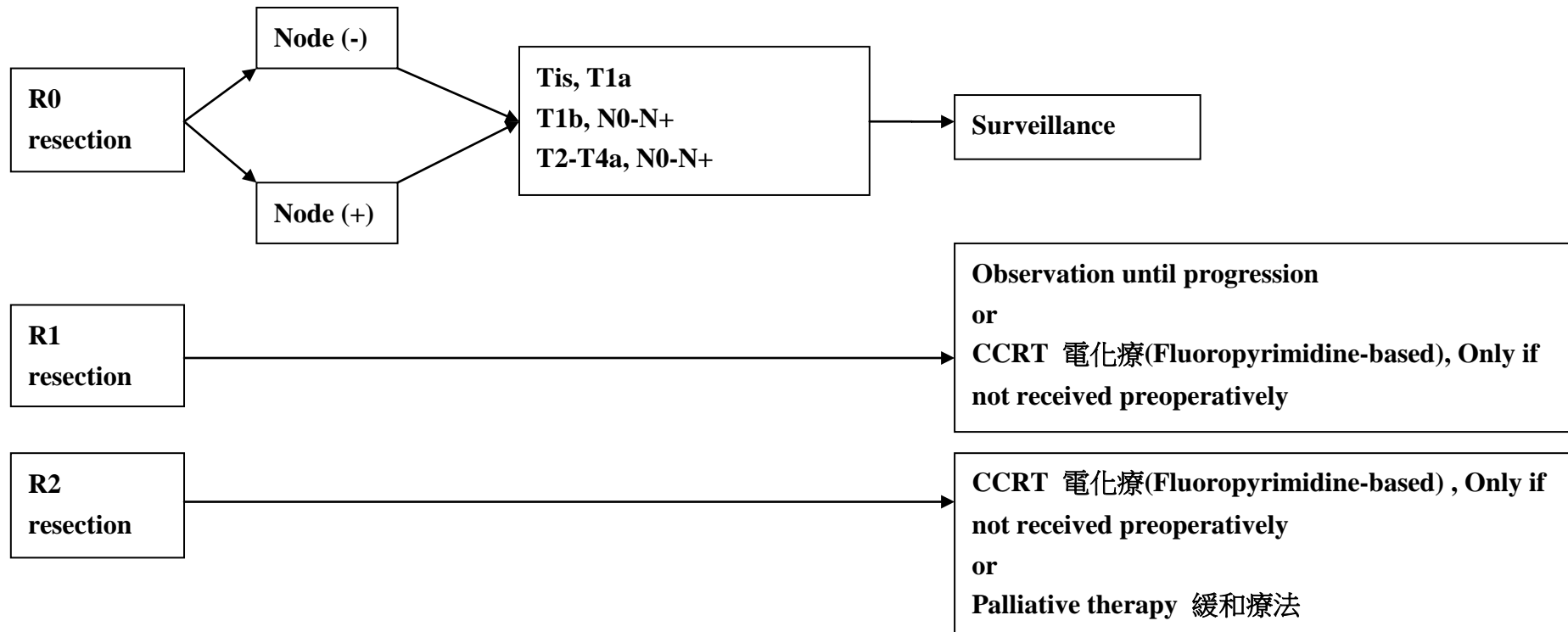




RESPONSEASSESSMENTOUTCOMEADJUVANT TREATMENT

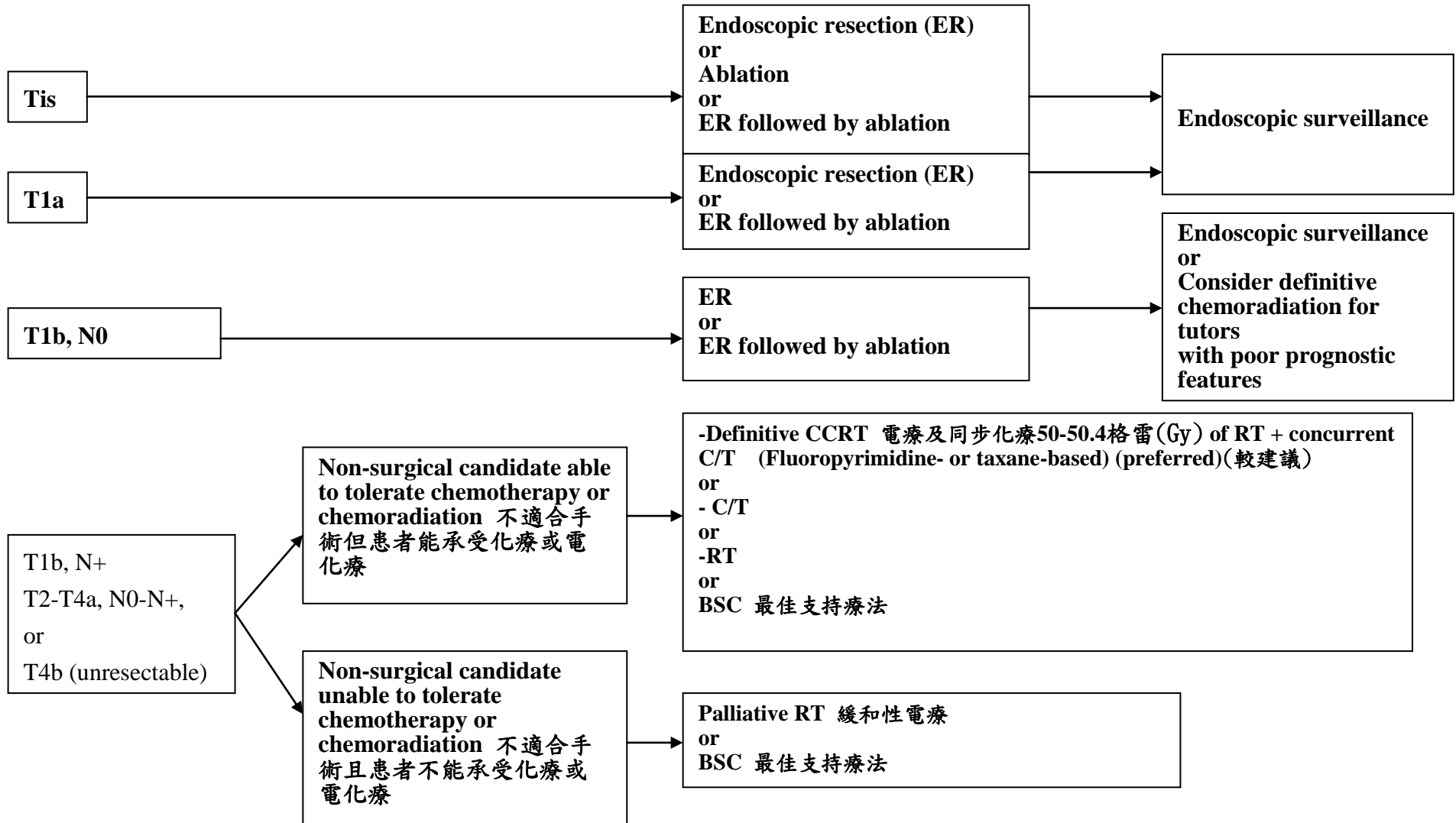


**SURGICAL OUTCOMES/CLINICAL      PATHOLOGIC FINDINGS      POSTOPERATIVE TREATMENT**  
(Patients Have Received Preoperative Chemoradiation or Chemotherapy)

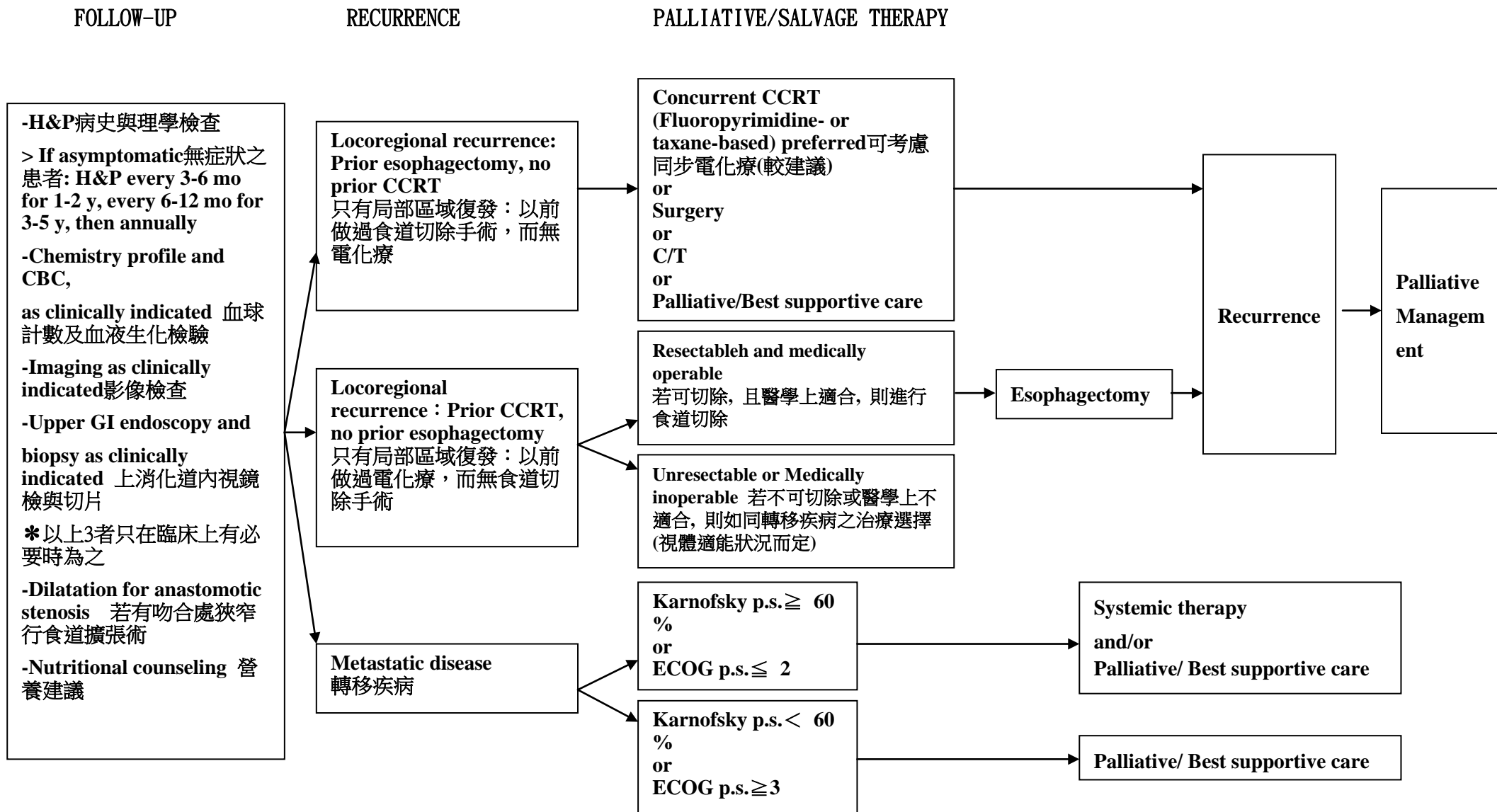


**R0 : No cancer at resection margins    R1 : Microscopic residual cancer    R2 : Macroscopic residual cancer or M1b**

PRIMARY TREATMENT FOR NON-SURGICAL CANDIDATE







## Chemotherapy Regimens

### Preoperative Chemoradiation

- **Cisplatin and fluoropyrimidine (5-FU or capecitabine)(常用處方)**  
Cisplatin 75-100 mg/m<sup>2</sup>IV on Days 1 and 29  
5-FU 750-1000 mg/m<sup>2</sup>IV continuous infusion  
over 24 hours daily on Days 1-4 and 29-32 35-Day cycle
- **Paclitaxel and carboplatin (可選擇但要自費)**  
Paclitaxel 50 mg/m<sup>2</sup>IV on Day 1  
CarboplatinAUC 2 IV on Day 1  
Weekly for 5 weeks
- **Cisplatin 30 mg/m<sup>2</sup>IV on Day 1 (可選擇但要自費)**  
Capecitabine 800 mg/m<sup>2</sup>PO BID on Days 1-5  
Weekly for 5 weeks

**Definitive Chemoradiation**

- **Cisplatin and fluoropyrimidine (5-FU or capecitabine) (常用處方)**  
Cisplatin 75-100 mg/m<sup>2</sup>IV on Day 1  
5-FU 750-1000 mg/m<sup>2</sup>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<sup>2</sup>IV on Day 1 (可選擇但要自費)**  
Capecitabine 800 mg/m<sup>2</sup>PO BID on Days 1-5  
Weekly for 5 weeks
  
- **Paclitaxel or docetaxel and cisplatin (可選擇但要自費)**  
Paclitaxel 60 mg/m<sup>2</sup>IV on Days 1, 8, 15, and 22  
Cisplatin 75 mg/m<sup>2</sup>IV on Day  
Given for 1 cycle
  
- **Docetaxel 60 mg/m<sup>2</sup>IV on Days 1 and 22 (可選擇但要自費)**  
Cisplatin 60-80 mg/m<sup>2</sup>IV on Days 1 and 22  
Given for 1 cycle

- **Docetaxel 20-30 mg/m<sup>2</sup> IV on Day 1 (可選擇但要自費)**  
**Cisplatin 20-30 mg/m<sup>2</sup> IV on Day 1**  
**Weekly for 5 weeks**

## References

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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 (neoadjuvant CCRT)，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、放射治療執行情序(procedures)：

(一) 電腦斷層模擬攝影(CT-based simulation)

1. 仰臥、雙手置於頭頂，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 格雷(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 格雷(Gy)、整個肺部之 V20 格雷(Gy) < 35% (20 格雷(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 V20 格雷 < 30%。

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### 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 格雷(Gy)、2/3 之體積應低於 30 格雷(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 格雷(Gy)、2/3 之體積應低於 32 格雷(Gy)、所有體積應低於 23 格雷(Gy)。

### 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 格雷(Gy)、2/3 之體積應低於 45 格雷(Gy)、所有體積應低於 40 格雷(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 (neoadjuvant CCRT) : 每分次 1.8-2.0 格雷(Gy), 每週五~六分次, 五週總劑量為 45-50.4 格雷(Gy) (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(Gy), 每週五~六分次, 五週總劑量為 45-50.4 格雷(Gy) (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 50-66 格雷(Gy)
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(Gy), 每週五~六分次, 五週總劑量為 45-50.4 格雷(Gy) (1.8-2.0 fraction dose, 5 fractions per week, total dose 45-50.4 格雷 over 5 weeks), 根治性病患可縮小範圍(GTV)續照至 50-70 格雷(Gy)

(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)

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(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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5. Target Volume Delineation and Field Setup: A Practical Guide for Conformal and Intensity-Modulated Radiation Therapy, Nancy Y. Lee & Jiade J. Lu, 2013

<b>PRIMARY TUMOR (T)</b>	
<b>TX</b>	<b>Primary tumor cannot be assessed</b>
<b>T0</b>	<b>No evidence of primary tumor</b>
<b>Tis</b>	<b>High-grade dysplasia *</b>
<b>T1</b>	<b>Tumor invades lamina propria, muscularis mucosae, or submucosa</b>
<b>T1a</b>	<b>Tumor invades lamina propria or muscularis mucosae</b>
<b>T1b</b>	<b>Tumor invades submucosa</b>
<b>T2</b>	<b>Tumor invades muscularis propria</b>
<b>T3</b>	<b>Tumor invades adventitia</b>
<b>T4</b>	<b>Tumor invades adjacent structures</b>
<b>T4a</b>	<b>Resectable tumor invading pleura, pericardium, or diaphragm</b>
<b>T4b</b>	<b>Unresectable tumor invading other adjacent structures, such as aorta, vertebral body, trachea, etc.</b>
<p><b>*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.</b></p>	

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

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

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