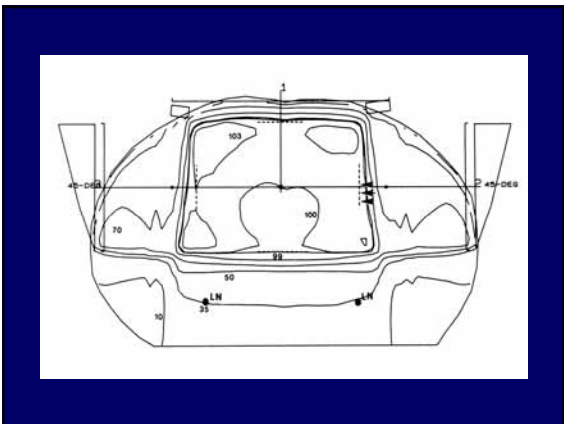


New Radiation Techniques in GI Cancer

Bruce Minsky

Anal Cancer: Conventional RT

A) PA Photon Field B) Opposed Lateral Photon Fields
C) Inguinal Electron Fields



Conventional 3- Field RT

IMRT

Anal Cancer- IMRT

- 53 pts. (8 HIV+) 33: T1-2, 20: T3-4, 17 N+
- 92% 5-FU/MMC
- Median 51.5 Gy
- 18 Month median f/u
- 42% treatment breaks

	Acute Toxicity (%)		Outcome (%)	
	Gr 3	Gr 4	Local Cont	Surv
Skin	38	0		
Heme	19	40		
T1-2			90-100	95-100
T3-4			53-88	86-90

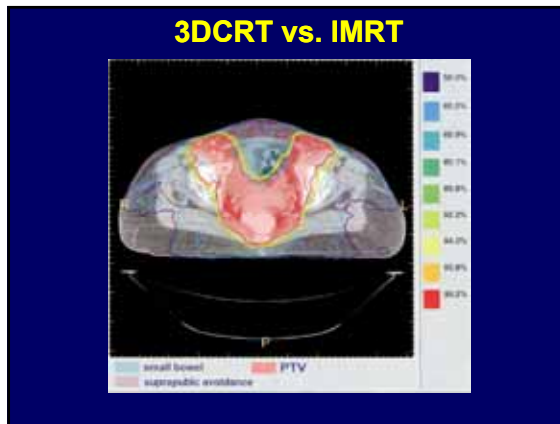
Salama et al JCO 2007

Anal Cancer 3-D vs. IMRT: Toxicity and LC

- 66 pts
- 54-59 Gy + 5-FU/MMC

	<u>3-D</u>	<u>IMRT</u>	<u>P</u>
# Pts	40	26	
% Toxicity			
- Gr 3 GI	3	4	
- Gr 3 skin	19	23	
- Gr 3+ heme	18	42	0.03
% 1-yr LF/residual	15	29	

Vuong et al Proc ASCO 2008



3DCRT vs. IMRT

- **IMRT Constraints**
 - **Bowel:** 10-20% receive >20-30 Gy, max 50 Gy
 - **Bladder:** 10-20% receive >30 Gy, max 45 Gy
 - **Posterior Block:** 20-40% receive >18-25 Gy, max 50 Gy
 - **Genitalia:** 50-60% receive >40 Gy, max 50 Gy
- **IMRT Optimization**
 - <1% of PTV receiving <93% of prescribed dose
 - <2-7% of PTV receiving <100% of prescribed dose
 - <10-20% of PTV receiving >110% of prescribed dose
 - <1% of PTV receiving >115% of prescribed dose

RTOG 0529 - Anal

<p>Eligibility</p> <ul style="list-style-type: none"> - SCC Anal canal - T2-4 N0-3 - N = 59 pts 	<p style="font-size: x-small; letter-spacing: 0.5em;">T R E A T M E N T</p>	<p>Design:</p> <p style="font-size: x-small;">50.4-54 Gy DP-IMRT + CC 5FU/MMC</p>	<p style="font-size: x-small; letter-spacing: 0.5em;">R E S P O N S E</p>	<p>Complete Remission</p> <p style="text-align: center;">vs.</p> <p>Persistent Disease</p> <p style="text-align: center; font-size: x-small;">8 wks</p>
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- **Endpoints**
 - **Primary:** Decreased Gr ≥2 GI & GU toxicity by ≥ 15% of rate in RTOG 9811 arm with 5FU/MMC (CTCAE v3.0)
 - **Secondary:** RT reproducibility, adverse events, clinical CR, local-regional failure, colostomy failure, colostomy free survival, disease free survival, overall survival