Risk relations between colposcopic findings and histology

Elise de Castro Hillmann, PhD; Omar Moreira Bacha, MD PhD; Djamal Berbiche, PhD

Université de Sherbrooke
Faculté de médecine et des sciences de la santé
Longueuil, QC, Canada

UNIVERSITÉ DE SHERBROOKE

Centre intégré de santé et de services sociaux de la Montérégie-Centre
Québec
Centre de recherche

Disclosures

- Elise de Castro Hillmann and Djamal Berbiche
  - No financial relationships or conflict of interest to disclose
- Omar Moreira Bacha
  - Merck: paid speaker

Introduction

- IFCPC Nomenclature[1] suggests the association of certain colposcopy findings to different grade lesions.

- This study aims to evaluate the risk relations between colposcopy findings and histology.

1. Bornstein, J. *et al.* 2011 colposcopic terminology of the International Federation for Cervical Pathology and Colposcopy. *Obstetrics and gynecology* **120**, 166-172, doi:10.1097/AOG.0b013e318254f90c (2012).

International Federation for Cervical Pathology and Colposcopy
Internationale Federation für Zervixpathologie und Kolposkopie
Federación Internacional de Patología Cervical y Colposcopia
Fédération Internationale de Pathologie Cervicale et Colposcopie

2011 IFCPC Nomenclature[1]

Accepted in Rio World Congress, July 5, 2011

Nomenclature Committee chairman: Jacob Bornstein MD

2011 IFCPC colposcopic terminology of the cervix[1]			
General assessment		• Adequate/inadequate for the reason … (i.e.: cervix obscured by inflammation, bleeding, scar) • Squamo-columnar Junction visibility: completely visible, partially visible, not visible • Transformation zone types 1,2,3	
Normal colposcopic findings		Original squamous epithelium: • Mature • Atrophic Columnar epithelium • Ectopy Metaplastic squamous epithelium • Nabothian cysts • Crypt (gland) openings Deciduosis in pregnancy	
Abnormal colposcopic findings	**General principles**	**Location of the lesion**: Inside or outside the T-zone, Location of the lesion by clock position **Size of the lesion**: Number of cervical quadrants the lesion covers, Size of the lesion in percentage of cervix,	
	Grade 1 (Minor)	Thin aceto-white epithelium Irregular, geographic border	Fine mosaic, Fine punctation
	Grade 2 (Major)	Dense aceto-white epithelium, Rapid appearance of acetowhitening, Cuffed crypt (gland) openings	Coarse mosaic, Coarse punctuation, Sharp border, Inner border sign, Ridge sign
	Non specific	Leukoplakia (keratosis, hyperkeratosis), Erosion Lugol's staining (Schiller's test): stained/non-stained	
Suspicious for invasion		Atypical vessels **Additional signs**: Fragile vessels, Irregular surface, Exophytic lesion, Necrosis, Ulceration (necrotic), tumor/gross neoplasm	
Miscellaneous finding		Congenital transformation zone, Condyloma, Polyp (Ectocervical/ endocervical) Inflammation,	Stenosis, Congenital anomaly, Post treatment consequence, Endometriosis

Methods

- n=912
- Experienced colposcopists (+10y experience)
  - Live colposcopy
    - n=228
    - Hôpital Charles Le-Moyne, QC, Canada
  - Static colposcopic image evaluations [2-5]
    - n=684
    - All photographs were classified as adequate for evaluation
  - All had histology (biopsies+leep)

2. Hammes, L.S., et al., *Value of the International Federation for Cervical Pathology and Colposcopy (IFCPC) Terminology in predicting cervical disease.* J Low Genit Tract Dis, 2007. **11**(3): p. 158-65.
3. Jeronimo, J., et al., *Interobserver agreement in the evaluation of digitized cervical images.* Obstet Gynecol, 2007. **110**(4): p. 833-40.
4. Liu, A.H., et al., *Comparison of Colposcopic Impression Based on Live Colposcopy and Evaluation of Static Digital Images.* J Low Genit Tract Dis, 2016. **20**(2): p. 154-61.
5. Massad, L.S., J. Jeronimo, and M. Schiffman, *Interobserver agreement in the assessment of components of colposcopic grading.* Obstet Gynecol, 2008. **111**(6): p. 1279-84.

Methods

- A multiple regression model
  - All colposcopies findings VS histological diagnosis
  - Number of findings VS histological diagnosis
    - Aceto-white epithelium (Thin or Dense),
    - Punctuation (fine or coarse),
    - Mosaic (fine or coarse),
    - Cuffed crypt (gland) openings,
    - and Atypical vessels

  - CIN II or worse

Results

Table 1. Multiple logistic regression model evaluating the value of each colposcopic finding in predicting the presence of CIN II or worse.

	OR	p	lesion presence n(%)	PPV	NPV
Number of more significant characteristics	**2.10**	**<0.01**	NA	NA	NA
ectopy	1.55	0.35	140(15)	28.57	79.06
metaplasia	0.74	0.13	211(23)	18.01	76.62
atrophy	**0.33**	**0.01**	**67(7)**	**8.96**	**76.82**
erosion	1.68‡	0.30	20(2)	35.00	78.17
Nabothian cysts	1.14	0.66	67(7)	23.88	78.02
Polypes	0.98‡	0.97	14(2)	21.43	77.87
Cervicitis	1.30	0.24	128(14)	25.78	78.48
Difuse colpite	2.45‡	0.05	20(2)	40.00	78.28
Focal colpite	0.22‡	0.14	17(2)	5.88	77.56
Fine Leukoplakia	0.61	0.07	112(12)	15.18	76.89
Coarse Leukoplakia	**2.14**	**0.05**	**31(3)**	**38.71**	**78.47**
Plan Condylome	0.28‡	0.09	27(3)	7.41	77.42
Pappilar condylome	NA	NA	0(0)	NA	NA
thin aceto-white epithelium*	1.22	0.26	225(25)	24.44	78.65
dense aceto-white epithelium*	**6.63**	**<0.01**	**118(13)**	**58.47**	**83.33**
fine pontuaction*	**2.80**	**<0.01**	**45(5)**	**42.22**	**78.93**
coarse punctuation*	1.2‡	0.82	8(1)	25.00	77.9
fine mosaic*	1.33	0.42	45(5)	26.67	78.11
coarse mosaic*	**13.89‡**	**<0.01**	**14(2)**	**78.57**	**76.08**
cuffed crypt (gland) openings*	**2.70**	**<0.01**	**51(6)**	**41.18**	**79.02**
atypical vessels*	0.98‡	0.97	17(2)	35.29	78.13
Lesion exophytic	NA	NA	1(0)	NA	NA
Lesion endophytic	NA	NA	4(0)	NA	NA
Lesion exophytic and endophytic	NA	NA	0(0)	NA	NA

*More significant characteristics

‡ Low finding presence <30(3%)

Discussion

- Not all colposcopic findings represent the same risk of high grade lesions.
- Some findings should be given more attention
  - presence of multiple colposcopic findings
  - Atrophy‡
  - Coarse Leukoplakia
  - Dense aceto-white epithelium
  - Fine punctuation
  - Coarse mosaic *
  - Cuffed crypt (gland) openings
- NPV vs PPV

‡ protection
* low incidence

Discussion

- Leukoplakia vs aceto-white epithelium
  - Static image limitation of difficulty in differentiation?
- Fine vs coarse
  - Do we need to differentiate?
- Multiple regression analysis
  - Adjust model to evaluate different scenarios
  - Improve colposcopy performance

Discussion

- Should we change the IFCPC nomenclature again?
  - NO. At least, not now.

- First,
  - What will be the colposcopy main role in the future? [1]
- Second,
  - Importance of the educational role of the IFCPC nomenclature [1]

1. Schiffman, M. and N. Wentzensen, *Issues in optimising and standardising the accuracy and utility of the colposcopic examination in the HPV era.* Ecancermedicalscience, 2015. **9**: p. 530.

Discussion

- Maybe IFCPC colposcopy recommendations should be focus on:
  - Simplify nomenclature [1]
  - Systematic multiple biopsies [2-4]
  - Triage of invasive lesions
    - Ensure faster histological diagnoses
    - Ensure faster treatment

1. Schiffman, M. and N. Wentzensen, *Issues in optimising and standardising the accuracy and utility of the colposcopic examination in the HPV era.* Ecancermedicalscience, 2015. **9**: p. 530.
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Thank You

Elise de Castro Hillmann
Postdoctoral fellow – Université de Sherbrooke
elise.de.castro.hillmann@usherbrooke.ca
elisehill@gmail.com