All Talks need clear Objectives
Overview and Objectives

- Overarching: Try to focus on (a) what is relevant for surgeons and (b) what is new
  1. Underlying anatomy/histology (not new)
  2. Staging Work-up (a little new)
  3. Treatment
     - Early: T1-T2: A little bit of everything?
     - Advanced: T4 or N2/3: Radiation evolving
  4. Follow-up guidelines
Background
Anatomy/Histology
Histology

1. Mucosa lined Anal Canal
   - Begins at junction of puborectalis portion of levator ani and the external anal sphincter
   - Ends at Anal verge
   - Divided by the dentate line (transition from glandular or columnar, to squamous mucosa)

2. Epidermis lined anal margin
   - This begins at introitus of the anal orifice
   - Transition from squamous mucosa to epidermis lined peri-anal skin
Terminology

- **Adenocarcinomas** - glandular elements in the anal tract/low rectum. Treated like rectal cancer (although LN drainage may be different)

- **Anal cancers** - tumors that develop from the mucosa (SCC, Basaloid, Nonkeratinized above dentate, keratinizing below dentate)

- **Perianal (SKIN) cancers** - tumors that are distal to squamous mucocutaneous junction (e.g. hair)
Staging
Where are the risks?
Anal Cancer Staging: T stage

- T1  <2 cm
- T2  2-5 cm
- T3  >5 cm
- T4  Invades adjacent organ
Anal Cancer Nodal staging

- **N0**  No nodal mets
- **N1**  Perirectal Lymphnodes
- **N2**  Unilateral internal iliac or inguinal lymphnodes
- **N3**  Perirectal and iliac/inguinal OR Bilateral iliac/inguinal
Patterns of Recurrence

Posterior-anterior field

Lateral field

IJROBP Volume 78, Issue 4, 15, p.1064-72
Prognostic groups - Staging

- I  T1N0
- II  T2-T3N0
- IIIA  T1-3N1 or T4N0
- IIIB  T4N1 or N2 or N3 disease
- IV  M1

5 yr overall survival going from:
- I  85+%   II  70-85%
- IIIA  50-60+%  IIIB  40-50%
Work Up

1. Hx – Px
2. CTA/P (+/- MRI)
3. Chest imaging
4. **PET scan** (changes RT 13% of time*)

Other:
- Nodal biopsy
- Trans-rectal U/S (N1 staging)

The doctor’s on strike, so I had his stitches done by the vet’
One slide about an Anal Cancer Trial

- UK consortium
  - (Lancet 1996; 348: 1049–54)
- Eligibility T1-T4 (any N) – no mets
- Randomly assigned 585 patients
- RT alone 45 Gy + 15 Gy boost
- Same RT with infusional 5FU and Mitomycin C
- Chemo reduced LOCAL FAILURE and Cause specific mortality
Trials are good for those in the middle
Middle of the road tumors: T3 or N1 tumors

- These guys are the bulk of patients we see
- They were the bulk of the trial
- They get treated based on that (and other) Randomized trial evidence
- Nothing new here
  - Chemotherapy is 5FU and Mitomycin C
  - Radiation is anywhere from 50-60 Gy
Early Anal Cancers
Treatment in Evolution
These patients seem to present in a variety of ways:
- “Regular” Bleeding anal lesions
- Hemorrhoids
- Skin tags
- Warts
- SCC of Anal canal may or may not have been the top of the differential
T1-T2 after local resection

- Bulk of tumor should be removed (R1 or at most 1-2 cm of tumor remaining)
- Low radiation dose (30 Gy) and only 1 cycle of chemo
  * (Half the radiation and half the chemo)
- Institutions have been giving varying volumes of radiation
- I would radiate the inguinal and low rectal nodes as well as the primary (little side-effects vs. risk of recurrence)
Radiation Volumes – Low dose
What to do with T4/N2-3 Tumors?

- Various places do various things
  - Induction chemo has NOT worked (RCT)
  - More radiation?
    - Higher doses
    - Boost the primary site
    - Brachytherapy

- No good (randomized) evidence to do anything different than standard
- But, only at most 50% with local recurrence are salvagable
Patterns of Recurrence

IJROBP Volume 78, Issue 4, 15, p.1064-72
This volume is not tolerated to a high dose
IMRT – Intensity Modulated Radiation Therapy
Local Control is better with more conformal radiation

Survival may also be better.
5 yr Outcomes worse with treatment breaks:

- Continuous course 69.5%
- Split course 56.1%
- P=0.001

Data from Dr. John Hay
Post Treatment Recommendations (NCCN)

- Hx and Px
- DRE
- Inguinal exam
- Anoscopy
- Yearly CT chest/abdo/pelvis for those with locally advanced disease (look for mets)

* We can salvage local recurrence with APR
* ? Benefit of finding a distal recurrence?
Summary

1. Work Up: PET scanning should be added to the work-up algorithm
2. T1-T2 Tumors: Evolving role for local resection and low dose chemo and XRT. Especially important for those that may not tolerate higher doses
3. T3 and N+: Radiation treatments are evolving aiming to spare normal structures and increase dose to tumors
4. Need to follow to detect early local recurrence.
   * Utility of detection of early metastatic disease?
"I only got up for a drink of water, and a queue's formed next to my bed."