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GURU HOSPITAL

NEW CANCER TREATMENT WITH NEW TECHNOLOGY

Pandikovil Ring Road, Madurai

CA PENIS - MANAGEMENT

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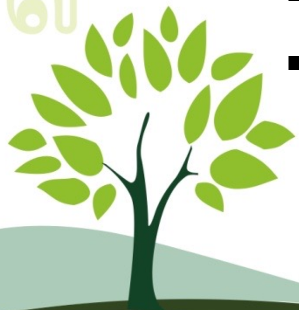
- **To discuss about**
  - Anatomy
  - Presentation
  - How to approach pt
  - Onco principle - Multimodal treatment
  - Surgical principle



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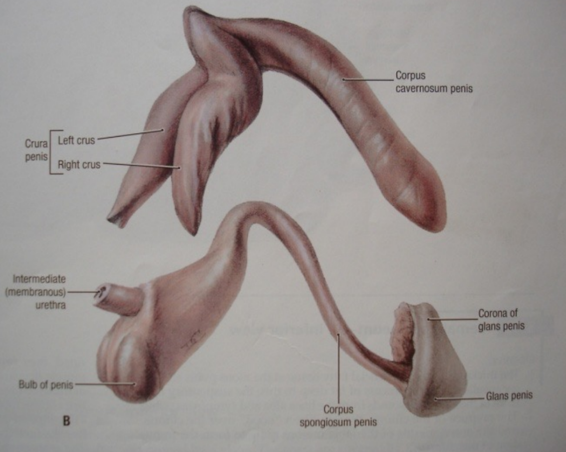
ANATOMY



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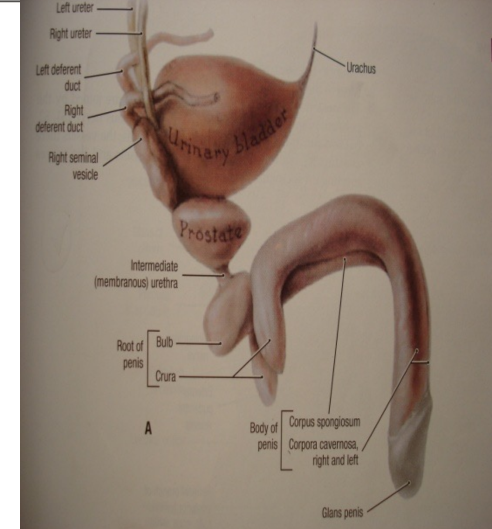
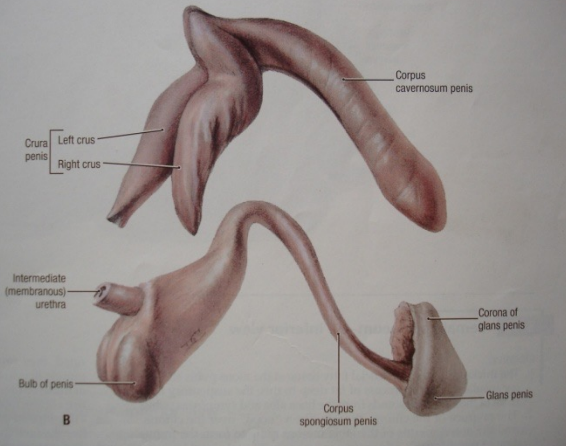


Penis has three main parts

- Root
- Body
- Glans

Root consists of bulb & two crura on each side

- Crura continue forward as corpora cavernosa
- Bulb is formed by posterior end of corpus spongiosum



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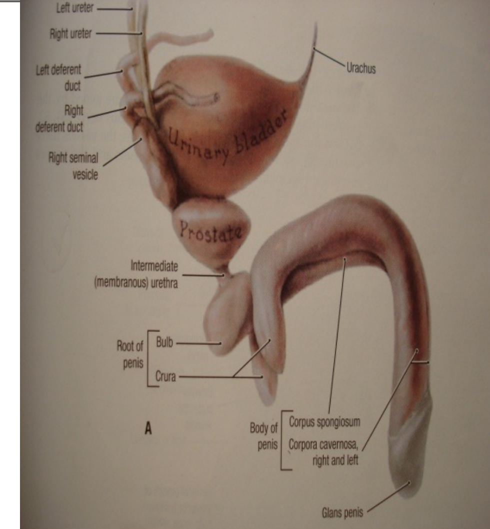
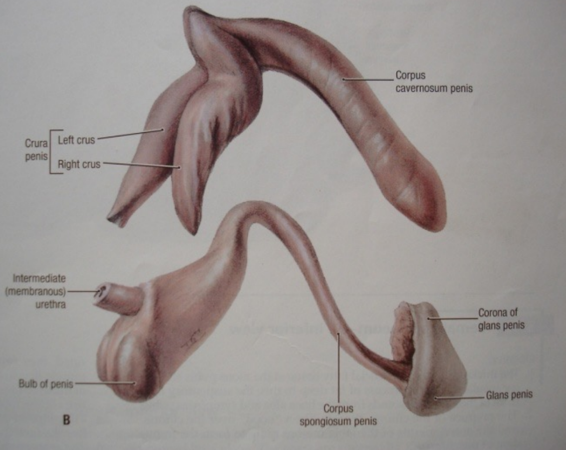


Penis has three main parts

- Root
- Body
- Glans

Body of penis is formed by two corpora cavernosa&corpus spongiosum , surrounded by tough fascia –Buck's fascia

This fibrous sheath is attached posteriorly to pubic symphysis by suspensory ligament of penis



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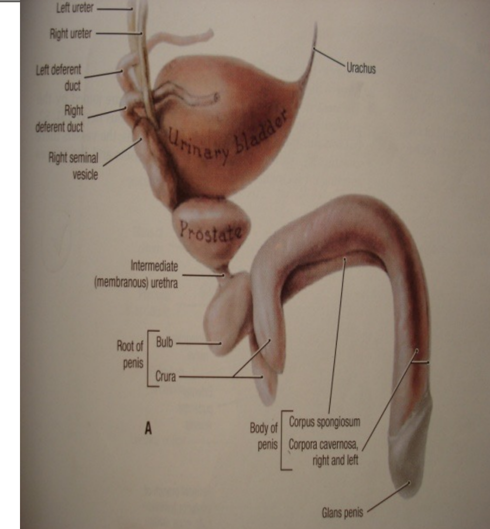


Penis has three main parts

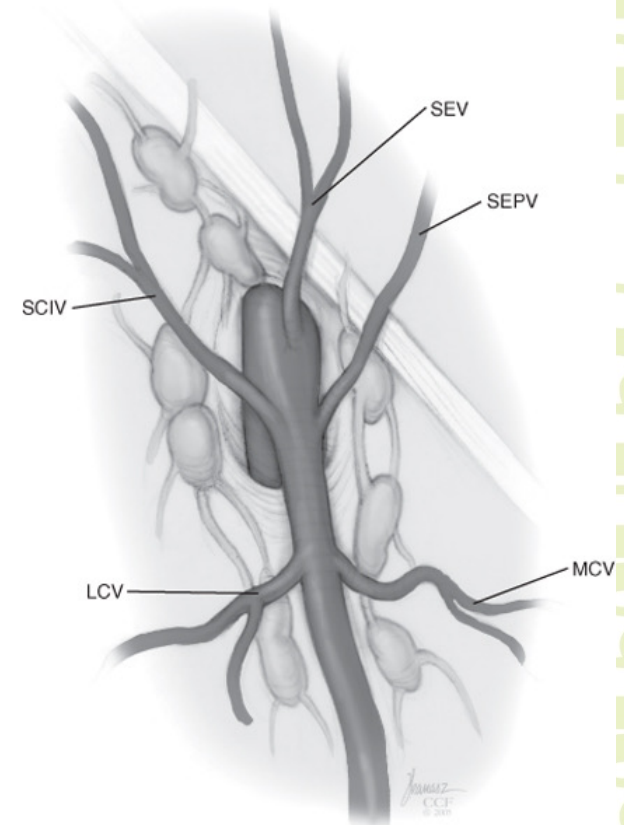
- Root
- Body
- Glans

Corpus spongiosum enlarges distally & forms the glans

Glans partially covered by the fold of skin - prepuce

SUPERFICIAL LYMPH NODES (5 GROUPS)

- **Superficial lymph nodes (5 groups)**
  - Central (saphenofemoral junction)
  - Superolateral (superficial circumflex vein)
  - Inferolateral (superficial circumflex Artery)
  - Superomedial (superficial epigastric veins)
  - Inferomedial (greater saphenous vein)



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SUPERFICIAL LYMPH NODES (5 GROUPS)

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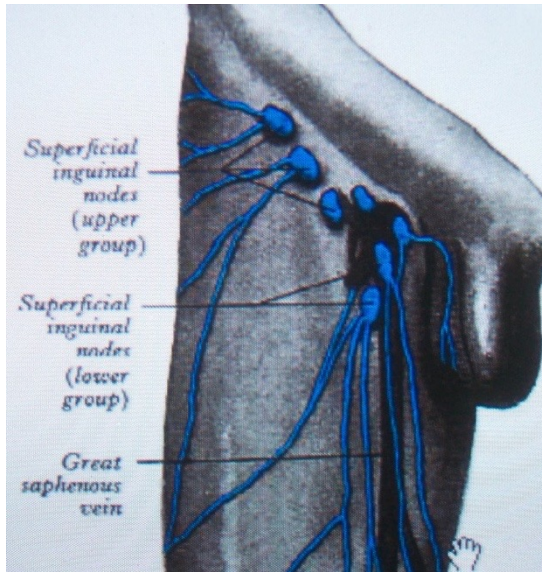

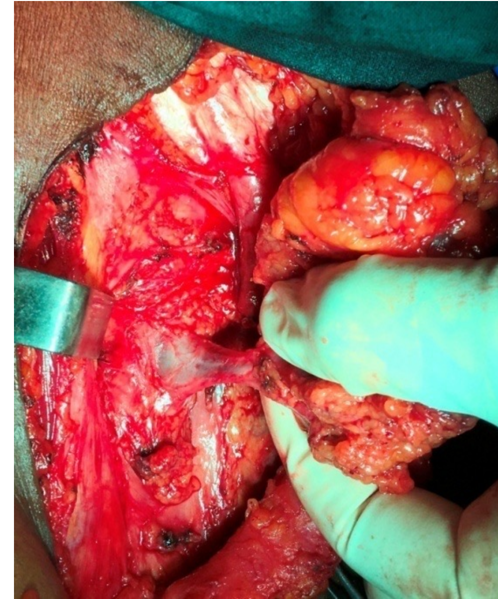

DEEP INGUINAL NODES

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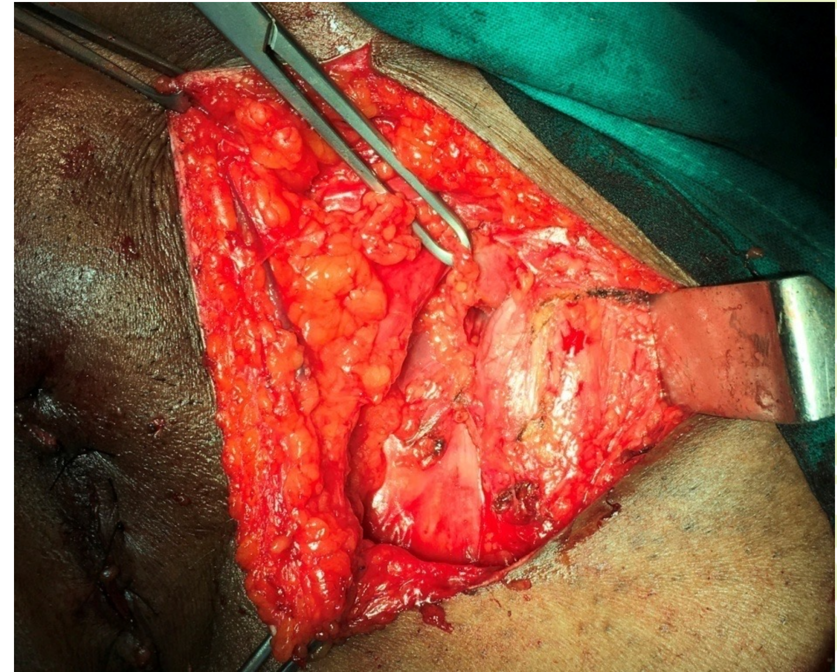
- Deep inguinal nodes
  - Medial to femoral vein in the femoral canal

Cloquet

- Between the femoral vein and the lacunar ligament



ILLIAC NODES – PELVIC NODES

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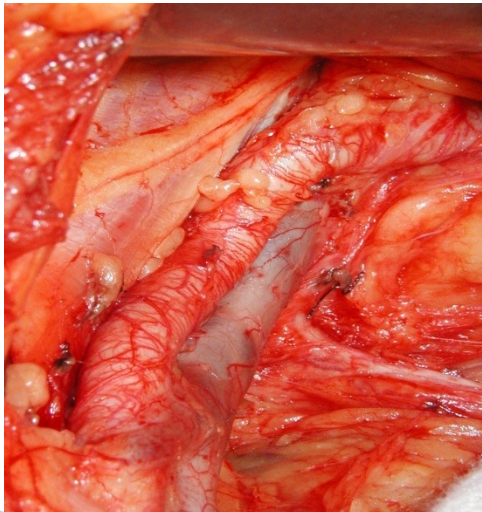
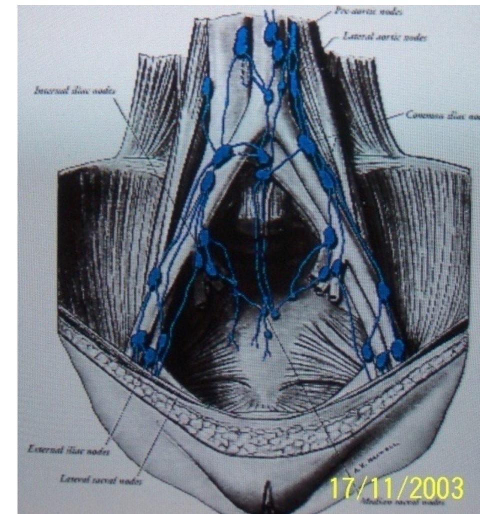
- In CA Penis inguinal node drains into external iliac and common iliac
- It will not drain into internal iliac node
- Hence in iliac dissection external iliac and common iliac nodes to be removed





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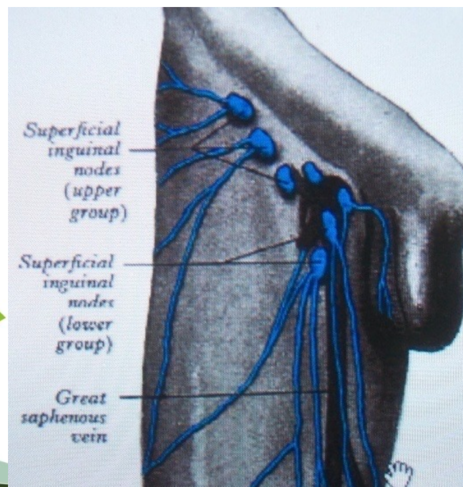
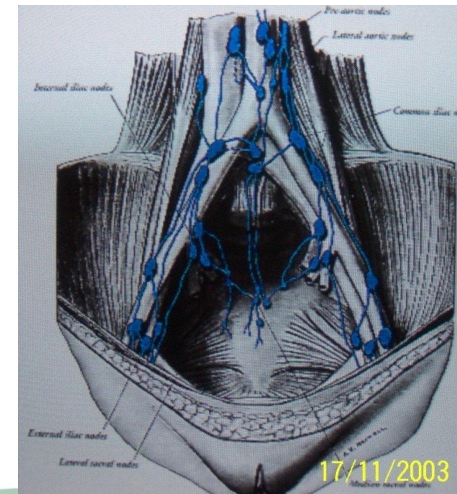
LYMPHATIC DRAINAGE OF PENIS

- Penis & Glans – Superomedial, inferomedial and central zones of inguinal nodes
- Penile skin – Superolateral
- External iliac nodes receive drainage from deep inguinal & External iliac nodes drain into the common iliac nodes





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PRESENTATION

ETIOLOGY OF CA PENIS

- Most of the penile cancers occur in uncircumcised men
- Neonatal circumcision is a potential protection against cancer penis but adulthood or pubertal circumcision are not the same
- Poor hygiene & Irritative effect of smegma are the major risk factors for cancer penis
- HPV may be causative in some cases but not as a potential cause

- **Ulcerative lesion with mobile inguinal node** — EARLY
- **Fixed / Fungating inguinal node** — LATE

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APPROACH

PREOPERATIVE ASSESSMENT

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Order of evaluation

History and physical examination,

Biopsy for confirmation

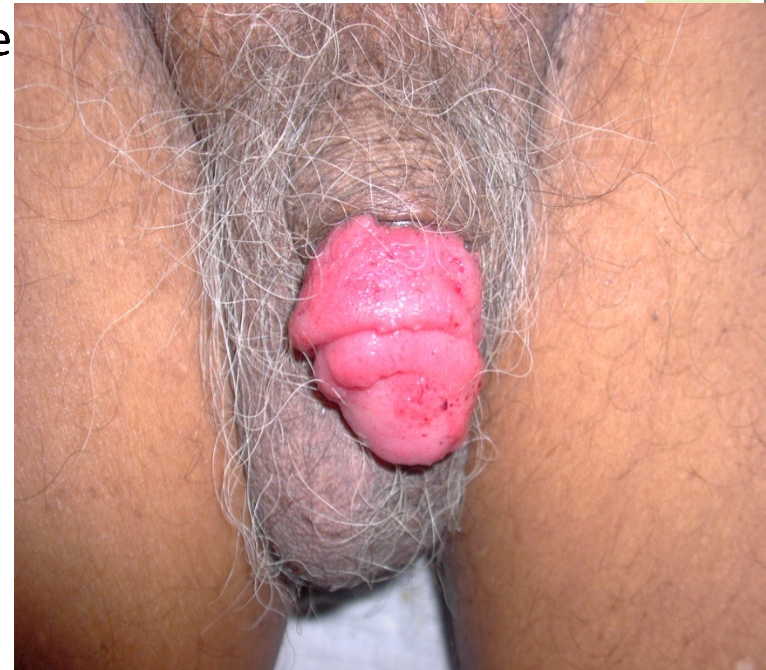
Images for assessing the extent

Stage formulation

Treatment planning in tumour board

BIOPSY

- Wedge biopsy or incision biopsy for infiltrative lesions
- Punch biopsy for exophytic growth
- Biopsy to include area of lesion as well as adjacent normal tissue
- Allows for evaluation of depth of invasion



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CT SCAN

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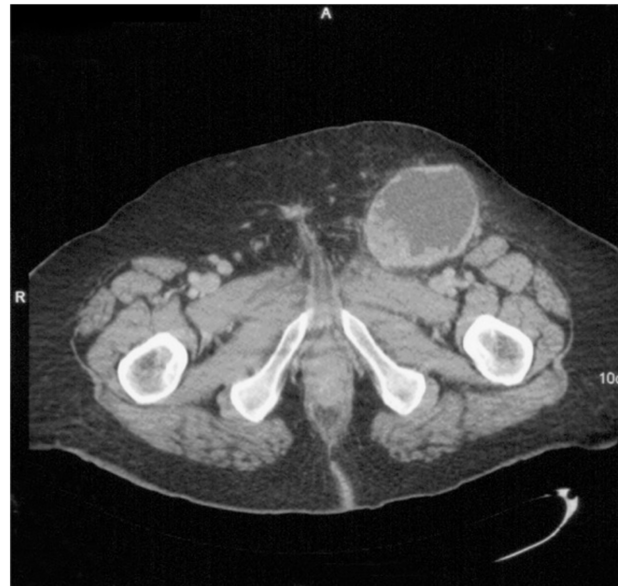
- Assessment of Metastatic nodes
- ? Assessment of distal metastasis – Lung, Liver



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METASTATIC WORK UP

- X ray Chest

(CT scan is not needed)

7% incidence

TNM STAGING

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- Tx – Primary tumor can’t be assessed
- T0 – No evidence of primary tumor
- Tis – Carcinoma in situ
- Ta – Non invasive verrucous ca.
- T1 – Invading subepithelial connective tissue
- T2 – Invading corpus spongiosum or cavernosum
- T3 – Invading urethra or prostate
- T4 – Invading other adjacent structures

TNM STAGING

- Nx – Can't be assessed
- N0 – No regional nodes
- N1 – Single superficial inguinal lymph node
- N2 – Multiple or bilateral superficial inguinal nodes
- N3 – Deep inguinal or pelvic lymph nodes, unilateral or bilateral

M - STAGING

- MX – metastasis cannot be assessed
- M0 – No metastasis
- M1 – Distant metastasis

PREMALIGNANT CONDITIONS OF CA PENIS

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- Leukoplakia
- Erythroplasia of queyrat
- Bowen’s disease
- Balanitis xerotica obliterans
- Buschke lowenstein tumor

ONCO PRINCIPLE

PRIMARY TUMOR MANAGEMENT

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Tumor to be excised with 2 cm clearance by various techniques

- Circumcision
- Wide local excision
- Partial amputation
- Total Penectomy
- Emasculation

INGUINAL NODE

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- If FNAC is positive it is considered as metastatic node, if it is negative it is not considered as non-metastatic node
- If single node positive in inguinal region, the minimal procedure is IIBD of same side and trail superficial block dissection on opposite side and submit for frozen studies.
- In trail dissection if the node is positive in opposite side the dissection converted into IIBD

ADJUVANT TREATMENT

Indication of Radiotherapy :

- If more than one node involvement
- Extra capsular disease
- Node size more than 3 cm

SURGERY - PRINCIPLES

SURGICAL MANAGEMENT - PRIMARY

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- Circumcision
- Wide local excision
- Partial amputation
- Total Penectomy
- Emasculation

CIRCUMCISION

- For lesions confined to prepuce

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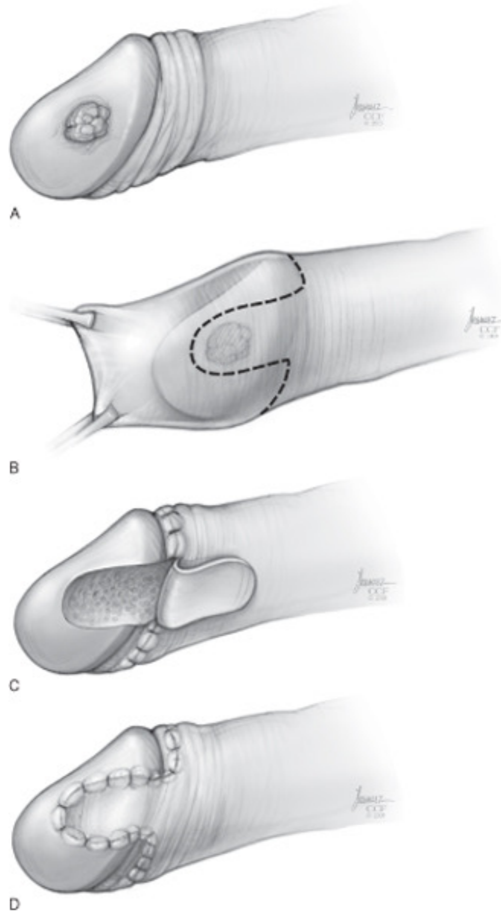
WIDE LOCAL EXCISION



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- Selected cases
  - Tis, Ta & T1
- Organ & function preservation

PARTIAL PENECTOMY

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- Most common surgical procedure for treatment of patients primary SCC

- Penile amputation

  Clearance - 2 cm proximal to the tumor

  Goals - Voiding, Sexual function

  Indication - Upper limit of the tumor is at least 6 cm away from the root of the penis

  2 cm for shaft

  2cm for clearance

  2cm for cutting and suturing

- 2 cm proximal clearance
- Adequate useful stump after clearance (At least 2 cm)
- Reconstruction of external urethral meatus & Reconstruction of Penis

TOTAL PENECTOMY/EMASCULATION

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It is removal of the entire penis and scrotum

- Absence adequate useful stump after partial amputation
- Recurrence after partial amputation
- When bilateral inguinal block dissection is needed

WHY EMASCULATION

- Preserving Testis after removal of target organ without reconstruction
- Ammoniacal dermatitis
- Scrotal edema after nodal dissection or RT

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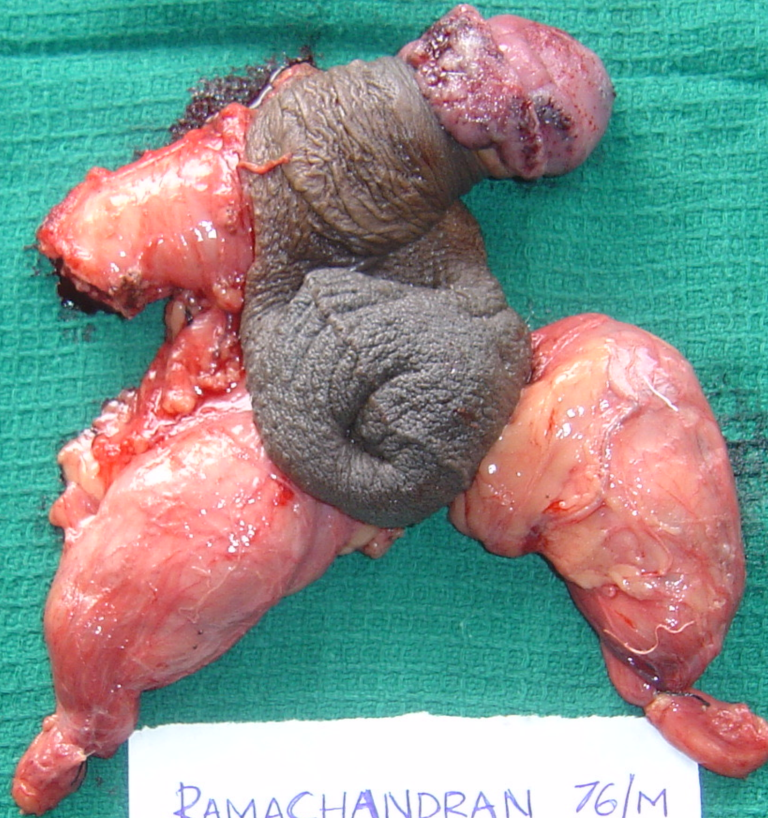
Emasculation Specimen



GURU HOSPITALS

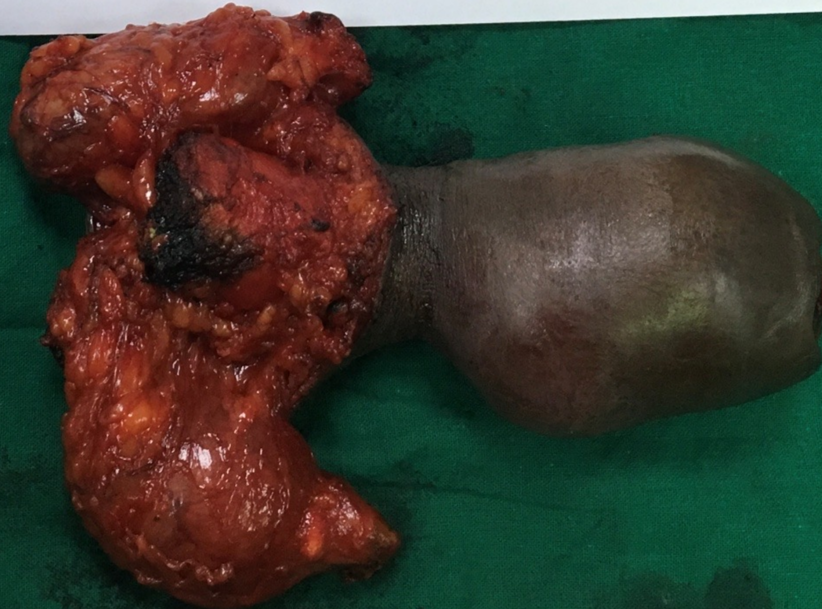
PATIENT NAME : **SHANMUGAIAH 56/ M**

DIAGNOSIS : **CA PENIS**

DATE : **04-01-2017**

PROCEDURE : **TOTAL PENECTOMY WITH BILATERAL ILIO INGUINAL BLOCK DISSECTION**

DOCTOR : **Dr.S.G.BALAMURUGAN & TEAM**



INGUINAL NODE - MANAGEMENT

- SCC on the penis spreads regionally before it spreads distantly.
  - No skip lesions.
- One midline structure can metastasize to either side or bilaterally.
- Metastatic lymph nodes confer a poorer prognosis

AIM OF NODAL DISSECTION

- **Adequate dissection – Optimization**

- Wisely Select the procedure, with minimal complications without compromise the oncological norms

  Comprehensive IIBD associated with complications – Skin necrosis and Lymphedema

  Hence we should limit the dissection based on extent of disease

HOW TO LIMIT THE DISSECTION

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Superficial inguinal dissection

Removal of superficial inguinal nodes

Inguinal dissection

Removal of superficial and deep inguinal nodes

Comprehensive illioinguinal block dissection

Removal of superficial, deep inguinal nodes and Pelvic nodes

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HOW TO ACCESS

EXTENT OF DISEASE

NODAL STATES WITH SIZE

- Micrometastasis – 0.2mm to 2mm
- Normal size node – 1cm
- Size visible by imaging
  and palpable – 1-2cm
- Extracapsular disease – 3cm

NODAL STATES WITH TUMOR BURDEN

- Micrometastasis:
  - Node neither palpable not detected by imaging
- Macrometastasis:
  - Palpable nodes
- Extracapsular spread: (Capsular breach)
  - 3cm node / fixed / with neurovascular deficit
- Fungating node

NODAL STATES WITH TUMOR BURDEN

- Micrometastasis:
  - Prophylactic block dissection (Inguinal)
- Macrometastasis:
  - Comprehensive block dissection (IIBD) +/-RT
- Extracapsular spread: (Capsular breach)
  - Comprehensive block dissection + RT
- Fungating node:
  - Palliative treatment

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NODAL METASTASIS - PATTERN

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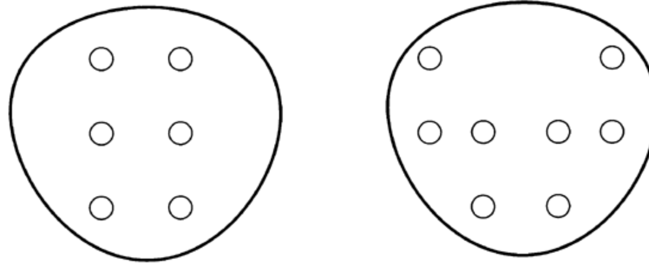
- Nodal metastasis has a patchy distribution & multifocal



ONCOLOGICAL APPLICATION

- Hence FNAC is not an ideal investigation to identify nodal mets

ONCOLOGICAL NORMS

- If FNAC is positive it is considered as metastatic node, if it is negative it is not considered as non-metastatic node
- If single node positive in inguinal region, the minimal procedure is IIBD of same side and trail superficial block dissection on opposite side and submit for frozen studies.
- In trail dissection if the node is positive in opposite side the dissection converted into IIBD

SUSPECIOUS NODE – HOW TO PROCEED

- Wait and watch policy
- Selective dissection - trail superficial block dissection and frozen examination
- Sentinel Node Biopsy

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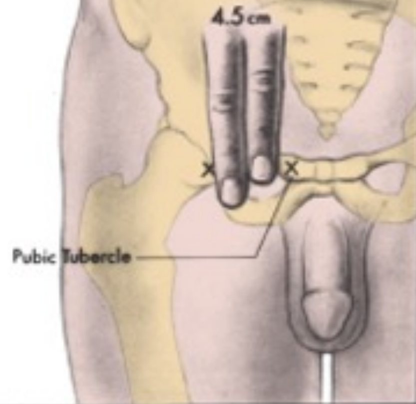

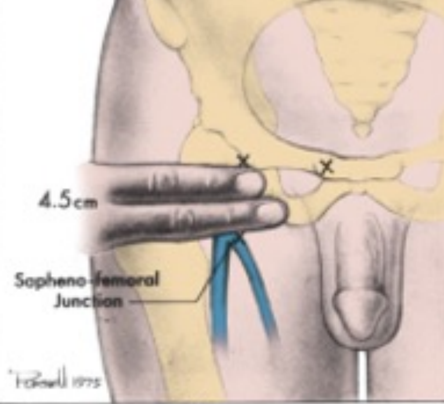

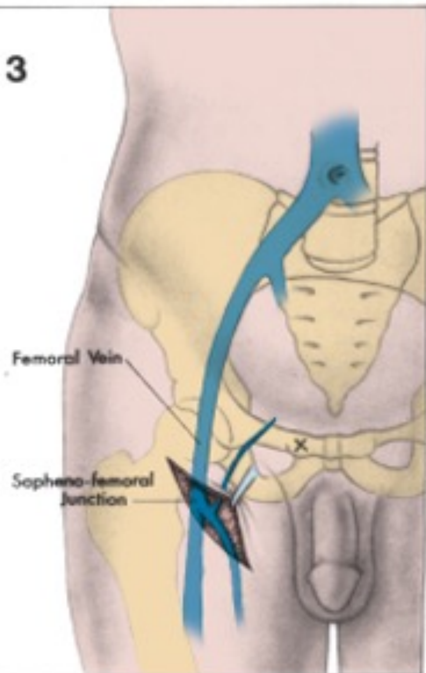

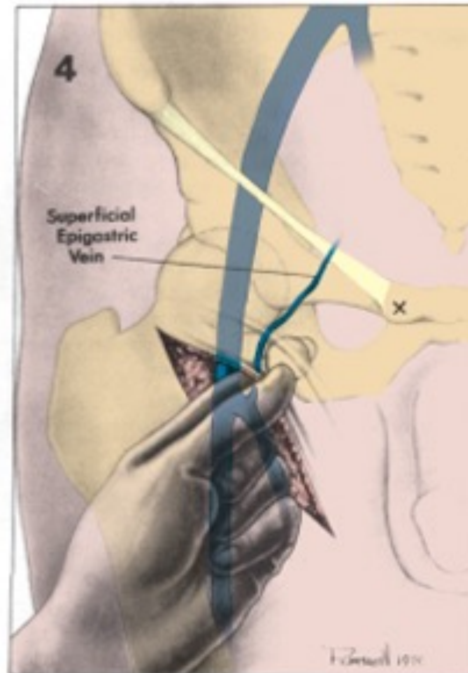

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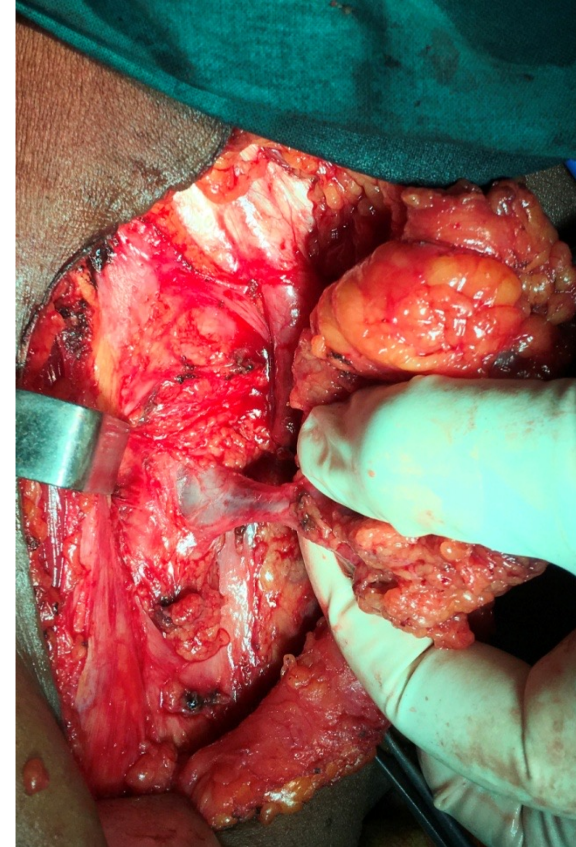
SENTINEL NODE BIOPSY

- First describe by Cabanas in 1977
- Results a have been variable

SUPERFICIAL BLOCK DISSECTION

- Dissection of the superficial
  nodes Superficial to
  femoral vessels in the Femoral
  triangle



FEMORAL TRIANGLE

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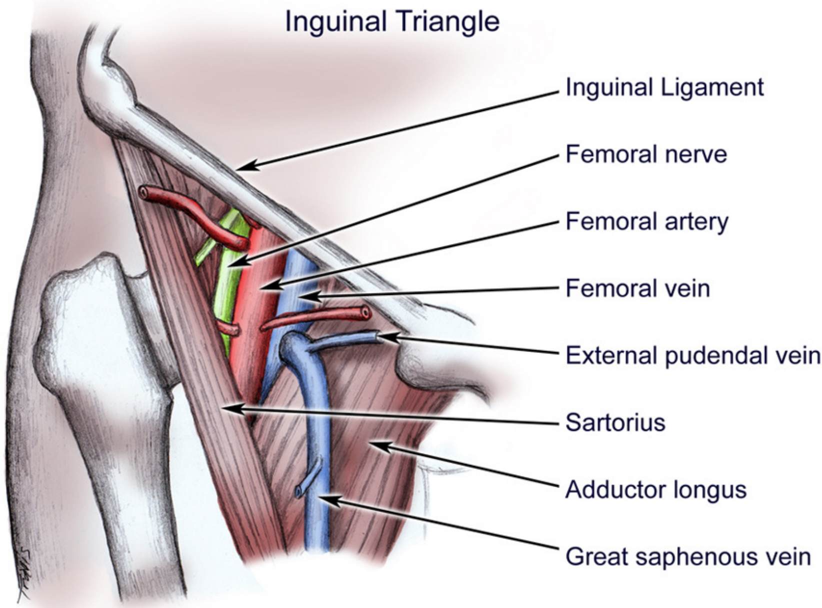
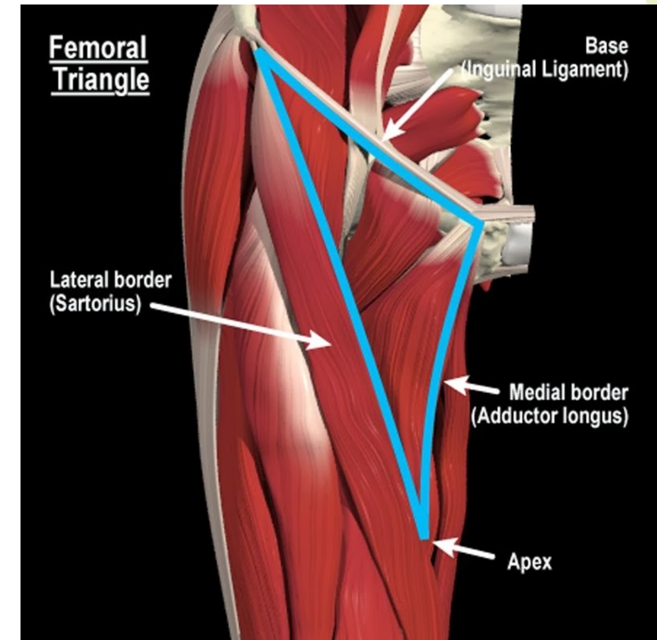
- Femoral triangle:
  - Inguinal ligament – superiorly
  - Sartorius muscle – laterally
  - Adductor longus muscle – medially





INGUINAL BLOCK DISSECTION

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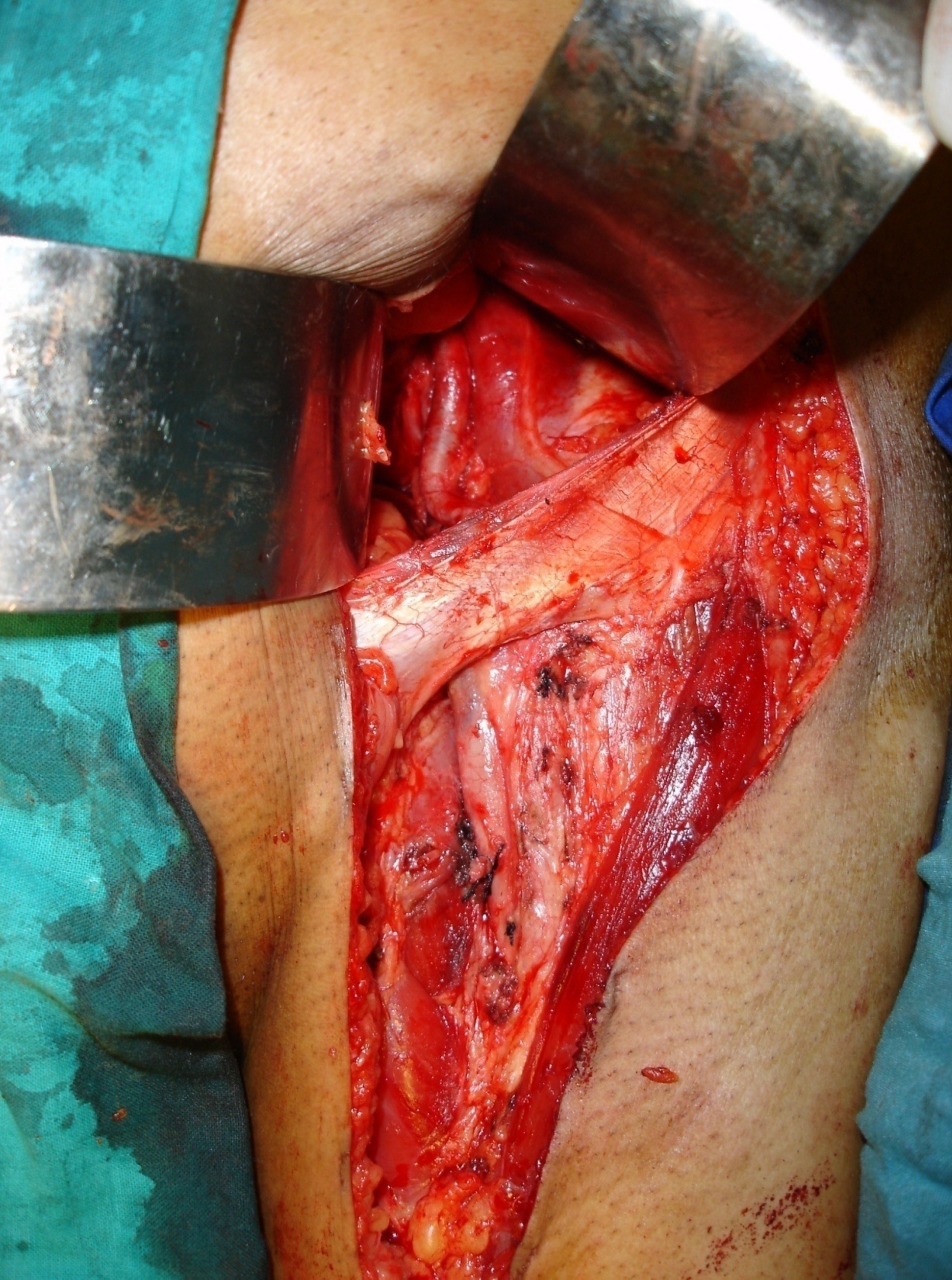
- Removal of the superficial,deep group of lymph nodes

- Boundaries:
  - Medial – medial border of adductor longus
  - Lateral – medial border of sartorius
  - Inferior – apex of the above two muscles
  - Superior – 1cm above the inguinal ligament



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IIBD –Area of Dissection

Superficial, deep inguinal nodes
Distal com. iliac, Ext. iliac,
Int. iliac & Obturator nodes

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IIBD –COMPLICATIONS

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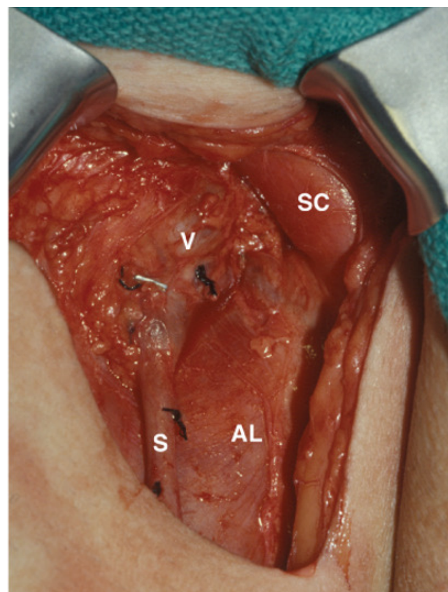
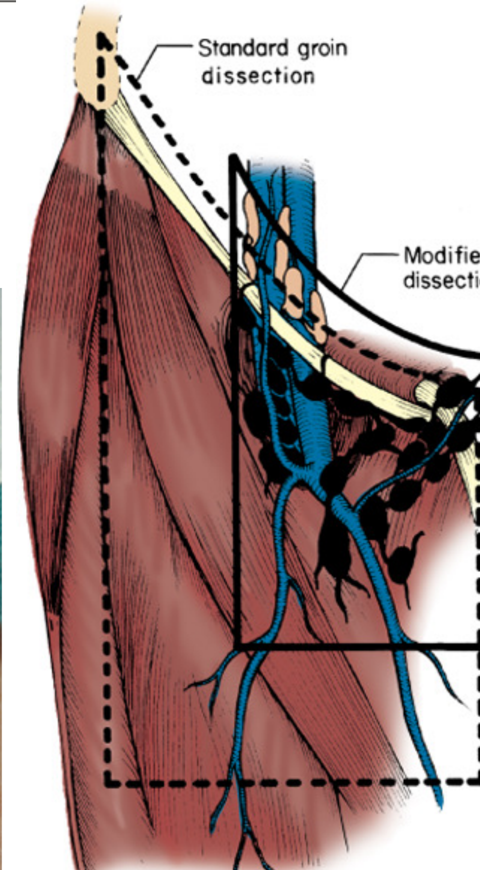
- **Skin necrosis:**
  - Prevented by
    - Oblique inguinal incision
    - Adequate skin flap thickness
    - Care in tissue handling
    - Excision of skin flap margins

- Wound infection
- Seroma
- **Lymphedema**
- Scrotal edema
- Femoral Hernia

MODIFIED INGUINAL LYMPHADENECTOMY

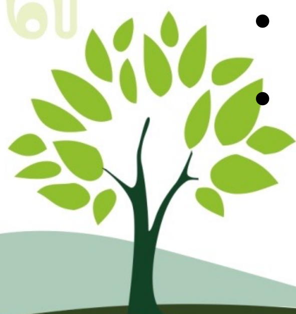




- Catalona 1988
  - Same therapeutic benefit
  - Less morbidity

Key aspects

- Shorter skin incision
- Excludes the area lateral to the femoral artery and caudal to the fossa ovalis
- Saphenous vein preservation
- Elimination of sartorius muscle transposition



MIS- INGUINAL BLOCK

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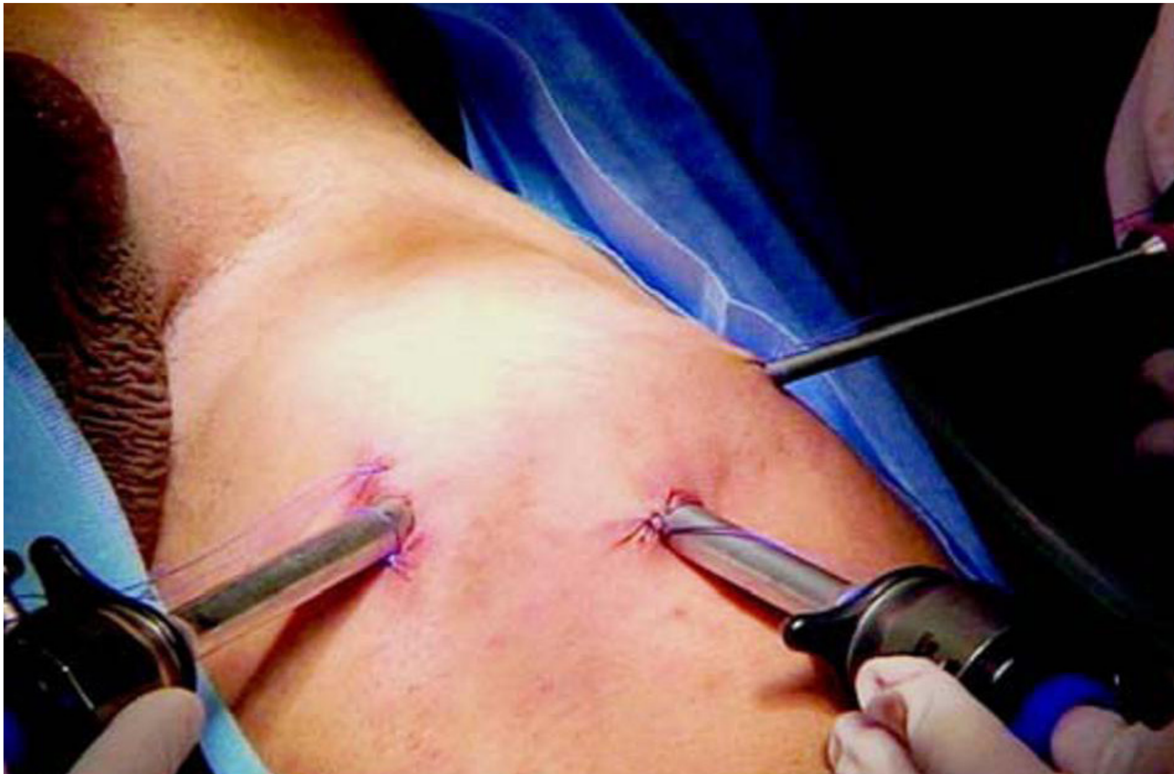
Advantage

Avoiding cutaneous incisions



INGUINAL BLOCK DISSECTION- SCARLESS SURGERY

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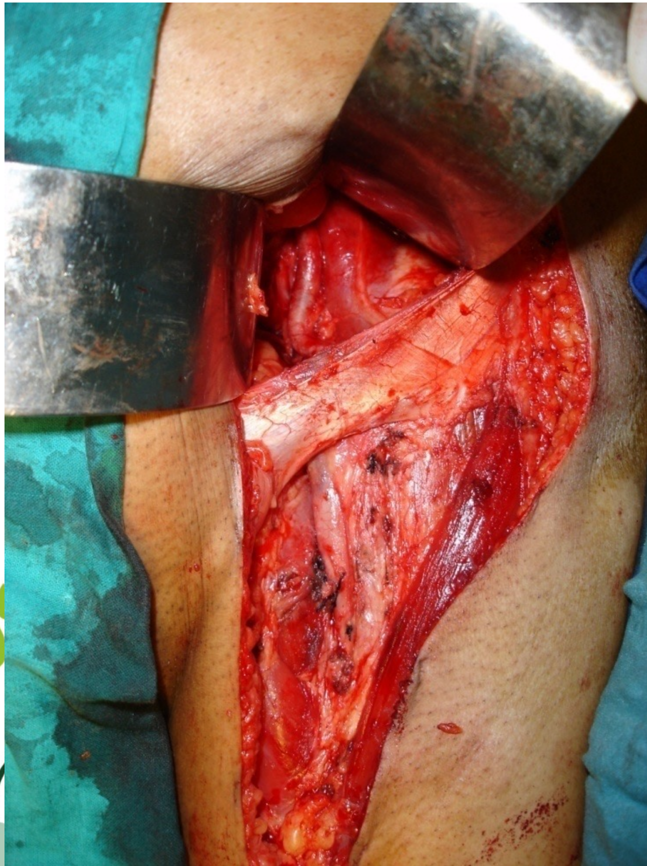

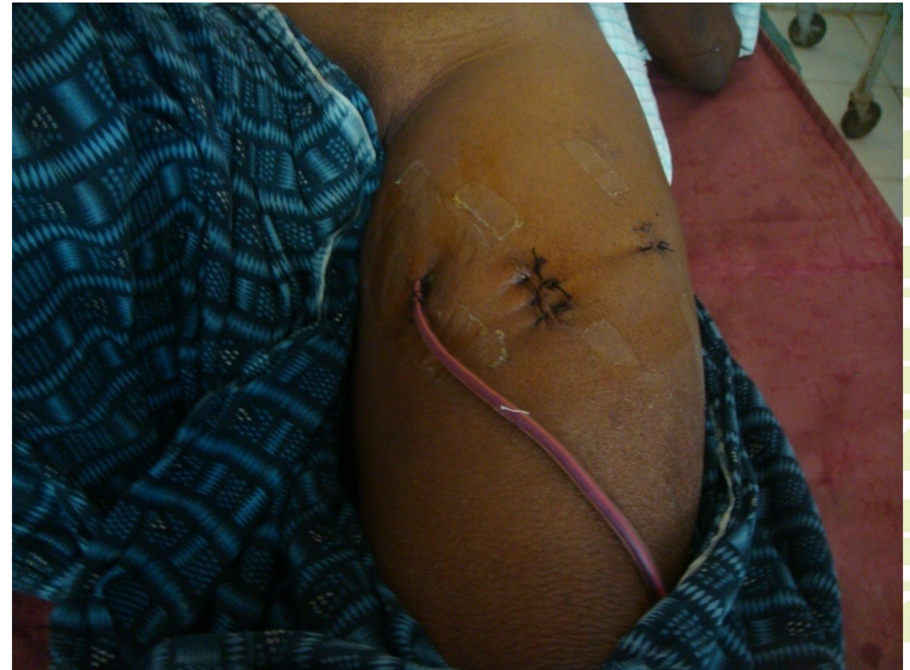

LARGE TO SMALL

IIBD – DISCUSSION RECONSTRUCTION

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- Sartorius Transposition
  - To cover & protect Femoral vessels which are bare

- TFL myocutaneous flap
- Extended TFL flap
- TRAM & VRAM flap

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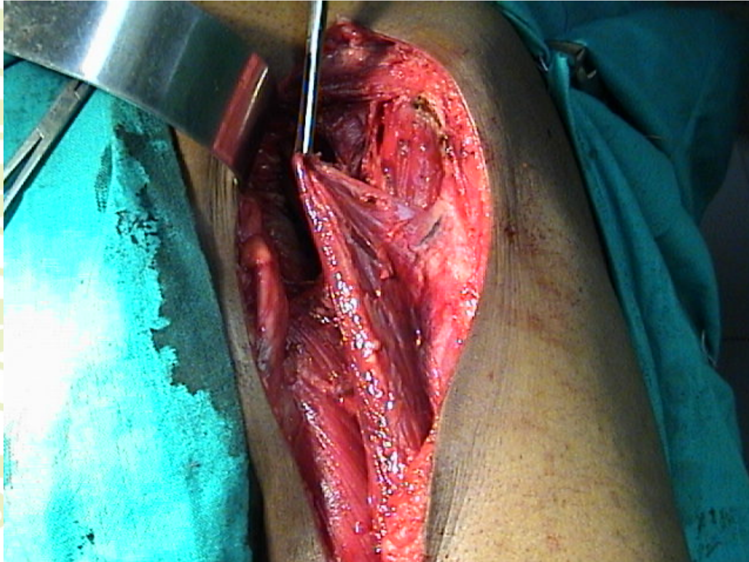
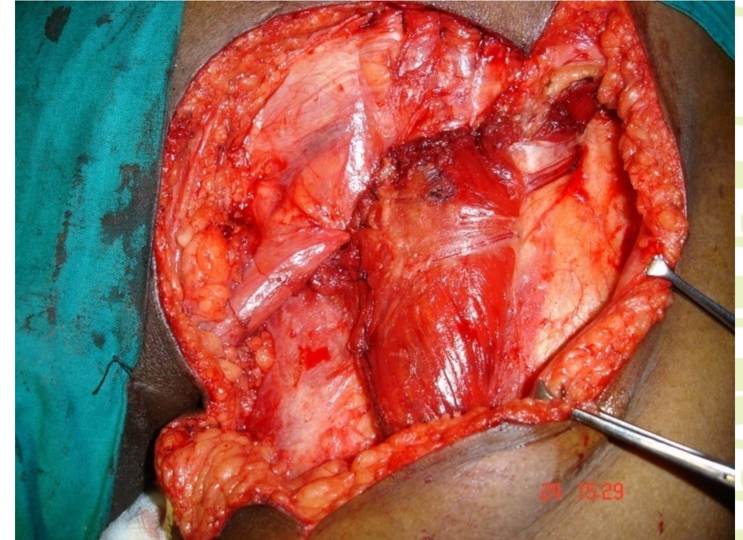
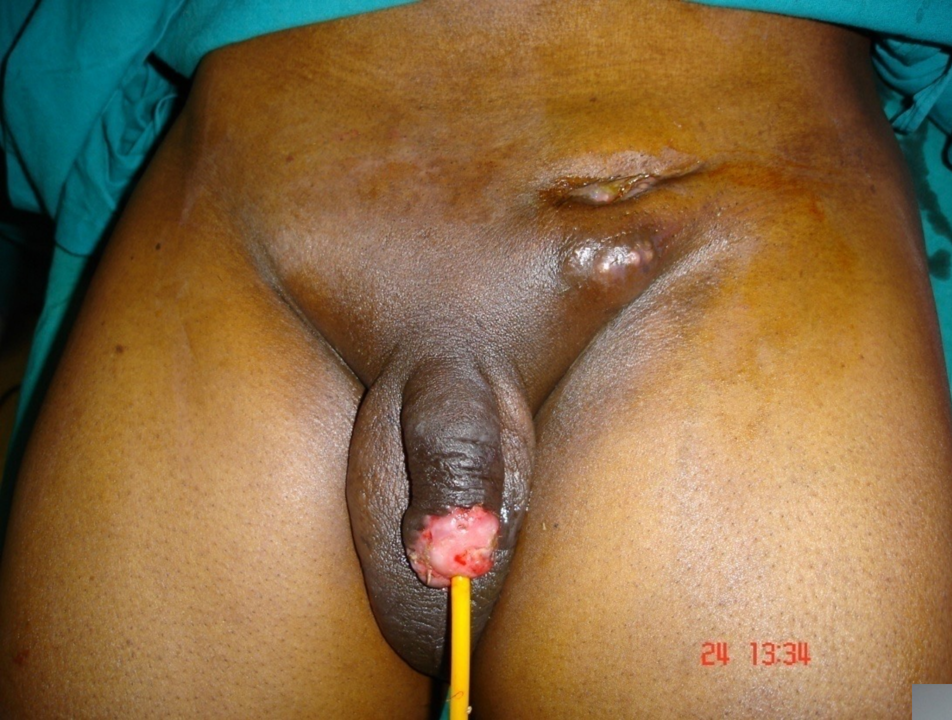
SARTORIUS TRANSFER







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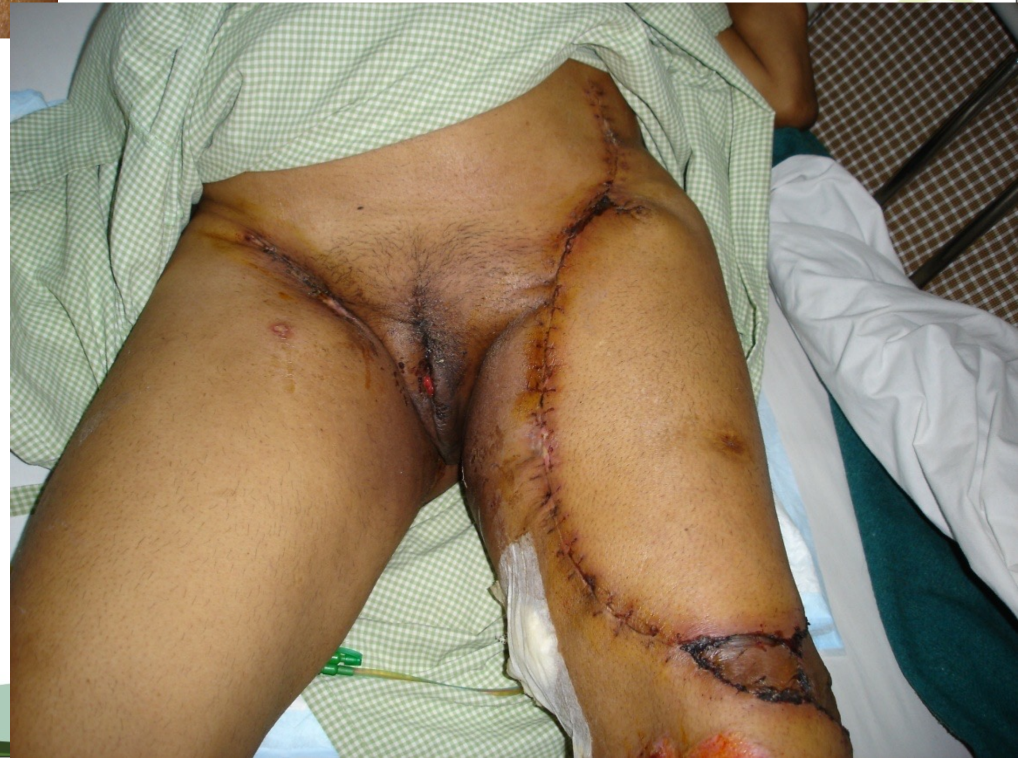
Emasculation,
Left Ilioinguinal block dissection &
TFL flap reconstruction



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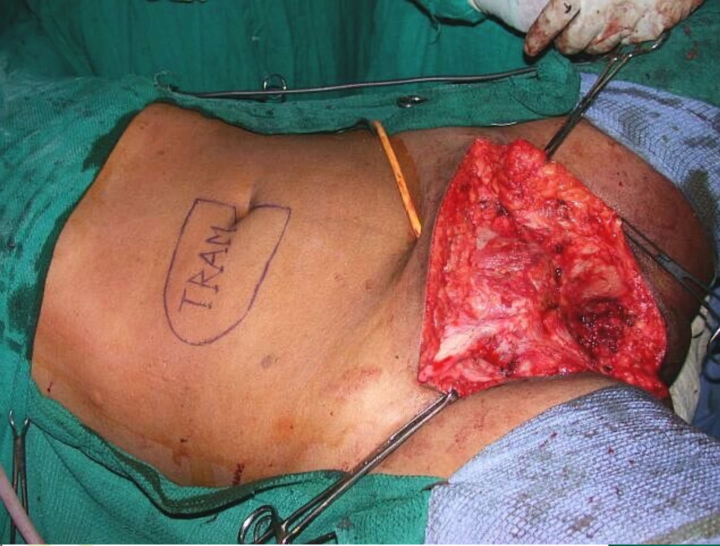
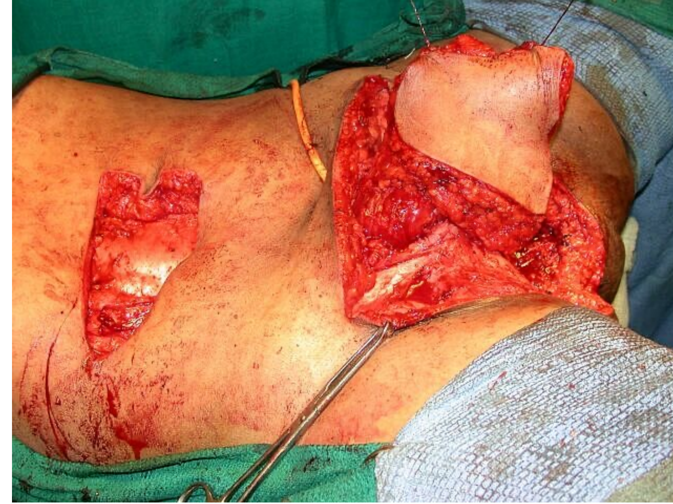
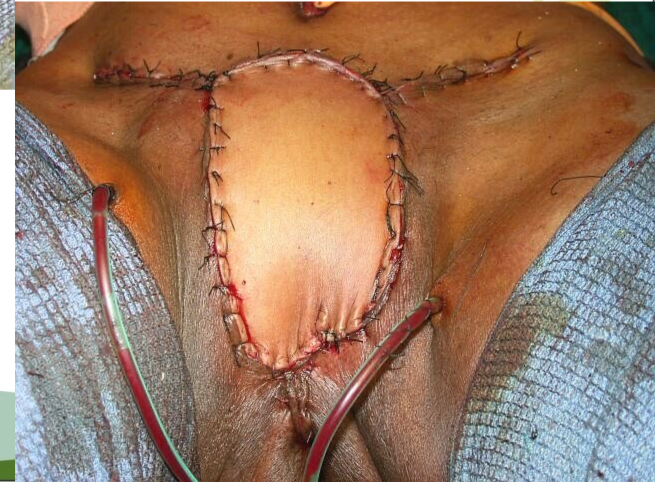
TRAM & VRAM FLAP







PROGNOSIS

- No node involvement – 80%
- Inguinal node involvement – 35%
- Pelvic node involvement – 0%

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KEY POINTS OF PENILE CANCER

- Early surgical management with close follow-up generally provides the best opportunity for cure of penile SCC.
- Include some adjacent normal tissue with the specimen to allow optimal evaluation of the depth of invasion of the cancer during biopsy.
- Partial penectomy with a 2-cm surgical margin remains the most common surgical procedure

KEY POINTS OF PENILE CANCER

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- If FNAC is positive it is considered as metastatic node, if it is negative it is not considered as non-metastatic node
- If single node positive in inguinal region, the minimal procedure is IIBD of same side and trail superficial block dissection on opposite side and submit for frozen studies.
- In trail dissection if the node is positive in opposite side the dissection converted into IIBD

AWARD – HOME MINISTER

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THANK YOU

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அச்சம் வேண்டாம்

புற்றுநோயை அடியோடு அகற்ற முடியும்.