New NCCN Guidelines® for Vulvar Cancer

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National Comprehensive Cancer Network®

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Vulvar Cancer (Squamous Cell Carcinoma)

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Vulvar Cancer

Objectives:

1) Overview of vulvar carcinoma and FIGO staging.
2) Understand the application of surgery and sentinel lymph node evaluation.
3) Understand the use of radiation and/or chemo therapy in the treatment of vulvar carcinoma.

Vulvar Cancer

2016

5,950 | **Cases**

1,110 | **Deaths**

Majority squamous histology (90%)
HPV-dependent & HPV-independent pathways

Carcinoma in Situ (CIS)
small, thick lesions should be excised

Siegel et al. 2016. CA Cancer J Clin, 66:7-30

Vulvar Cancer

- 1912 – Radical vulvectomy with bilateral regional lymph nodes was described as the standard approach by Basset. The tenets of en bloc resection was performed only on cadavers.
- Dr. S. Way demonstrated improved survival, international adoption of radical surgery.
- Little changed until late 1970's.
- Survival predominately dependent on node status.

Survival
Negative Lymph Nodes – 70 to 80%
Positive Lymph Nodes – 30 to 40%

Basset. *Rev Chir (Paris)* 1912;46:546-552
Way. *Am J Obstet Gynecol* 1960;79:692-697
Greer, Berek. "Evolution of Primary Treatment of Invasive Squamous Cell Carcinoma of the Vulva", 1991.

Vulvar Cancer

Starting in the 1980's – modifications of treatment to reduce morbidity:

- Groin breakdown
- Leg edema
- Sexual function
- Organ preservation

Goal: Improved quality of life.

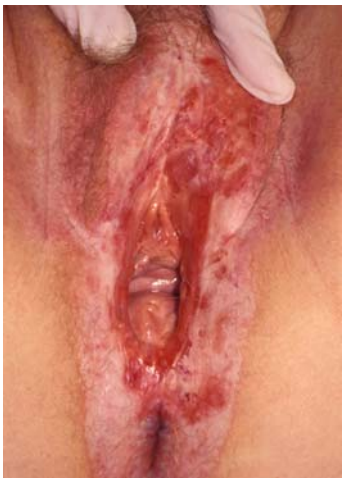
Vulvar Cancer

Modifications

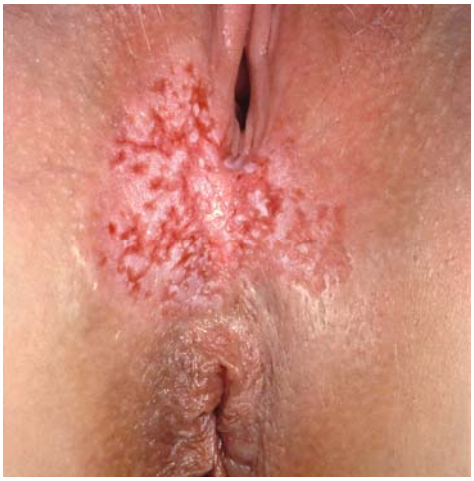
- Regional Lymph Node Management – unilateral cancers
- Radical Local Excision
- Separate Groin Incision
- Lymphatic Mapping
- Radiation
- Chemotherapy
- Exenteration

Punch Biopsy of Vulva

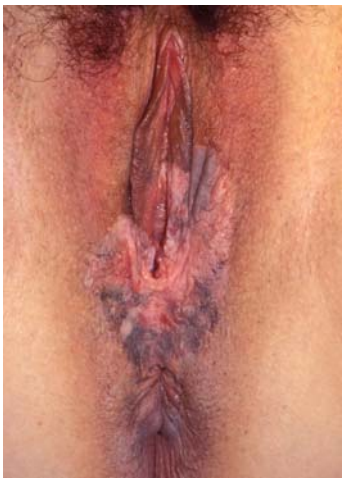
Vulvar Dystrophy



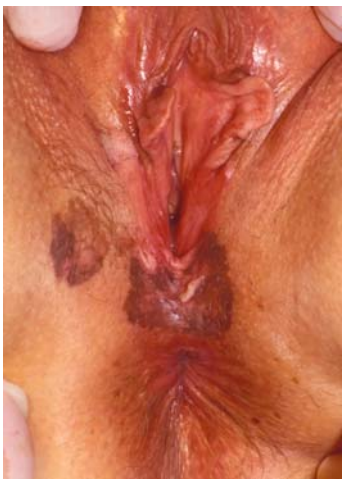
Paget's Disease of Vulva



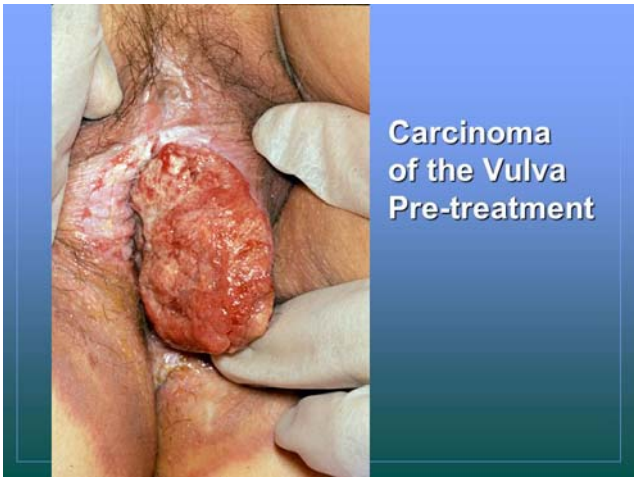
Vulvar Carcinoma in situ



Vulva Carcinoma in situ



Vulvar Cancer



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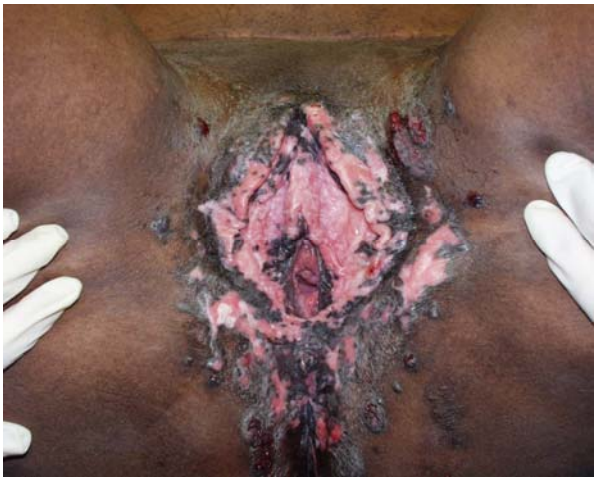
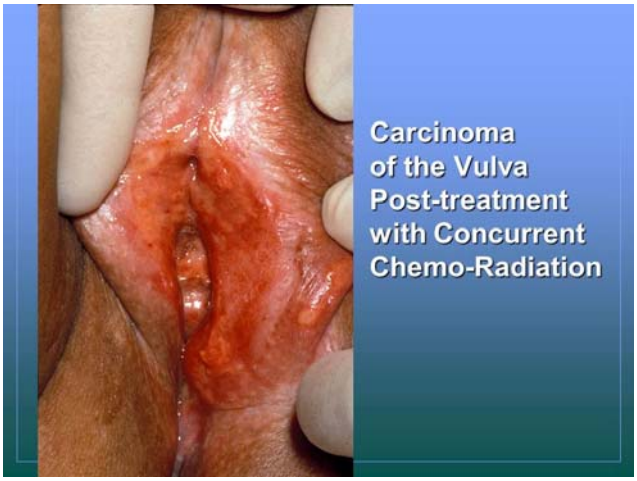
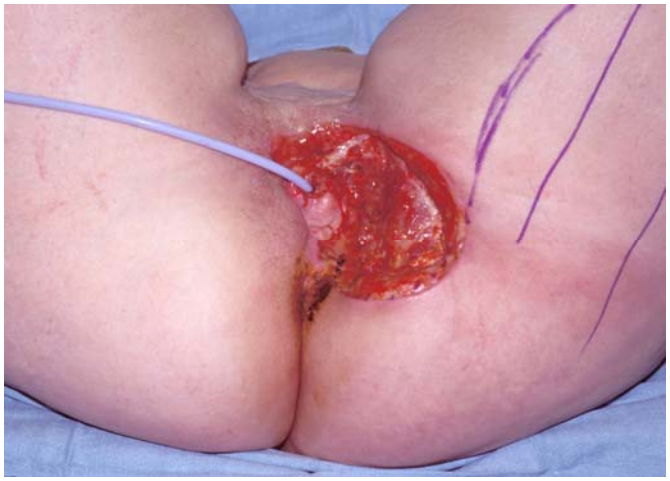


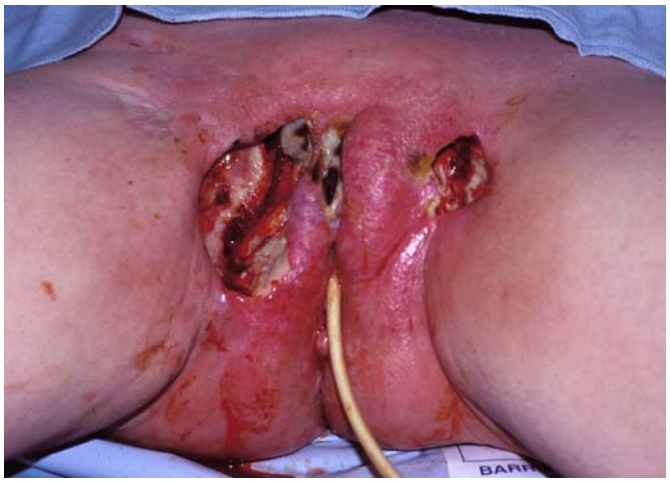
Vulvar Cancer



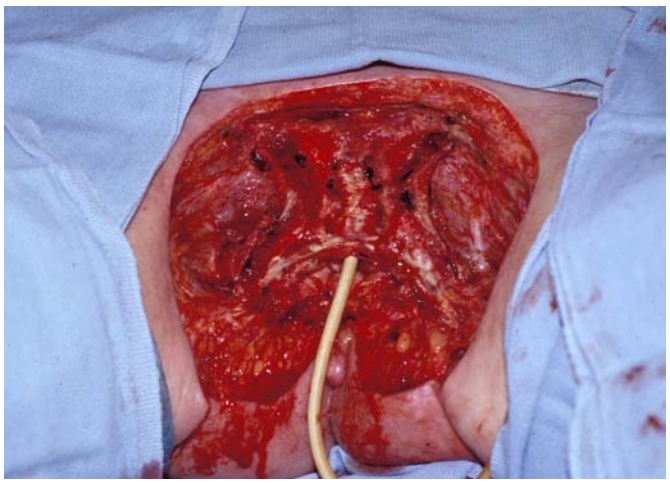
Recurrent CA Vulva | Status post XRT and now surgery



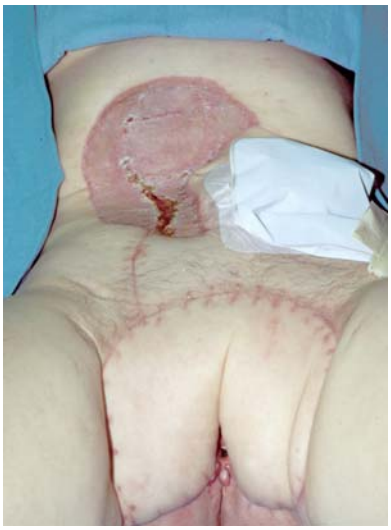
Radiation Necrosis



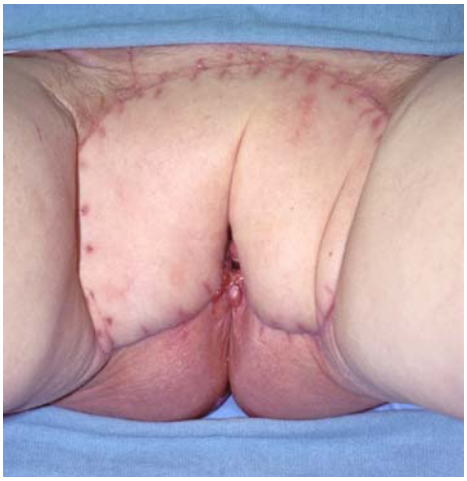
Resection w/ removal of pubic bone

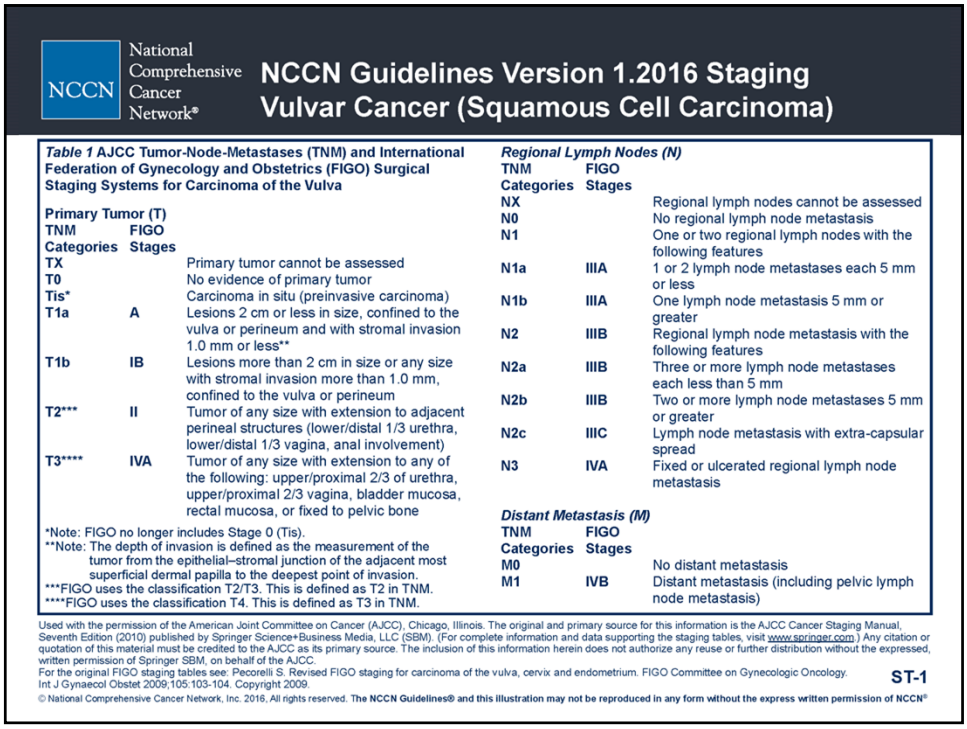


Vertical Rectus Flap Reconstruction



Vertical Rectus Flap Reconstruction





National Comprehensive Cancer Network®

NCCN Guidelines Version 1.2016 Staging
Vulvar Cancer (Squamous Cell Carcinoma)

Table 1 **AJCC Tumor-Node-Metastases (TNM) and International Federation of Gynecology and Obstetrics (FIGO) Surgical Staging Systems for Carcinoma of the Vulva**

Primary Tumor (T)

TNM Categories	FIGO Stages	
TX		Primary tumor cannot be assessed
T0		No evidence of primary tumor
Tis*		Carcinoma in situ (preinvasive carcinoma)
T1a	A	Lesions 2 cm or less in size, confined to the vulva or perineum and with stromal invasion 1.0 mm or less**
T1b	IB	Lesions more than 2 cm in size or any size with stromal invasion more than 1.0 mm, confined to the vulva or perineum
T2***	II	Tumor of any size with extension to adjacent perineal structures (lower/distal 1/3 urethra, lower/distal 1/3 vagina, anal involvement)
T3****	IVA	Tumor of any size with extension to any of the following: upper/proximal 2/3 of urethra, upper/proximal 2/3 vagina, bladder mucosa, rectal mucosa, or fixed to pelvic bone

*Note: FIGO no longer includes Stage 0 (Tis).
**Note: The depth of invasion is defined as the measurement of the tumor from the epithelial–stromal junction of the adjacent most superficial dermal papilla to the deepest point of invasion.
***FIGO uses the classification T2/T3. This is defined as T2 in TNM.
****FIGO uses the classification T4. This is defined as T3 in TNM.

Regional Lymph Nodes (N)

TNM Categories	FIGO Stages	
NX		Regional lymph nodes cannot be assessed
N0		No regional lymph node metastasis
N1		One or two regional lymph nodes with the following features
N1a	IIIA	1 or 2 lymph node metastases each 5 mm or less
N1b	IIIA	One lymph node metastasis 5 mm or greater
N2	IIIB	Regional lymph node metastasis with the following features
N2a	IIIB	Three or more lymph node metastases each less than 5 mm
N2b	IIIB	Two or more lymph node metastases 5 mm or greater
N2c	IIIC	Lymph node metastasis with extra-capsular spread
N3	IVA	Fixed or ulcerated regional lymph node metastasis

Distant Metastasis (M)

TNM Categories	FIGO Stages	
M0		No distant metastasis
M1	IVB	Distant metastasis (including pelvic lymph node metastasis)

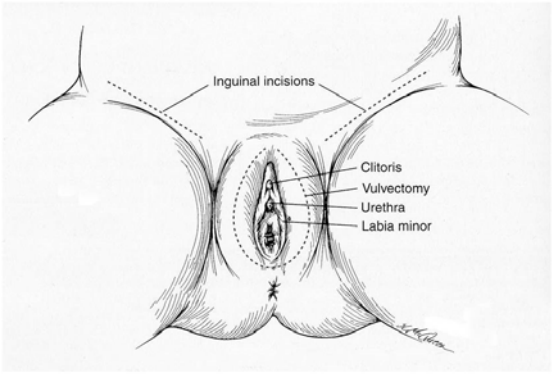
For the original FIGO staging tables see: Pecorelli S. Revised FIGO staging for carcinoma of the vulva, cervix and endometrium. FIGO Committee on Gynecologic Oncology. Int J Gynaecol Obstet 2009;105:103-104. Copyright 2009.

ST-1

Vulvar Cancer
Principles of Vulvar Surgery

- Adequate surgical margin of 1 to 2 cm at primary surgery.
- Lymph node status most important determinant of survival.
- Vulvar midline lesion needs bilateral inguinofemoral groin node evaluation.
- Vulvar lateral lesion (> 2cm from vulva midline) & ipsilateral groin node evaluation.
- Sentinel lymph node biopsy in selected patients.
- Advanced vulvar cancers need individualized therapy approach.

Vulvar Cancer



Artist Credit: S.C. McQueen

Carcinoma of the Vulva: Treatment

- Microinvasive defined as <1 mm
- Unilateral carcinoma
  - Limited radical vulvectomy and ipsilateral inguinal femoral node dissection
- Modification of radical vulvectomy
- Sentinel lymph node biopsy
- Lymph node dissection through separate incision
- Postoperative radiation therapy for node positive patients
- Radiation therapy and chemotherapy for inoperable carcinomas

Vulvar Cancer

Sentinel Lymph Node Biopsy (SLNB)
Meta-Analysis

- SLNB detection rate of 87% (using radiocolloid and blue dye)
- SLNB – false negative rate was 6.4%
- Recurrence rate:
  - SLNB – 2.8%
  - IFLD – 1.4% (Inguinal Femoral Lymph Node Dissection)

Covens A. *Gynecol Oncol* 2015;137(2):351-361

Vulvar Cancer

Patient Selection for SLNB

- Unifocal tumor less then 4cm
- Clinically non-suspicious nodes in the groin
- No previous vulvar surgery
- Adequate experience and resources

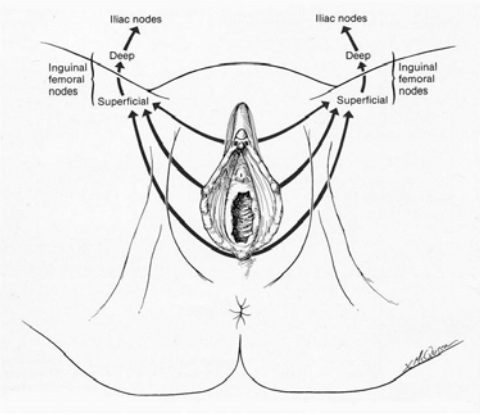
Covens A. *Gynecol Oncol* 2015;137(2):351-361

Lymphatic Mapping and Sentinel Node Identification

Carcinoma of Vulva

- Lymphazurin blue dye
- Lymphoscintigraphy

Lymphatic Mapping and Sentinel Node Identification



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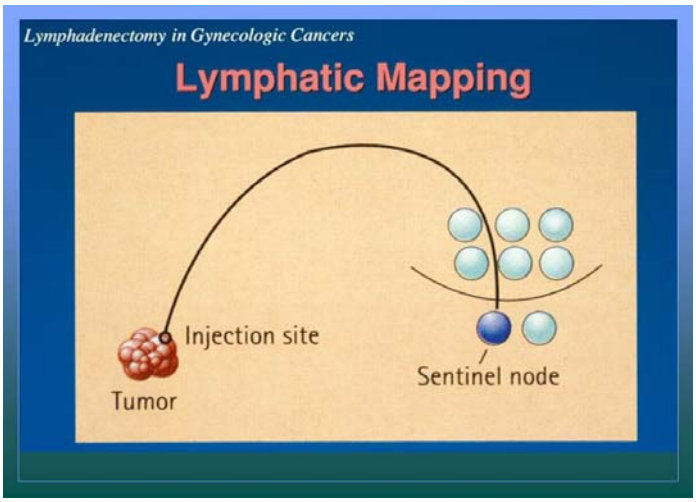
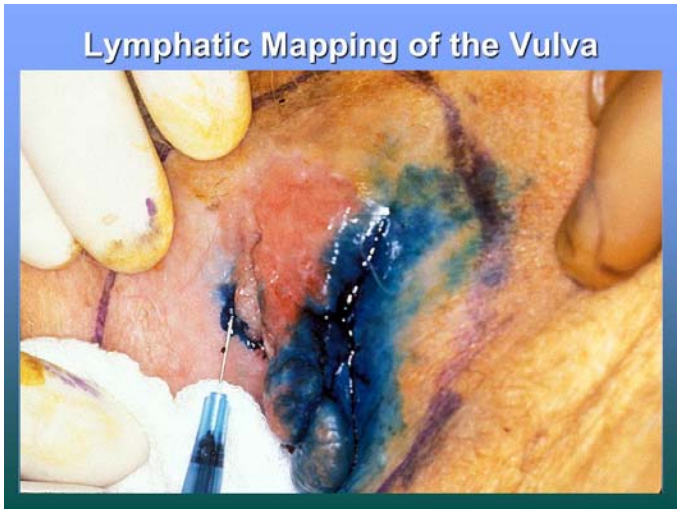
Vulvar Cancer



Levenback, Burke. "Surgery For Invasive Vulvar Cancer", 1999.

Vulvar Cancer



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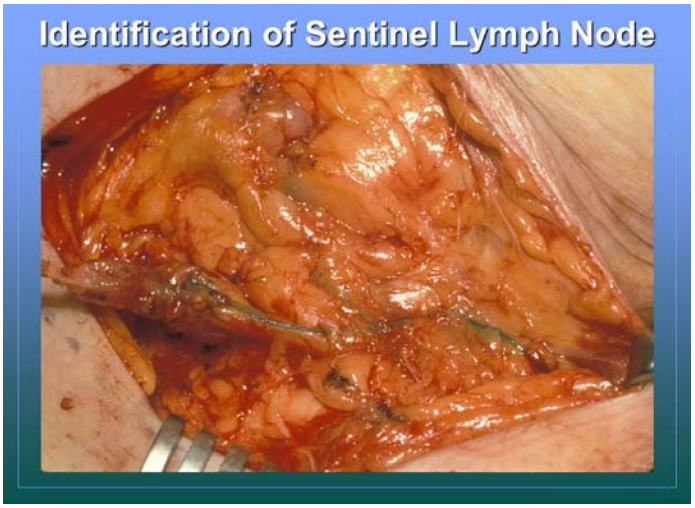
Vulvar Cancer



Levenback, Burke. "Surgery For Invasive Vulvar Cancer", 1999.

Principles of Radiation

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NCCN Guidelines Version 1.2016
Vulvar Cancer (Squamous Cell Carcinoma)

SYSTEMIC THERAPY

Chemoradiation
- Cisplatin
- 5-FU and cisplatin
- 5-FU and mitomycin-C

Chemotherapy for Advanced, Recurrent/Metastatic Disease
- Cisplatin
- Cisplatin/vinorelbine
- Cisplatin/paclitaxel

VULVA-C

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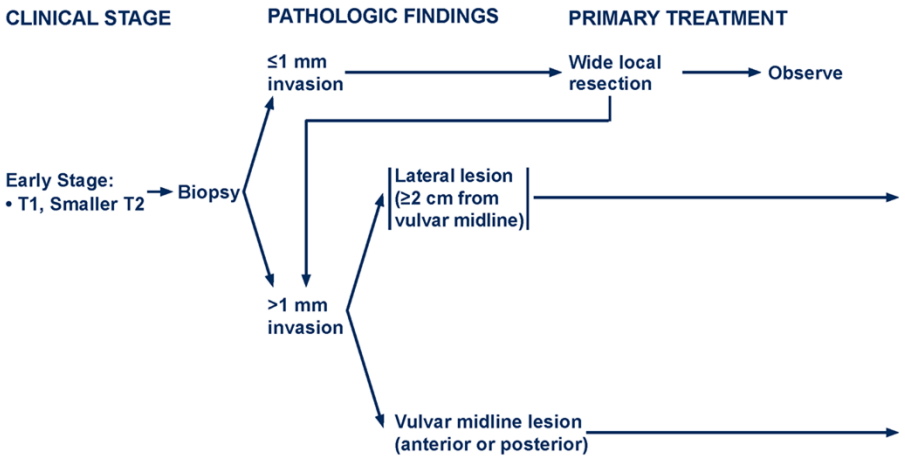
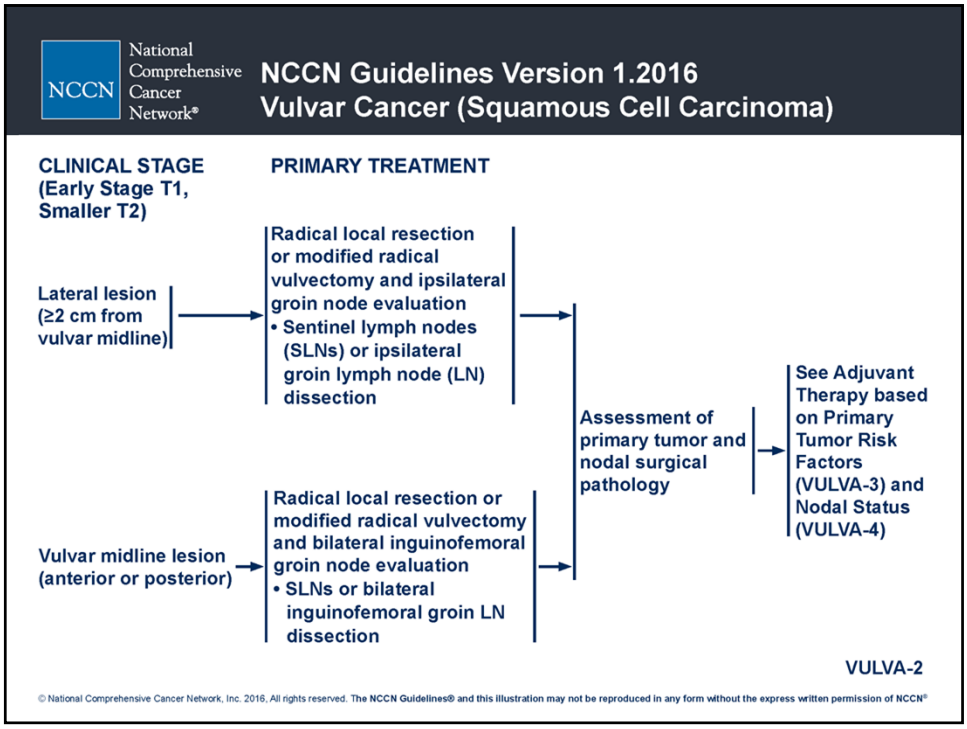
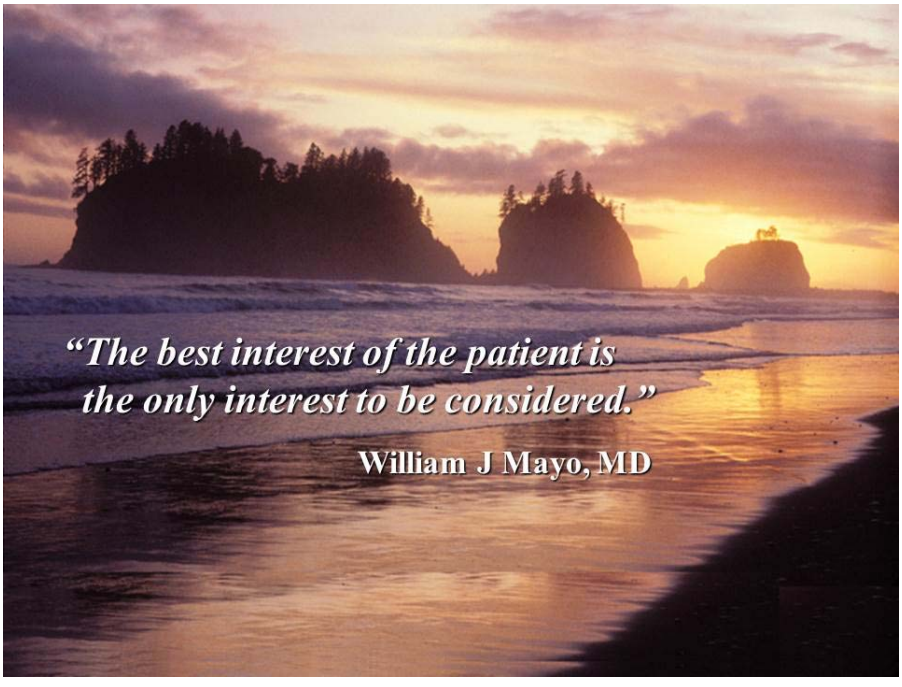
Vulvar Cancer (Squamous Cell Carcinoma)



VULVA-2





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Book Chapters

- Greer, BE, Berek JA – Evolution of Primary Treatment of Invasive Squamous Cell Carcinoma of the Vulva. In Gynecology Oncology Treatment Rationale and Techniques | Edited by Greer BE ; Berek JS | New York: Elsevier 1991: 227
- Levenback C; Burke TW | Surgery For Invasive Vulvar Cancer. In contemporary Clinical Management of Gynecologic Malignancies. Edited by Greer BE; Montz FJ | Philadelphia: Current Medicine 1999: 6.1

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NCCN Guidelines for Vulvar Cancer – Underlying principles

- Vulvar cancers are rare tumors
  - Heterogeneous presentation and risk
  - Only 2 randomized treatment trials 'completed'
  - A handful of important prospective observational studies

NCCN Guidelines for Vulvar Cancer – Underlying principles

- Early stage disease – often cured by resection alone
  - Evolution from 'Halstedian' approach to more limited, tailored surgery
  - Sentinel lymph node evaluation
    - » GROINSS-VI (van der Zee, JCO 2008; Grootenhuis, Gynecol Oncol 2016)
      - < 3% groin relapse in SLN negative patients (unifocal, < 4 cm)
    - » GOG 173 (Levenback, JCO 2012)
      - False negative predictive value 3.7% (tumors 2-6 cm)
      - False negative predictive value 2.0% for tumors < 4 cm

NCCN Guidelines for Vulvar Cancer – Underlying principles

- Site matters! – primary site vs groins
- Often considered 'separately' in treatment planning
  - Metachronous groin failures occur early; rarely curable
  - Local vulvar failures occur later and are often cured with additional surgery (recurrence vs re -occurrence)
    - » Stehman, Am J Obstets Gynecol 1996
    - » Oonk, Cancer 2003
    - » Cormio, Eur J Cancer Care 2010
    - » Grootenhuis, Gynecol Oncol 2016
    - » ? Frey, Int J Gynecol Oncol 2016

NCCN Guidelines for Vulvar Cancer – Underlying principles

- For early stage tumors - **adjuvant** radiotherapy is an effective treatment modality that significantly decreases recurrence in surgically resected groins with positive LN(s), leading to improvements in RFS and OS
  - Greatest independent predictor of groin relapse is groin node involvement at presentation
  - Radiation to the vulva can lead to significant morbidity
- For locally advanced disease - **neoadjuvant** radiotherapy (typically with chemotherapy) results in significant clinical and pathologic responses, allowing for reduced-scope/non-exenterative surgery

NCCN Guidelines for Vulvar Cancer – Underlying principles

- Chemotherapy in addition to radiation (concurrent) may provide additional therapeutic benefit
  - Especially in advanced, 'unresectable' disease
  - May help address systemic risk in patients with multiple positive LNs

Adjuvant therapy for GN+ vulvar ca

- GOG 37: N=114 pts (Homesley, Obstet Gynecol 1986)
- Groin LN +, s/p RV and bilateral full (S&D) groin (inguinal-femoral) dissection, randomized to:
  - Bilat pelvic node dissection vs bilat groin/pelvic RT
  - 45-50 Gy @ 1.8-2.0 Gy/fx (Ant/Post photons)
  - Study closed at interim analysis – RT advantage
    - » Surgical control - 24% groin failure rate
    - » XRT - 5% groin failure rate
    - » 2 yr Overall Survival: 68% RT vs 54% S (p=.03)
    - » 2 yr CSS: 75% RT vs 54% S (p=.004)
- "Subset analysis" - Predominant advantage to RT for ≥ 2 LN +, or clinical N2/N3 (suspicious/fixed/ulcerated)

Adjuvant therapy for GN+ vulvar ca

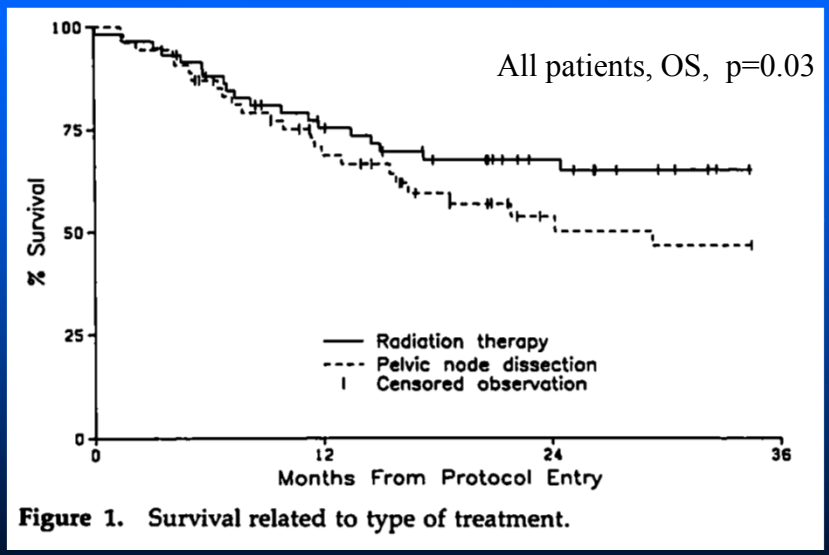


Figure 1. Survival related to type of treatment.

Homesley, Obstet Gynecol 1986

Adjuvant therapy for GN+ vulvar ca

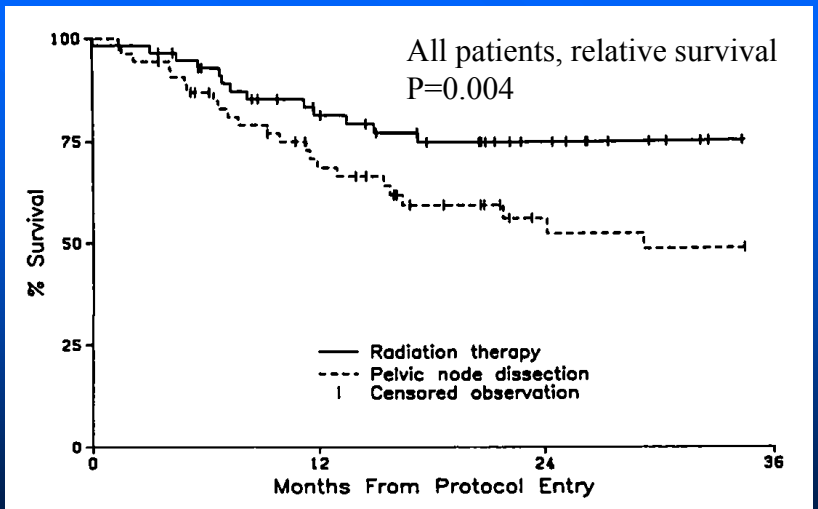


Figure 5. Relative survival related to treatment.

Homesley, Obstet Gynecol 1986

Adjuvant therapy for GN+ vulvar ca

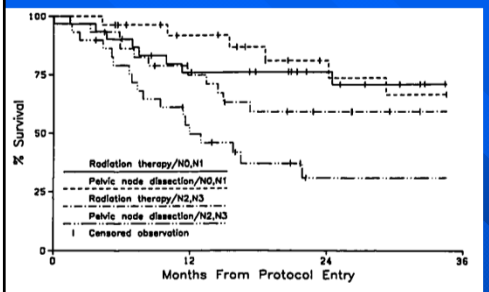


Figure 2. Survival related to clinical groin node status and treatment.

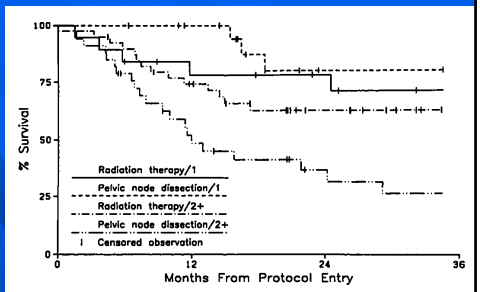


Figure 3. Survival related to number of positive groin nodes and treatment.

Clinical N0/N1 vs N2/N3
(suspicious/fixed/ulcerated)

1 vs ≥ 2 LN+

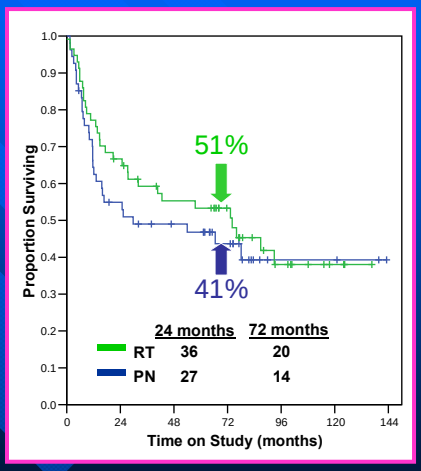
Homesley, Obstet Gynecol 1986

GOG 37 – long-term outcomes

Median at risk follow up = 74 months

(Kunos, Obstet Gynecol, 2009)

- **Hazard Ratio for OS (All-cause Death) = 0.61**
  - **95% CI 0.30-1.30 (p=0.18)**
  - **'Favors' Radiation**

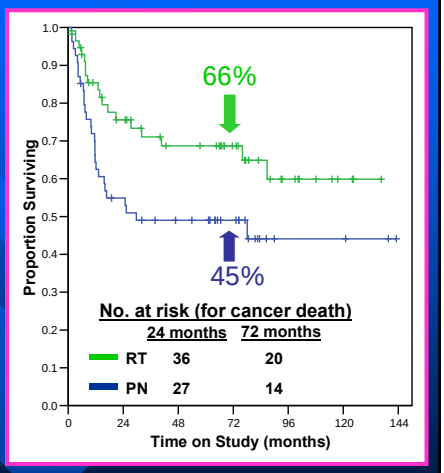


Courtesy - Kunos

GOG 37 – long-term outcomes

(Kunos, Obstet Gynecol, 2009)

- Hazard Ratio for Cancer-related Death = 0.44
  - 95% CI 0.19-0.98
  - *P* =0.04
  - Favors Radiation
  - Benefit manifested via improved groin control:
    S – 24% recur, R – 5% recur



Courtesy - Kunos

GOG 37 – long-term outcomes

(Kunos, Obstet Gynecol, 2009)

- Persistent groin control and survival benefit favoring RT for
  - ≥ 2 LN+ : p < 0.001
  - N2/N3 (suspicious/fixed/ulcerated): p = 0.004
    - » Currently 're-interpreted' as Extra-capsular extension (ECE) or "gross" tumor (size threshold?)
- Chronic lymphedema ~ 20%
  - No observable increase with RT (under-evaluated)
  - Associated with DM, cardiovascular disease

Adjuvant therapy considerations for 1 groin LN+

- **Adj RT for single LN+?**
  - GOG 37 was a positive trial for **ALL** LN+ pts
  - Benefit if less extensive GND? (≤ 12 LNs removed) (Parthasarathy, SEER analysis, Gynecol Oncol 2006)

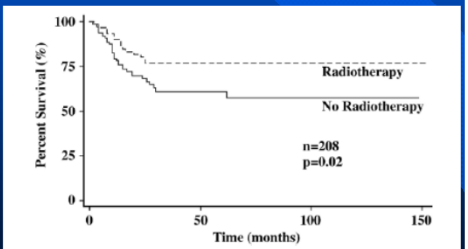


Fig. 1. Kaplan–Meier disease-specific survival of patients with single-node-positive vulvar carcinoma.

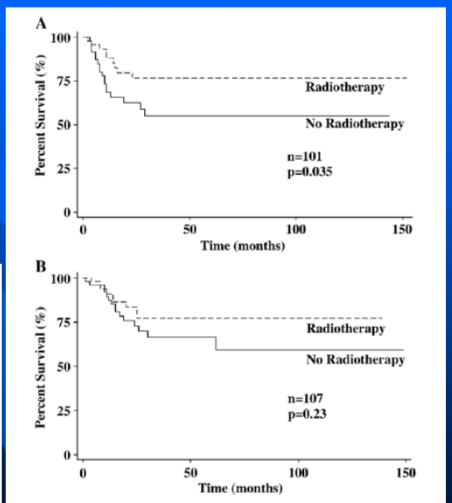


Fig. 2. (A) Kaplan–Meier disease-specific survival of patients with ≤ 12 nodes resected. (B) Kaplan–Meier disease-specific survival of patients with > 12 nodes resected.

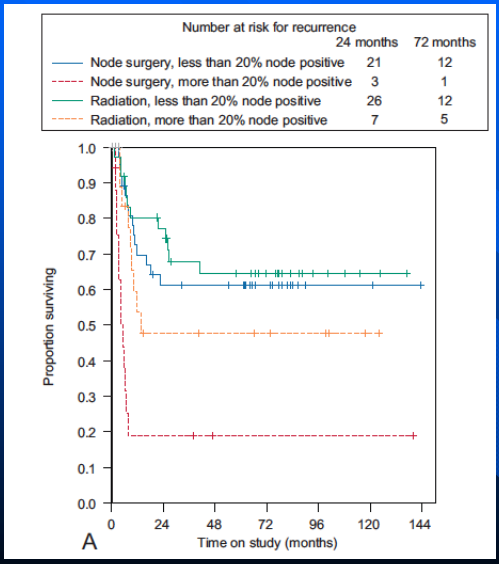
Adjuvant therapy considerations for 1 groin LN+
GOG 37 – long-term outcomes
(Kunos, Obstets Gynecol, 2009)

- **Ratio:** $\frac{\text{\# positive LNs}}{\text{\# resected LNs}}$ >20%
  - Contralateral LN+: P=0.02
  - Pelvic LN+: P=0.06
  - Recurrence: P=0.03
  - Cancer-related death: P=0.02

Adjuvant therapy considerations for 1 groin LN+

GOG 37 – long-term outcomes

(Kunos, Obstets Gynecol, 2009)



Impact of RT on RFS, based on ≤20% vs >20% nodal involvement

Useful clinical decision-making tool

Adjuvant therapy considerations for 1 groin LN+

Size of sentinel-node metastasis and chances of non-sentinel-node involvement and survival in early stage vulvar cancer: results from GROINSS-V, a multicentre observational study

Maaike H Oonk, Bettien M van Hemel, Harry Hollema, Joanne A de Hullu, Anca C Ansink, Ignace Vergote, René H Verheijen, Angelo Maggioni, Katja N Gaarenstroom, Peter J Baldwin, Eleonora B van Dorst, Jacobus van der Velden, Ralph H Hermans, Hans W van der Putten, Pierre Drouin, Ingo B Runnebaum, Wim J Sluiter, Ate G van der Zee

Interpretation Our data show that the risk of non-sentinel-node metastases increases with size of sentinel-node metastasis. No size cutoff seems to exist below which chances of non-sentinel-node metastases are close to zero. Therefore, all patients with sentinel-node metastases should have additional groin treatment. The prognosis for patients with sentinel-node metastasis larger than 2 mm is poor, and novel treatment regimens should be explored for these patients.

Lancet Oncol 2010

Prophylactic Groin RT (no IFND) in vulvar cancer

- GOG 88 - Clinical N0/N1 vulvar cancer (RV) <u>randomized</u> to groin dissection vs RT
  (Stehman, Int J Radiat Oncol Biol Phys 1992)

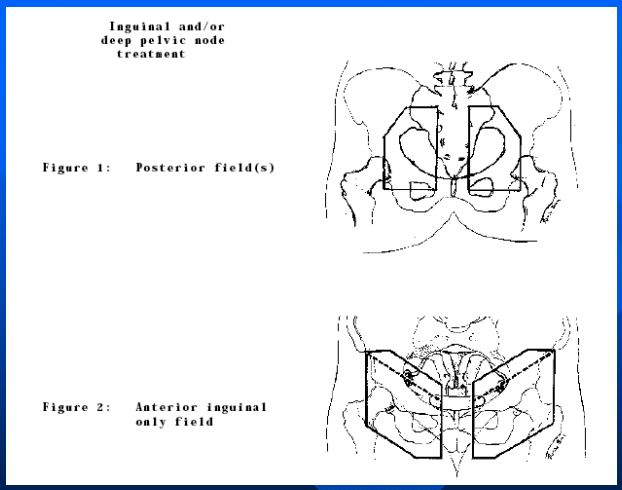
  Groin dissection - 5/25 pts with + nodes
  - all received post-op RT
  - no groin recurrence

  Groin RT - 5/27 patients failed in-field

  Concluded that groin radiation group had significantly decreased survival, PFI, and regional tumor control

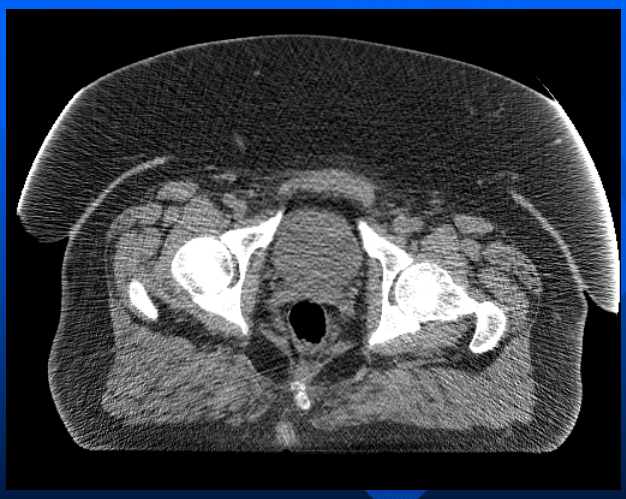
  Radiation patients received 50 Gy at 3 cm, 50% electrons

Groin RT for vulvar cancer



GOG RT manual (2013) – gog.org

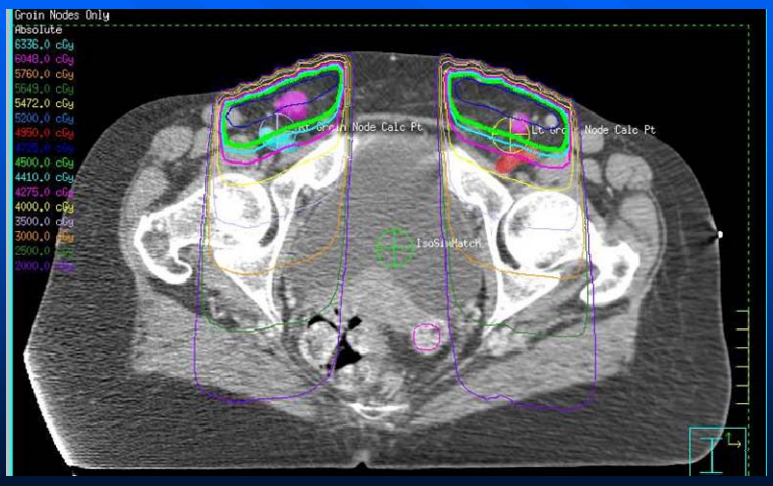
Groin RT for vulvar cancer



T3N0 vulvar cancer

Groin RT for vulvar cancer

Isodose distribution for 50% electrons/50% photons dosed at 3 cm depth



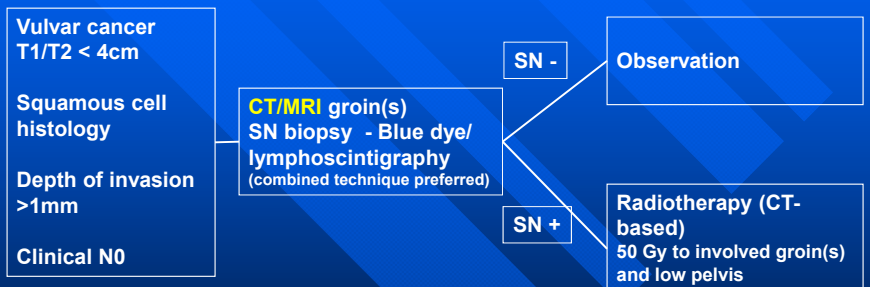
Prophylactic Groin RT in vulvar cancer

- Very few groin nodes lie within 3 cm of skin
  - (Koh, IJROBP 1993; Eifel, Front Radiat Ther Oncol 1994)
- Clinical palpation of groins is unreliable
  - Subclinical disease ≠ microscopic disease
  - CT-based planning is necessary
- Proper radiation treatment planning allows good groin prophylaxis
  - Petereit, IJROBP 1993
  - Leiserowitz, Gynecol Oncol 1997
  - Katz, IJROBP 2003

GROINSS-VII

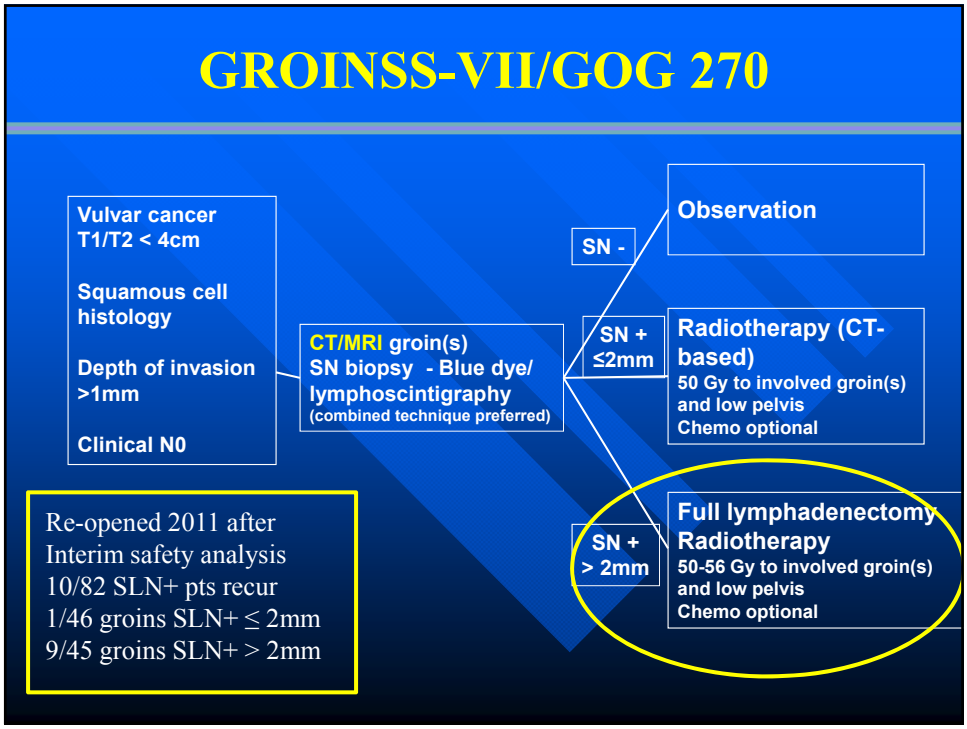
(van der Zee)

Unifocal tumor
Opened 2006



GROnigen International Study on Sentinel nodes in Vulvar cancer – II
SN – Sentinel node

GROINSS-VII/GOG 270



'Inadequacy' of RT to the undissected groin: Potential causes

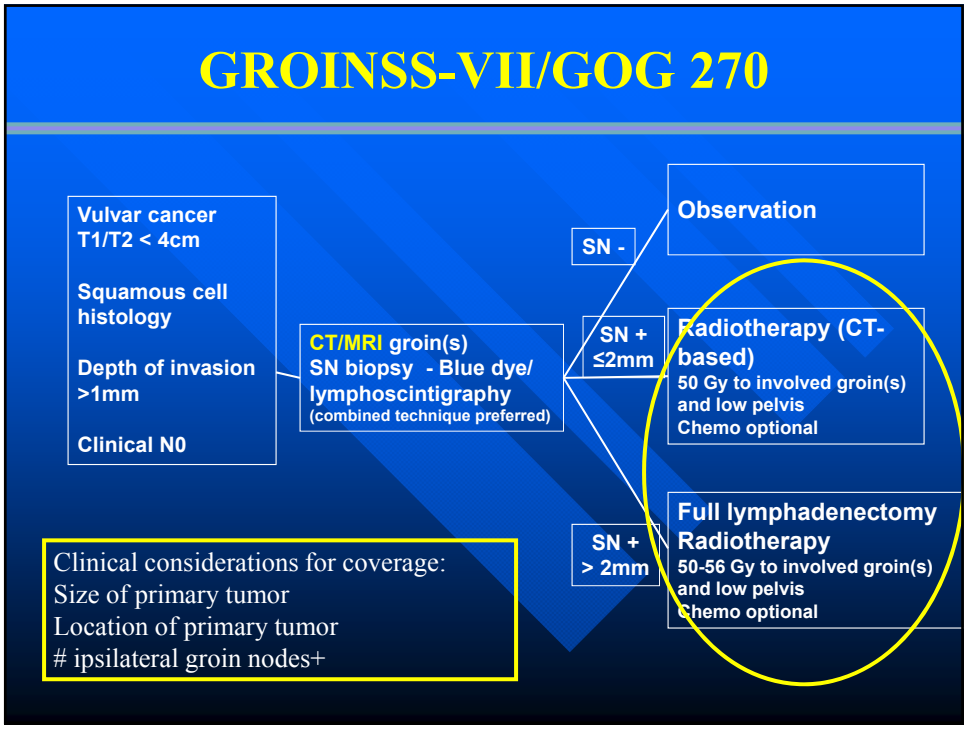
- ?Inadequate RT coverage – GOG 88
- ?Tumor biology
  - ?Residual tumor volume
  - ?SLNB-induced changes to the groin microenvironment
    - » Tumor hypoxia, accelerated repopulation
- Other reasons?

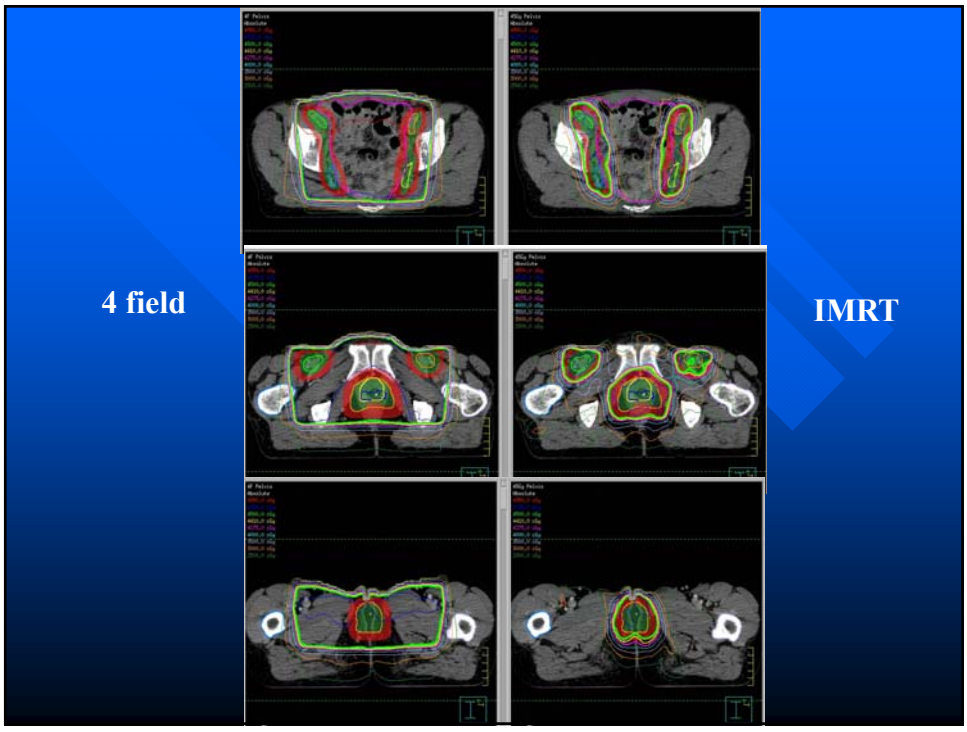
Scope of RT for GN+ vulvar ca

- Issues
  - GOG 37 radiated bilateral groins and pelvis, regardless of nodal laterality
  - Current emphasis on minimizing toxicity and reducing extent of therapy in early stage disease (risk of lymphedema with RT following GND)
  - Adequacy of contralateral groin evaluation

Scope of RT for GN+ vulvar ca

- Incidence of contralateral (undissected) groin +, when ipsilateral groin is +
  - ~ 20% in GOG surgicopathologic study of 277 lateral vulvar cancers, especially if tumor thickness > 5mm (Holmesley, Gynecol Oncol 1993)
  - ~ 18% in Mayo study of 163 lateral tumors, (tumor size > 2 cm, thickness > 5 mm, or > 2 ipsilat LN+) (Bosquet, Gynecol Oncol 2007)
- Management of the pelvis
  - 28% of patients with GN+ had pelvic LN+ on GOG 37 PND arm (Holmesley, Obstet Gynecol 1986)
  - Mayo analysis – 14/108 (13%) of GN+ had pelvic LN+, increasing to 40% if > 2 GN+ (Bosquet, Gynecol Oncol 2007)





Adjuvant RT for vulvar ca - Primary site?

- Predictors of vulvar relapse (Heaps, Gyn Oncol 1990)
  - Tumor-free margin < 8mm (48% LF)
    - » de Hullu, Cancer 2002; Chan, Gynecol Oncol 2007
    - » Viswanathan, Gynecol Oncol 2013 – used 5 mm margin cutoff
  - Tumor thickness, depth of invasion > 10mm
  - 'Spray' pattern histology
  - Vascular space invasion
- Toxicity of RT to vulvar tissues
- Majority of vulvar relapses salvageable

Adjuvant RT for vulvar ca - Primary site?

- RT to primary site improves LC substantially in patient with close or positive surgical margins

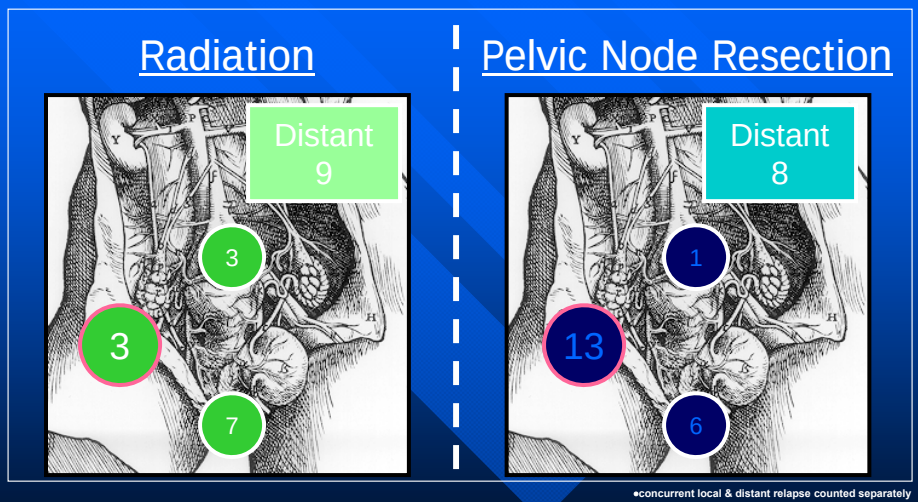
  Faul, IJROBP 1997; Viswanathan Gynecol Oncol 2013

- "My practice pattern" – adjuvant primary site RT
  - If patient is not candidate for further surgery
    - » + margin(s)
    - » ≥ 3 'Heaps factors', or 2 factors and LN+

Adjuvant therapy for groin node + vulvar ca
Concurrent chemotherapy?

- No phase III data
- GOG 37 (Holmesley, Obstets Gynecol 1986)
  - Groin node +, superior RT arm
    - » 2 year survival rate = 68%
  - Pelvic LN+
    - » 2 yr survival rate = 23%
- Extrapolated data of enhanced response rates and distant control with chemoRT in LN+ cancers (cervix, rectal)
- Elderly with medical comorbidities

GOG 37 – long-term outcomes
(Kunos, Obstets Gynecol, 2009)



Courtesy - Kunos

Systemic Risk – implications for therapy?

Chemo and RT in vulvar cancer?

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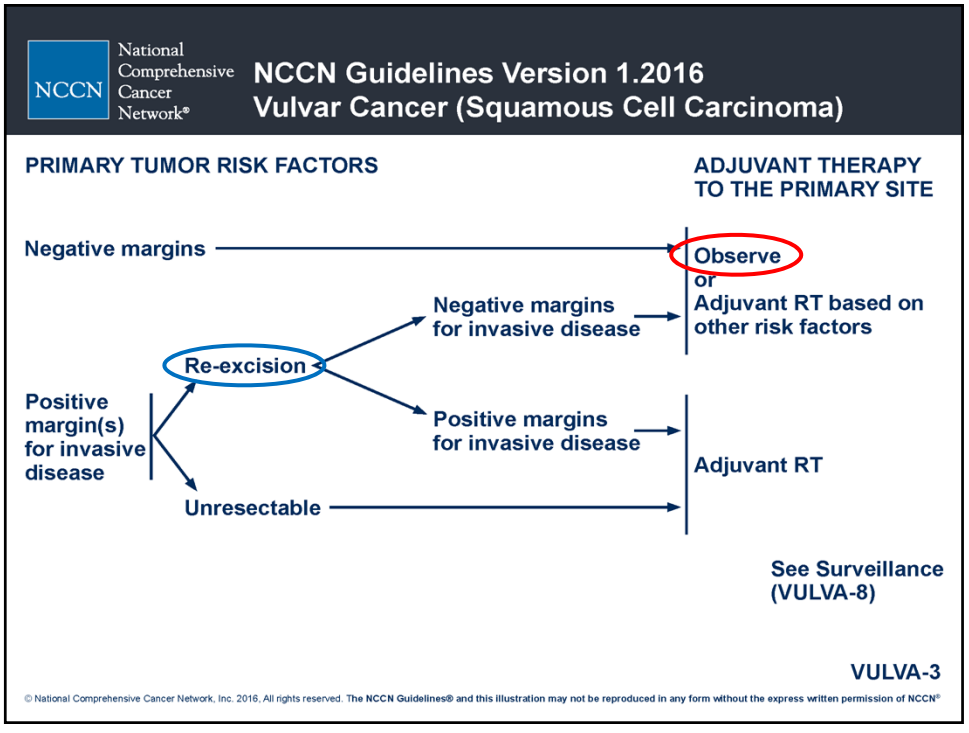
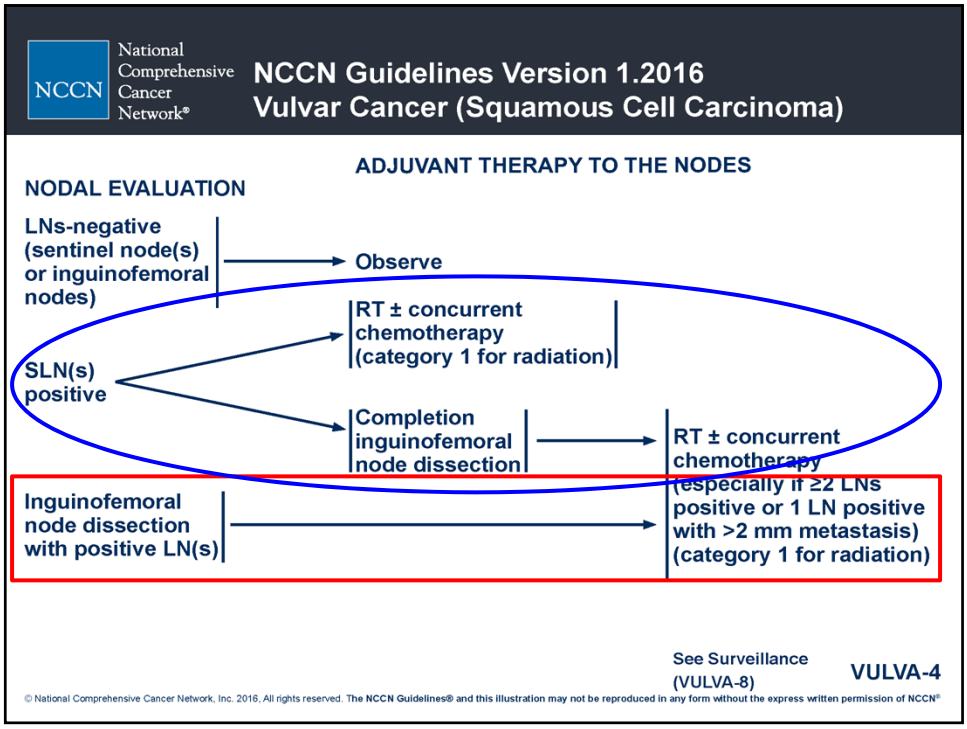
journal homepage: www.elsevier.com/locate/ygyno

Impact of adjuvant chemotherapy with radiation for node-positive vulvar cancer: A National Cancer Data Base (NCDB) analysis☆

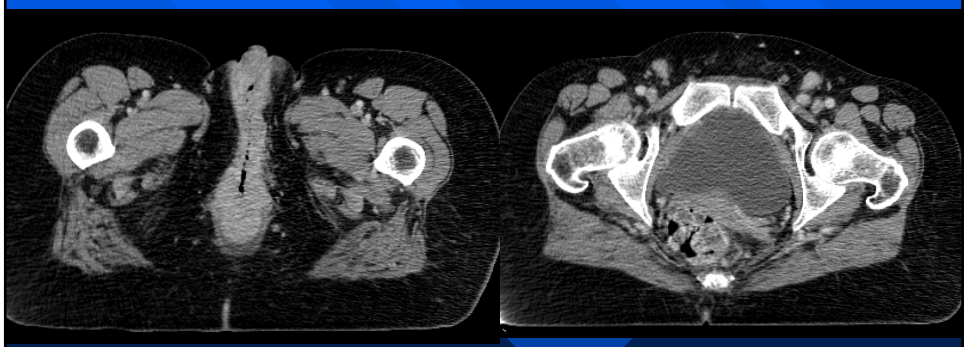
Beant S. Gill [a], Mark E. Bernard [a], Jeff F. Lin [b], Goundappa K. Balasubramani [c], Malolan S. Rajagopalan [a], Paniti Sukumvanich [b], Thomas C. Krivak [d], Alexander B. Olawaiye [b], Joseph L. Kelley [b], Sushil Beriwal [a,*]

Conclusion. In a large population-based analysis, adjuvant chemotherapy resulted in a significant reduction in mortality risk for node-positive vulvar cancer patients who received adjuvant radiotherapy.





Vulvar cancer – locally advanced T4N2



GOG 101 - Preop CRT for local-regionally advanced vulvar ca

(Moore 98, Montana 2000, IJROBP)

Week	1	2	3	4	5	6
Chemo 5FU Cisplatin	F F F F C				F F F F C	
RT	X X X X X X X X X	X X X X X			X X X X X X X X X	X X X X X

RT - 47.6 Gy in 28 fx

GOG 101 - Preop CRT for local-regionally advanced vulvar ca

- **Primary tumors** (Moore, IJROBP 98)
  - 71 evaluable patients (non primary RV candidates)
  - 2 unresectable, 1 exent, 2 colostomies
  - All others underwent resection of tumor bed (or bx's if cCR)
  - 34 cCR (48%), 22 pCR (31%)
  - 55% A/NED, median 50 m f/u
- **Groin nodes** (Montana, IJROBP 2000)
  - 38/40 (95%) of groins rendered resectable
  - 41% pCR
  - 12 pts A/NED, median 78 m f/u

Locally advanced vulvar cancer – GOG 205

(Moore, Gynecol Oncol 2012)

- Evaluated primary tumor only (successor to GOG 101)
  - Increase RT dose to GTV to 57.6 Gy
  - Weekly CDDP @ 40 mg/m2/wk x 6-7 cycles (no 5FU)
  - Eliminate elective break
  - All patients undergo initial bilateral GND unless unresectable – groin node RT is then tailored to groin pathology findings (GOG bias)
  - Endpoint analysis: 45% pCR (20% relative improvement over 31% pCR in GOG 101)
  - 58 evaluable patients (non primary RV candidates)

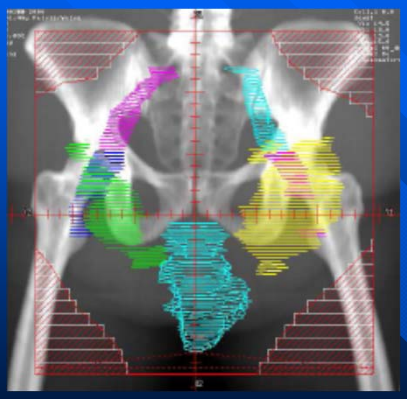
Locally advanced vulvar cancer GOG 101 vs 205 (Moore, Gyn Oncol 2012)

	GOG 101	GOG 205
Evaluable	71	58
CCR	34 (48%)	37 (64%)
PCR	22 (31%)	29 (50%)
PCR/CCR	22/34 (65%)	29/37 (78%)

GOG 279 - successor trial to GOG 205: locally advanced vulvar cancer

- Cisplatin/gemcitabine/RT phase II study
  - Increase GTV dose to 64 Gy
  - IMRT incorporated to reduce toxicities
- Primary endpoint goal – pCR ≥ 65%
  - If pCR sufficiently high, especially in cCR cases, do all patients need post-chemoRT surgery?

Vulvar cancer – locally advanced



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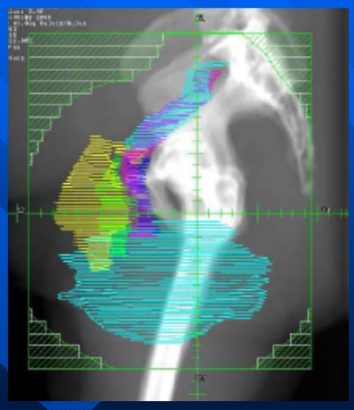

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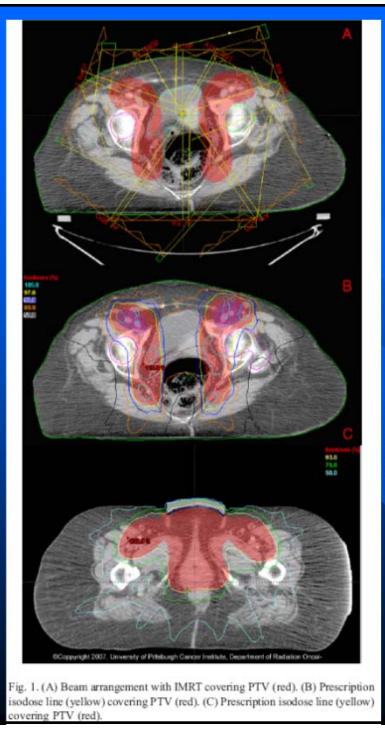


Fig. 1. (A) Beam arrangement with IMRT covering PTV (red). (B) Prescription isodose line (yellow) covering PTV (red). (C) Prescription isodose line (yellow) covering PTV (red).

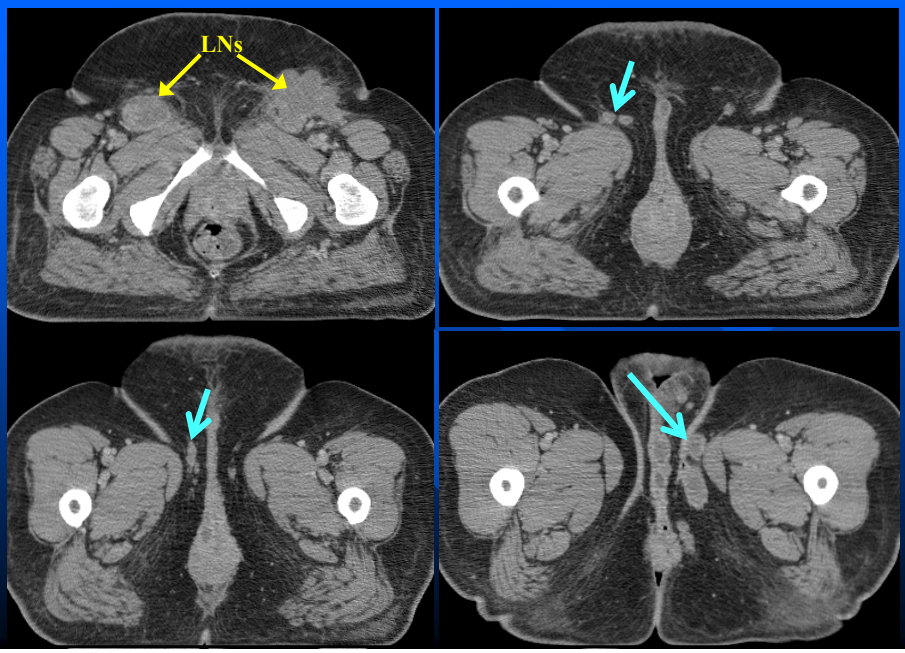
IMRT for locally advanced vulvar cancer

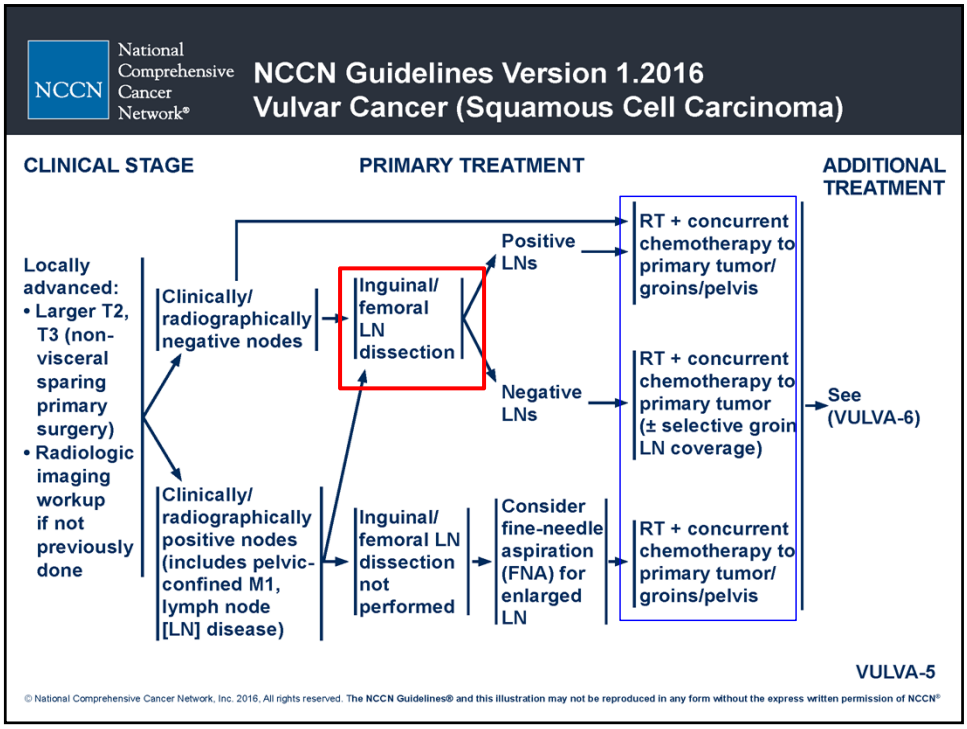
- Beriwal, Gynecol Oncol 2008
  - ~ 45 Gy pre-op, with 2 cycles 5FU/CDDP
  - Surgical resection 6-8 wks later
  - N=18 pts
  - cCR – 13/18 (72%)
  - pCR – 9/14 (64%)
  - No Gr ≥3 acute nor late toxicities

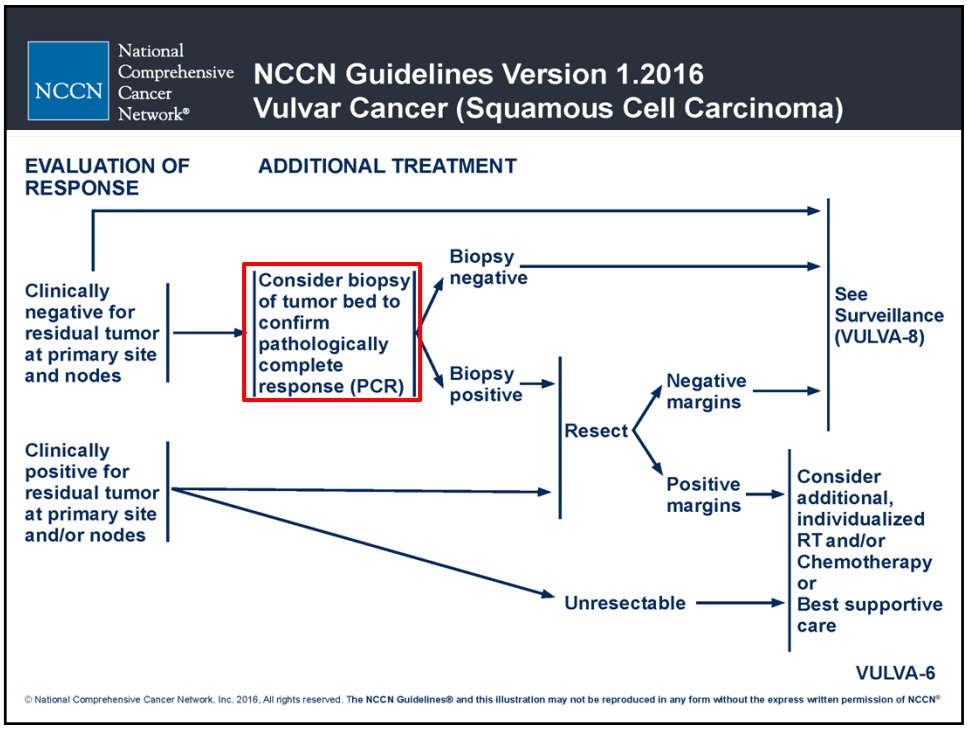
Vulvar cancer – locally advanced

- BUT…Generous RT coverage is needed
  - Not analogous to early vulvar cancer with 'skin-bridge' preservation, 'triple incisions'
  - May have significant altered/obstructed lymphatics

Vulvar cancer – locally advanced







Locally advanced vulvar cancer

- Initial ChemoRT to primary, groins, and pelvis
  - Concurrent weekly cisplatin (30-40 mg/m2/wk)
  - 45 Gy to at-risk, microscopic CTV
  - 57.6 – 60 Gy to GTV (primary and nodes)
    - » Careful use of IMRT (generous volumes)
  - Re-image and reevaluate at 6-8 weeks
    - » Resect/biopsy primary tumor site
    - » Limited groin resection of imageable residual
  - In clearly node+ cases, I favor up-front chemoRT to avoid delay of primary therapy, groin wound breakdown prior to RT, etc