2016 AJCC TNM Practice Cases
(You Will Need an AJCC Staging Manual)

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AJCC
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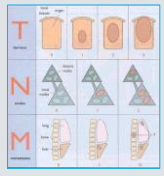
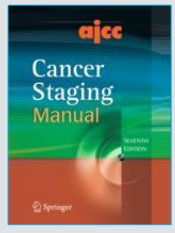
AJCC Cancer Staging Instruction for Registrars
https://cancerstaging.org/CSE/Registrar/





Staging Practice

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Case 1 – Case Vignette

3

- HISTORY: 57 year-old African-American female with bx-confirmed adenocarcinoma of the rectosigmoid.
- CT CHEST: few small (<1cm) nonspecific hilar lymph nodes noted in chest. Exam otherwise negative.
- COLONOSCOPY : Large tumor colon @ 15 cm biopsy: invasive poorly differentiated adenocarcinoma
- PATHOLOGY: Sigmoidectomy - 5.9 x 4.2 x 2.7 cm ulcerative lesion; invasive poorly differentiated colonic adenocarcinoma with extension into and through muscularis propria and focal transmural extension to serosal surface, margins free of tumor, 13 lymph nodes negative for metastatic adenocarcinoma; two discontinuous tumor deposits – present and positive for metastatic adenocarcinoma

Case 2 – Case Vignette

4

- HISTORY: 61 yr old white female, lifelong smoker, with multiple medical problems including recent adenoma on routine screening colonoscopy. Physical exam - negative.
- CT CHEST: Negative
- COLONOSCOPY : Transverse colon polyp @ 110cm – high grade dysplasia with focal well differentiated adenocarcinoma arising in an adenoma.

Case 3 – Case Vignette

5

- HISTORY: 64 year old Hispanic male admitted through the ER with severe abdominal pain.
- CT CHEST/ABD: extra-luminal gas right lower quadrant in area of cecum, suspect perforation of ascending colon
- PATHOLOGY Laparoscopic Ileocecectomy: poorly differentiated adenocarcinoma of cecum.; Maximum dimension: 6.3 cm, Microscopic tumor extension: penetrates serosal surface (visceral peritoneum) with perforation and direct invasion of distal ileum; LVI: present; One discontinuous extramural tumor deposit found in mesentery without nodal structure; Margins: free of tumor, three of nine lymph nodes positive for mets (3/9).

Case 4 – Case Vignette

6

- HISTORY: 49 year old white female admitted following recent colonoscopy showing malignant appearing mass in ascending colon. Family History: Father and brother had rectal cancer Physical Exam is essentially WNL.
- CT CHEST/ABDOMEN: no abnormalities noted
- COLONOSCOPY per history showed malignant appearing mass in proximal ascending colon – unknown if biopsy was taken to confirm malignancy.
- CEA 0.6 – WNL
- PATHOLOGY from Resection - Right hemicolectomy with appendix: Intermediate grade 2 neuroendocrine tumor (NET) of cecum (carcinoid tumor). Maximum dimension: 3.0 cm. Grossly the lesion invades through the muscularis propria into the underlying mesenteric adipose tissue. Microscopic tumor extension: invades through muscularis propria. Lymphovascular invasion: present (venous). Perineural invasion: not identified. Margins: free of tumor. One of twenty two lymph nodes positive for metastatic carcinoma (1/22).

Case 5 – Case Vignette

7

- HISTORY: 47 year old morbidly obese white male with chronic constipation and bright red blood in stool. Rectal exam positive for mass low in rectum with fixation.
- EUS: large mass fixed to rectal wall with evidence of invasion into perirectal fat and partial lumen obstruction, prominent node on ultrasound exam.
- RECTAL BX: poorly differentiated adenocarcinoma
- Treatment Summary: Patient was treated with pre-operative 5-FU with concurrent radiation therapy. Patient completed her short-course XRT but did not return for surgical resection and expired in home.

Case 6 – Case Vignette

8

- HISTORY: 70-year-old female with right pleural effusion in January. Thoracentesis with bloody pleural fluid. Cytology showed no tumor cells. Patient admitted with right pleural effusion with a pleural-based mass for biopsy.
- CT CHEST/ABD/PELVIS: nonspecific hilar and mediastinal lymph nodes. Soft tissue mass in RLL lung size 3.5 x 2.5cm. Extensive abnormal right pleural thickening with large right pleural effusion. Abdomen/Pelvis – neg
- PROCEDURE: Mini Thoracotomy with VATS wedge resection RLL lung.
- RLL LUNG WEDGE RESECTION: poorly differentiated adenocarcinoma typical of lung primary with extensive visceral pleural invasion. TTF1 and CK7 positive and CK20 negative. 3 hilar nodes negative.
- FINAL DX: Adenocarcinoma of lung, right lower lobe.

Case 7 – Case Vignette

9

- HISTORY: 58 yr old white male, smoker, with lung mass noted on CT. He has had repeated bouts of bronchopneumonia treated with antibiotics. He complains of shortness of breath, 15 pound weight loss, and mental status change. Admitted for workup and start of treatment.
- CT CHEST/ABD/PELVIS: Large mass obstructing right upper lobe lung measuring at least 6cm with large mediastinal mass 5cm x 6cm in size. Large right-sided pleural effusion noted. Multiple cysts noted in liver.
- MRI BRAIN: Diffuse 4th ventricle involvement with large cerebellar mass
- BRONCHOSCOPY WITH BIOPSY: right upper lobe lung tumor, biopsy with small cell neuroendocrine carcinoma. CK7 +, Chromogranin + with SY38 positive consistent with small cell carcinoma of lung origin.
- THORACENTESIS: pleural fluid + for malignant cells

Case 8 – Case Vignette

10

- HISTORY: 65 year old male admitted with chest pain, cough, hoarseness and partial vocal cord paralysis. History of 1ppd smoker x 50yrs
- CT CHEST: 7.5cm mass right main stem bronchus with supraclavicular node.
- CT-GUIDED CORE BX RIGHT LUNG TUMOR MASS: Poorly differentiated squamous cell carcinoma. p63 and CK5 positive, Napsin and TTF1 neg - c/w squamous cell carcinoma of lung origin. *(Positive IHC for p63 and CK5 supports the diagnosis of squamous cell carcinoma. Negative IHC for Napsin and TTF-1 argues against adenocarcinoma.)*
- ULTRASOUND-GUIDED CORE BX SUPRACLAVICULAR MASS: positive for metastatic squamous cell carcinoma of pulmonary origin.
- FINAL DX: Biopsy-proven unresectable squamous cell carcinoma of right lung with vocal cord paralysis and positive supraclavicular lymph node on FNA.

Case 9 – Case Vignette

11

- HISTORY: 55 yr old white female, non-smoker, with lung mass seen on routine chest x-ray. No clinical symptoms or complaints. Admitted for workup and surgical treatment for left upper lobe lung cancer.
- CT CHEST: 3cm tumor in left upper lobe lung no lymphadenopathy.
- FNA LEFT LUNG : non small cell carcinoma, favor adenocarcinoma
- VATS WEDGE RESECTION LUL LUNG WITH NODE SAMPLING: moderately differentiated adenocarcinoma 2.5 x 2.8cm in size, wedge resection, with no involvement of surgical margins. 3 hilar lymph nodes sampled, 1 node with micrometastasis noted on IHC.

Case 10 – Case Vignette

12

- HISTORY: 47-year-old female presents for suspicious mole removal left forearm.
- PUNCH BIOPSY SPECIMEN: Left dorsal forearm skin lesion - melanocytes invade beyond the papillary dermis to a maximal Breslow depth of 3.67 mm. Mild ulceration is present. One dermal mitosis is seen in one section. No microsatellitosis is identified.
- FINAL DIAGNOSIS:
- - Malignant Melanoma
- - Breslow Depth: 3.67mm
- - Ulceration: Mild ulceration is present on the skin surface
- - Mitotic Index: 1 per square millimeter
- - The lesion extends to the peripheral edge of the biopsy.
- - Excision with appropriate margins is necessary.
- - Sentinel lymph node biopsy is warranted.
- WIDE EXCISION SPECIMEN: Excision of malignant melanoma on left forearm.
- Skin, left forearm, excision:
- - Residual malignant melanoma
- - Surgical margins negative for melanoma.
- COMMENT: The residual malignant melanoma is all in-situ.

Case 11 – Case Vignette

13

- 28-year-old Hispanic female with enlarged thyroid gland on physical exam. Ultrasound and PET scan showed a lesion in the right thyroid gland. A fine needle aspirate showed papillary carcinoma of the right thyroid. PET/CT showed a node behind the clavicle on the right and a 7 mm node along the hyoid on the right that appeared to be positive. She is admitted for total thyroidectomy and right modified radical neck dissection. IMPRESSION: Papillary carcinoma of the thyroid with probable metastasis to right neck.
- FNA RIGHT THYROID : Papillary Carcinoma of the Thyroid.
- SURGERY: total thyroidectomy and right modified radical neck dissection
- EXCISION, RIGHT LOBE OF THYROID – Multifocal areas of papillary carcinoma of the thyroid, largest focus 1.6cm in maximum dimension. No definite areas of extension into the periglandular soft tissue is identified.
- RIGHT PARATRACHEAL LYMPH NODE DISSECTION: Metastatic papillary thyroid carcinoma identified in six (6) of eight (8) lymph nodes.
- EXCISION, LEFT LOBE OF THE THYROID: Two foci of papillary thyroid carcinoma identified, 0.3cm and 0.7cm in maximum dimension, without extension into the periglandular soft tissue.

Case 12 – Case Vignette

14

- 65-year old female with right-sided dominant thyroid nodule. Recent PET/CT shows suspicious thyroid nodule as well as suspicious metastatic lesions in lung and bones.
- PET/CT; intense focal increased FDG uptake in the right lung apex compatible with FDG Avid malignant process. Increased FDG uptake within the right lobe of the thyroid gland measuring 2.8cm suspicious for FDG AVID malignancy. T3 and T1 bone lesion suspicious for bony metastatic lesions
- PATH: TOTAL THYROIDECTOMY: Anaplastic thyroid carcinoma, 4.0cm in general dimension, unifocal with extensive extrathyroidal extension, margin positive; LVI present, 0/5 lymph nodes with carcinoma. PAX-8 (+), TTF-1(+) AND P53(+)
- 66-year old female who was diagnosed with metastatic anaplastic carcinoma of the thyroid to the bone and lung. She is status post total thyroidectomy followed by chemotherapy and radiation to the H&N and bone. Latest images showing progression of disease in lungs.
- IMRT to the thyroid and neck delivering 6600 CGY in 33 fractions/42 days
- IMRT to the T9 spine delivering 3500 CGY in 10 fractions/14 days.
- 05/25/16. weekly Carboplatin/Taxol X 7 weeks
- 04/19/16. Synthroid.112 MCG

Case 13 – Case Vignette

15

- 75-year-old male with CT scan showing a mass centered on the right lobe of the thyroid extending into the superior mediastinum, multiple lung nodules, and mediastinal and left hilar adenopathy. Referred for FNA biopsy of the mass in the right thyroid.
- RIGHT THYROID MASS, FNA: Non-Hodgkin large cell lymphoma
- PERIPHERAL BLOOD SMEAR: Normal RBC and WBC morphology
- BONE MARROW, ASPIRATION – Negative for malignant lymphoma
- PET IMG W CT SKULL TO THIGH - IMPRESSION:
  - The right-sided neck mass is intensely hypermetabolic with SUV of greater than 13.
  - There is a solitary hypermetabolic node anterior to the left hilum with SUV of 4.
  - No hypermetabolism is seen in the lung nodules.
  - Two skeletal areas of hypermetabolism seen; one in right ilium and the other in the body of T11.
- FNA vertebral T-11: Atypical lymphoid infiltrate consistent with large B-cell lymphoma
- MEDICAL ONCOLOGY: Stage IV diffuse large B cell lymphoma involving bone and thyroid. Bulky thyroid mass 11 cm. IPI score 4. TREATMENT PLAN: R-CHOP.

Case 14 - Case Vignette

16

- 66 year old white female with post menopausal bleeding
- CT Abdomen: uterus enlarged with large amount of fluid in endometrial cavity. Mass 4.4cm. No enlarged lymph nodes.
- TAH/BSO: high grade carcinoma, favor endometrial serous. 5cm size, lower uterine segment and cervix both positive, left ovary positive, favor endometrial serous carcinoma, 1.3cm omentum negative. 29 nodes negative, myometrial invasion 1.2cm myometrial thickness 1.6cm (75%) lymph vascular invasion negative. No microsatellite instability
- CK7, Vimentin, P53 - All (+). ER/PR (-), WT-1 (-), P16 (-), CEA (-), CA-125 (+) at 78. MLH1, PMS2, MSH2, MSH6 - All (+).
- Treatment Planed: Taxol/Carboplatin

Case 15 – Case Vignette

17

- HISTORY: 65 year old black female admitted for biopsy and resection of 2cm mass noted on mammography. Palpable mass in UOQ right breast, right axilla WNL.
- CT CHEST: no abnormalities noted
- MAMMOGRAPHY: 2.5cm stellate mass in right UOQ, suspicious for malignancy. Recommend biopsy.
- Excision: Right UOQ Breast biopsy – infiltrating duct carcinoma, 2.1cm in greatest dimension, Nottingham Grade 2. ER/PR neg, HER2 +
- Wide Excision and SNL Biopsy: No residual carcinoma. 2 sentinel lymph nodes negative for carcinoma 0/2. IHC stain for Cytokeratin is positive.

Case 16 – Case Vignette

18

- HISTORY: 62 year old Asian female admitted for biopsy of 1cm abnormality noted on mammography. No mass felt in the left breast, left axilla WNL.
- CT CHEST: no abnormalities noted
- MAMMOGRAPHY: 1cm abnormality in left UOQ, possible malignancy. Recommend biopsy.
- Excision: Left UOQ Breast biopsy – low grade DCIS (solid, cribriform and papillary subtypes) 6mm area of involvement . ER/PR pos, HER2 not stated
- Wide Excision and SNL Biopsy: No residual carcinoma. 1 sentinel lymph nodes negative for carcinoma 0/1. IHC stain for Cytokeratin is negative.

Case 17 – Case Vignette

19

- 61 year old white female with mammo showing suspicious tumor in lateral aspect of right periareolar area. Physical Exam shows a palpable mass in periareolar region right breast @ 9:00 approximately 2cm in size, close to skin with extension to retroareolar area and overlying areola. Mass is not fixed to chest wall but may be contiguous to subcutaneous tissue. No palpable lymphadenopathy.
- MAMMO – mass right breast @ 9:00, suspicious lymph node with thickening in right axilla
- MRI Bilateral Breast – left breast neg. right breast in retroareolar area shows enhancing mass measuring 2.3cm. 1.4cm right axillary lymph node corresponds to recent biopsy of lymph node.
- CT ABD/PELVIS neg and CXR neg
- Right Breast @ 9:00, subareolar infiltrating ductal carcinoma Nottingham Grade 3/3. Core biopsy axillary lymph node – positive for metastatic ductal carcinoma.
- ER POS. 40%/PR NEG. 0%/HER-2/NEU IHC NEG. 1+/KI-67 high proliferative index 95%
- ONCOTYPE DX score 64/ER 5.5 NEG./<3.2 NEG./HER-2/NEU IHC <7.6 NEG.
- Right Breast Wide Excision with right axillary sentinel node biopsy – No residual tumor after 5 cycles of Adria/Cytoxan + Taxol. 1 sentinel node negative after neoadjuvant chemotherapy

Case 18 – Case Vignette

20

- HISTORY: 49 yr old white female, non-smoker, with large central breast mass on right and multiple suspicious large nodes in right axilla. Patient complains of redness, skin thickening and edema over past 6-12 months, still evident. Recommend pre-surgical treatment.
- CT CHEST: Negative
- BONE SCAN: Abnormal uptake L4-L5 concerning for metastatic disease
- PLAIN FILM XRAY L-SPINE: osseous mets L4-L5
- FNA BREAST MASS: adenocarcinoma
- RIGHT MODIFIED RADICAL MASTECTOMY: poorly differentiated infiltrating duct carcinoma. Tumor extends to pectoralis muscle and deep margin with involvement of dermal lymphatics. 10/15 axillary lymph nodes involved with largest node measuring 2.8cm in size.
- Biopsy L4 – metastatic adenocarcinoma c/w breast primary
- ER/PR +, HER2 –
- Patient refused pre-operative therapy – mastectomy only

Case 19 – Case Vignette

21

- HISTORY: 57 year-old Hispanic female with 2.5cm mass at 10:00 in right breast and prominent axillary node noted on screening mammography and on PE.
- CT CHEST: few small (<1cm) nonspecific hilar lymph nodes noted in chest. Exam otherwise negative.
- PROCEDURE: Lumpectomy, right breast with core biopsy of sentinel axillary lymph nodes (2) – Level I
- PATHOLOGY: Moderately differentiated infiltrating duct carcinoma with extensive associated DCIS, high nuclear grade; cribriform, papillary and solid types. Invasive component 1.5cm in greatest linear dimension, Nottingham Grade 2 (3+2+1=6), core biopsies (3) of suspected axillary lymph node showing tumor present in all core fragments (3/3).

Case 20 – Case Vignette

22

- 59 year old white male with elevated PSA – biopsy-proven adenocarcinoma
- MRI Prostate – 2cm area of tumor involving right mid gland and apex. Tumor abuts posterior wall without definitive extracapsular extension. No pelvic lymphadenopathy noted. Bone Scan is negative.
- PSA=13.5
- TRUS BX=Adenocarcinoma Gleason 3 + 4 = 7. No perineural invasion.
- Robot-Assisted Radical Prostatectomy with Bilateral Pelvic LN Dissection.
- Radical Prostatectomy – 1.7cm dominant focus in right posterior peripheral zone from apex to mid gland. 20% of gland involved. Gleason 3 + 4 = 7. Tumor extends focally a fraction of a millimeter past the prostatic capsule resection margins. All final margins negative. Perineural invasion is identified in the specimen. 6 pelvic lymph nodes negative for metastatic adenocarcinoma.

Case 21 – Case Vignette

23

- HISTORY: 65 year old black male admitted with intermittent microscopic hematuria . History of prostate cancer. History of 1ppd smoker x 45yrs.
- CT CHEST: no abnormalities noted
- CT ABDOMEN: negative
- CYSTOSCOPY: 2 papillary projections identified, one along the right lateral wall, the other in the trigone area of the bladder. TURBT was performed.
- PATHOLOGY: Bladder biopsy (TURBT) – low grade papillary urothelial carcinoma (no mention of invasion)
- FINAL DX: Papillary urothelial carcinoma of bladder, low grade. Repeat cystoscopy in 3 months.

Case 22 – Case Vignette

24

- HISTORY: 77 year-old female with painless hematuria and clotting. TURBT PTA indicated multiple high grade urothelial carcinomas largest showing muscle invasion to at least the T2 level. Admitted for radical cystectomy following 4 cycles neoadjuvant chemotherapy (gemcitabine, cisplatin)
- PRE-OP CT CHEST/ABD/PELVIS: few small (<1cm) nonspecific hilar lymph nodes noted in chest. Abdomen and pelvis – 3.2cm lesion in right posterior bladder wall highly suspicious for bladder cancer. 2.5cm right obturator node suspicious for metastatic carcinoma. Exam otherwise negative.
- PROCEDURE: Radical cystectomy with TAH/BSO and bilateral pelvic lymph node dissection, ileal conduit diversion
- PATHOLOGY: High grade (grade 3 of 3) urothelial carcinoma with squamous differentiation. PSA/PAP negative, CK7+, CK20+, 34betaE12+. Main tumor mass invades lamina propria deep into muscularis propria. Bilateral obturator and iliac nodes all negative for mets (0/11)
- FINAL DX: High grade urothelial carcinoma of bladder s/p neoadjuvant chemotherapy. Radical cystectomy with ileal conduit this admission.

Case 23 – Case Vignette

25

- HISTORY: 61 yr old man, lifelong smoker, with frequent and urgent urinary symptoms and microscopic hematuria noted on routine exam.
- CT ABDOMEN: Negative
- CT CHEST: Negative
- CYSTOSCOPY: Flat urothelial carcinoma diffuse involvement of bladder - multiple biopsies with fulguration and administration Intravesical BCG
- PATHOLOGY: flat urothelial carcinoma, high grade, diffuse - Tis
- TREATMENT: TURBT with Intravesical BCG (now and for next 6 weeks)

Case 24 – Case Vignette

26

- HISTORY: 55 yr old white male, non-smoker, with elevated PSA and recurring prostatitis with minimal response to multiple course of antibiotics. DRE shows enlarged prostate with firm nodule in left lateral lobe of prostate. No other clinical symptoms or complaints. Admitted for treatment evaluation.
- PSA: 10.3 ng/mL
- CT CHEST: Negative
- BONE SCAN: Abnormal uptake L4-L5 concerning for metastatic disease
- PLAIN FILM XRAY L-SPINE: no evidence for osseous mets
- TRUS-GUIDED BX PROSTATE: adenocarcinoma, Gleason 4+4=8, 9 of 12 cores positive
- RADICAL RETROPUBIC PROSTATECTOMY WITH LYMPH NODE SAMPLING: moderately differentiated adenocarcinoma Gleason 4+4=8 with microscopic involvement of bladder neck. Negative surgical resection margins. 3 inguinal lymph nodes sampled, all negative

Case 25 – Case Vignette

27

- HISTORY: 2 year old white male child with abdominal distention, decreased bowel sounds and abdominal pain of several weeks duration.
- Ultrasound Abdomen – large heterogeneous 21cm x 9.6cm space occupying lesion of uncertain origin.
- CT Abdomen – large intra-abdominal space occupying lesion w/mass effect
- CT Chest – no metastatic disease in the chest noted
- Whole Body Bone Scan – negative for metastatic disease
- Tumor Biopsy and Biopsy of Omental Implant – high-grade embryonal rhabdomyosarcoma
- Plan: vincristine, dactinomycin, mesna, cyclophosphamide plus irinotecan

Questions

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