

Trattamenti distruttivi ed escisionali con CO₂ laser

G. Bandieramonte
gaetano.bandieramonte@yahoo.it

Già Istituto Nazionale dei Tumori, Milano

Indications for CO2 Laser Surgery by Lesion sites

Cervix

- Benign Cervicopathy
- Viral Cervicopathy
- CIN ± HPVi

Vagina

- HPVi
- VAIN
- Doubtful pigmented lesions

Vulva

- HPVi
- VIN
- Refractory dystrophic lesions
- Early invasive carcinoma (<1mm)
- Local recurrence of ISCC
- Doubtful pigmented lesions

Oral cavity

- Leukoplakia
- Displasia & CIS

Anus

- HPVi
- Fibropapilloma
- Pigmented lesion
- AIN
- Microinvasive SCC

Penis

- HPVi
- Leucoplasia / Hyperkeratosis
- PIN / CIS
- Early invasive carcinoma
- Doubtful pigmented lesions

Cervical Lesions

Indications for CO₂ Laser Surgery

- Benign Cervicopathy
- Viral Cervicopathy
- CIN ± HPV (Vaporization/Conization)
- Persistent CIN (Re-Conization)

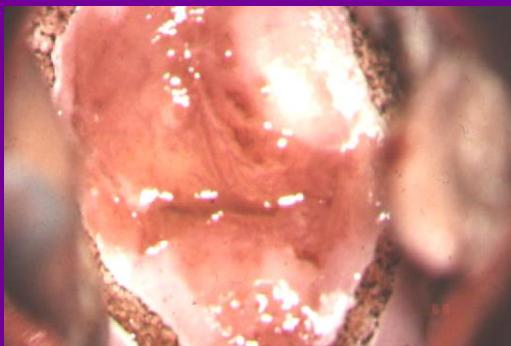
Indications for CIN

- Only for therapy: destructive methods
 - cautery
 - laser vaporization (preferable for vaginal extension)
- For diagnosis & therapy: excisional methods
 - laser resection
 - leep

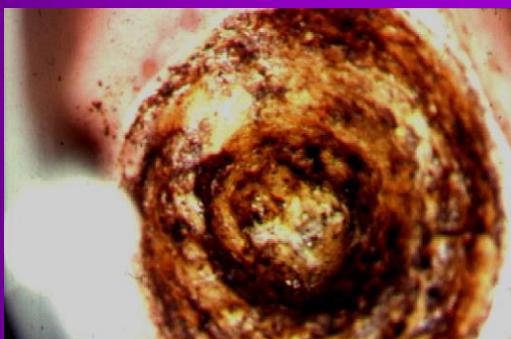
Cervical Lesions

Destructive treatment of CIN: Laser vaporization

1



2



3



Advantages

Out-patient treatment
without anaesthesia
Low hemorrhage
Good aesthetic result
Possibility to treat
infected tissue
Possibility to graduate
the depth of treatment

Disadvantages

High cost of
instrument
Expertise required

Microsurgical Laser conization (Dorsey)

Variants and indications

1. Discoid



Young woman
Upper limit of the
lesion visible

2. Conoid



Upper limit of the
lesion not visible

3. Cylinder



Endocervical disease
Non-young woman
Small cervix

Microsurgical Laser conization (Dorsey)

4. Variante Combinata per CIN eso-endocervicale (resezione centrale+vaporizzazione periferica)



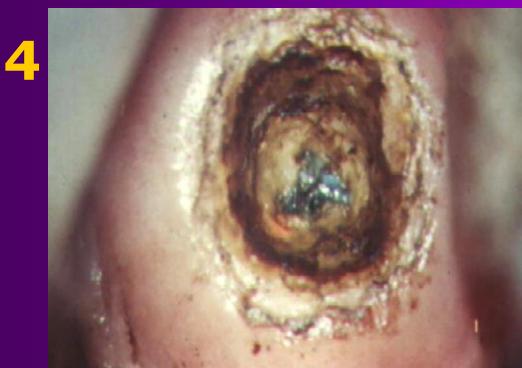
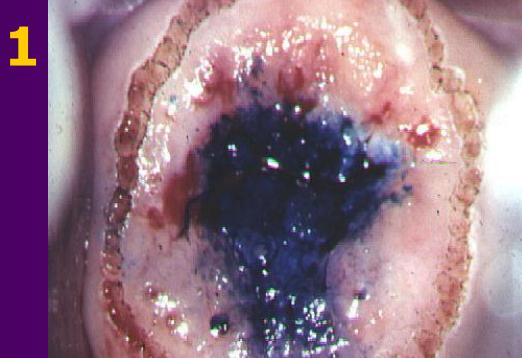
Indicazioni:
ampia estensione
esocervicale
o ai fornici vaginali



Laser Conization Assisted by crypt visualization (Guided),

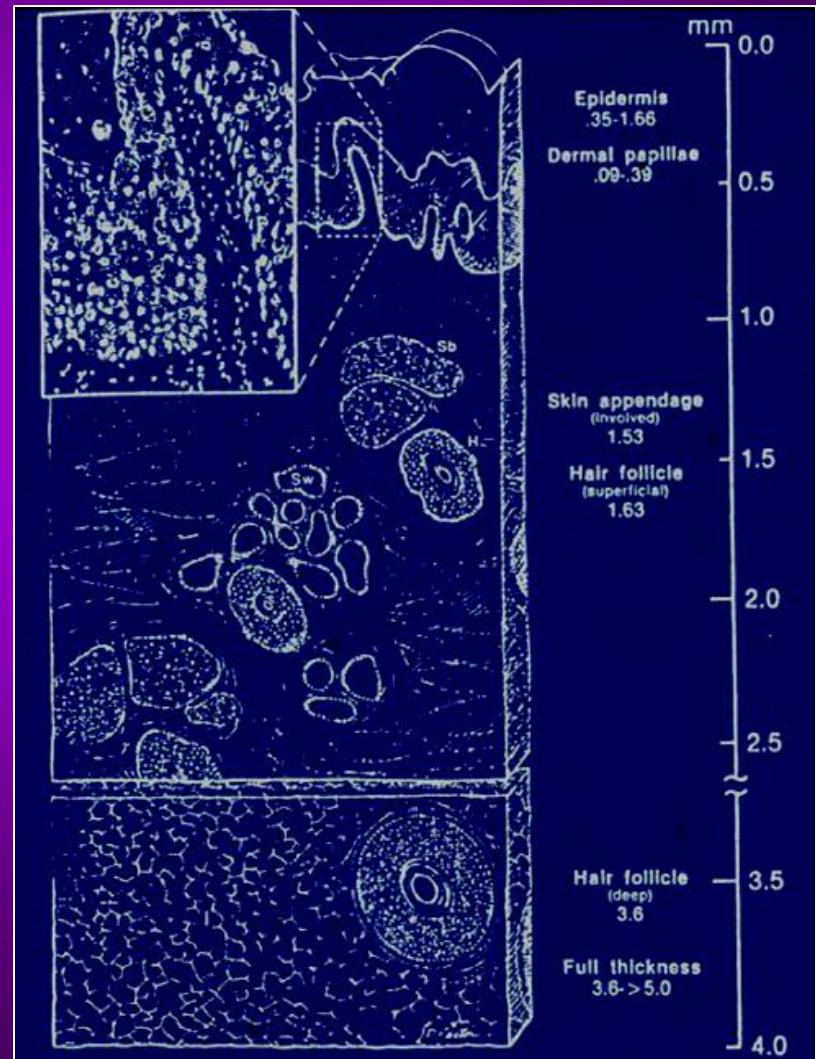
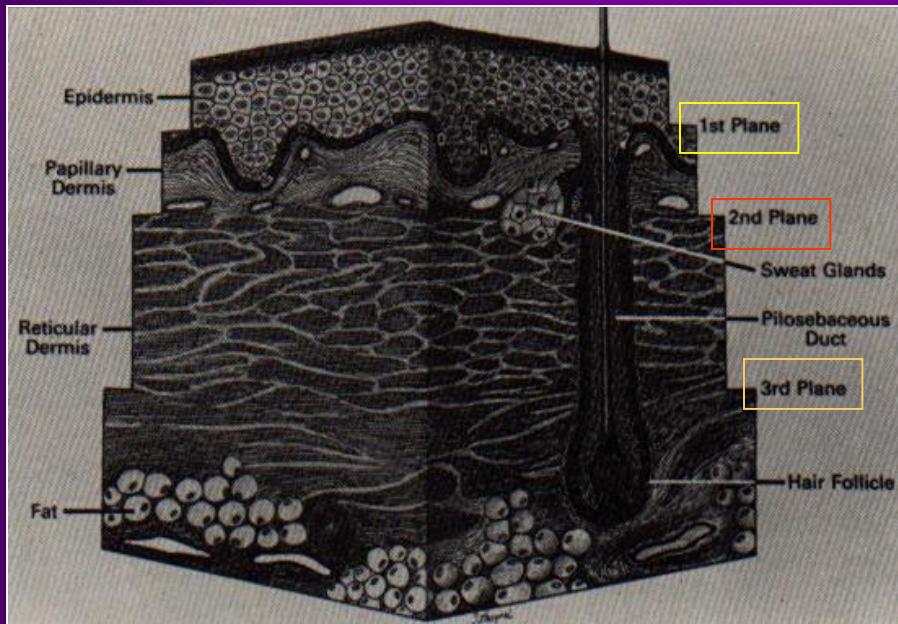
Obstet. Gynecol, 1998

Methylene blue as surgical marker at 2%
concentration, pH 7.4
Inserted into the endocervical canal with cytobrush



Chirurgia laser vulvare

Indications by surgical plane of removal



1st : macular or microflorid HPV

2nd : florid or papular HPV

3rd : VIN

Doubtful pigmented lesion

Refractory dystrophic lesions

4th : Paget's disease

Early invasive carcinoma

Local recurrence of ISCC

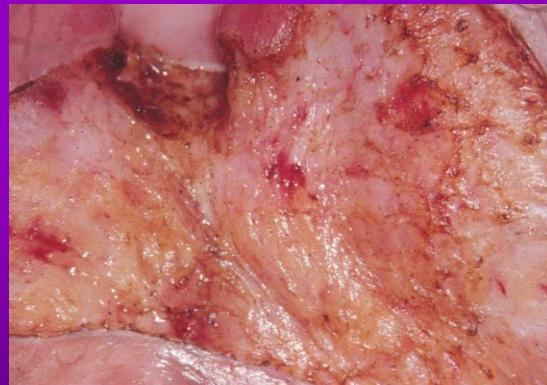
Chirurgia laser vulvare

Laser excisional
treatment of VIN

1



2



3



Chirurgia laser vulvare

White Area

- VIN
- HPV
- Dystrophic lesions

Dystrophic Lesions



Chirurgia laser vulvare

- ♦ Clinical presentation: *dark lesion*
- ♦ Differential diagnosis: *VIN, pigmented lesion*
- ♦ Preoperative histology: *high grade VIN*
- ♦ Treatment plan: *wide laser resection*

Pigmented lesion



Lesions of the urethral meatus

Clinical (Florid) HPV



Ectropion (caruncula)



Lesions of the Vagina

Vaginal CIS (VAIN): alternative treatment

Scalpel (partial or total vaginectomy)

- A. Danger to bowel & bladder
 - B. Bleeding from denuded area
 - C. Discomfort & disfigurement from scar tissue
 1. Radiotherapy (cancericidal dose)
Results in a rigid, inelastic, fibrotic, narrowed,
Shortened vagina
 2. Chemotherapy, 5-FU. Unsatisfactory
 3. Laser
Precise removal
Minimal bleeding
Maintains vaginal functions
Heals by reepithelialization

Vaginal lesions

Destructive treatment by laser vaporization

VAIN of
Posterior
vaginal
fornix,
left view



After
laser
Vaporiz.



Chirurgia laser perianale

Main indications
for laser surgery

- HPVi
- Fibropapilloma
- Pigmented lesion
- AIN
- Paget's disease
- Microinvasive SCC



Chirurgia laser perianale

Perianal *in situ* carcinoma (PAIN)

1



Healing

2



Applicazioni del laser in microchirurgia oncologica per lesioni in sede ano-genitale

Conclusions

- **Expensive machine**
- Maintenance
- Safety precaution
- **Trained surgeon**
- Time consuming in preparation of the machine
- Operating time is longer for inexperienced surgeon
- No touch method (absence of physical contact)
- Less manoeuvrability than scalpel

Disadvantages

Advantages

- excision under microscopic control
- possibility of surgical plane selection
- anatomic conservation (minimally invasive)
- local control of the disease
- cosmetic result