

COLPOSCOPIC PICTURES IN CERVICAL INTRAEPITHELIAL NEOPLASIA GRADE III

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SUMMARY

This study concerns 414 women affected by cervical intraepithelial neoplasia grade III. In each case we have considered and compared the colposcopic examination and the cyto-histologic type of lesion.

Ectopy and/or typical transformation prevail in atypical metaplasia. Leukoplakia has its highest incidence in severe dysplasia, is prominent in severe dysplasia and carcinoma *in situ* unless these two lesions are combined atypical metaplasia.

The mosaic prevails in atypical metaplasia, but appears in a prominent form in carcinoma *in situ* only, whereas the punctuation prevails in carcinoma *in situ*.

When the suspect white areas appear in association their incidence in the various CIN III lesions they do not vary. The red suspect areas are rather unfrequent, while the atypical transformation is absent in atypical metaplasia, fairly frequent in carcinoma *in situ* and prevails significantly in microinvasive carcinoma.

Over the last few years several studies have repeatedly dealt with the natural history of cervical carcinoma. They have focused on the so-called precancerous lesions, notably cervical intraepithelial neoplasias grade I - II - III, with significant implications for primary and secondary prevention (^{7, 11, 17, 18}). The latter has achieved its best results since colposcopy was integrated by colposcopy with a consequent progressive decrease in the incidence of false negatives (^{1-6, 8-10, 12-15, 19}).

This study is aimed at assessing the incidence of the colposcopic pictures in lesions falling within the area of the cervical intraepithelial neoplasia grade III, their possible "meaning" and the role of colposcopy in the prevention and early diagnosis of cervical carcinoma.

MATERIAL AND METHODS

We have considered 414 women — age range 18/70 — who came to the Obstetric and Gynecologic Clinic of Padua University between 1971 and 1981, for diagnosed cervical intraepithelial neoplasia grade III.

In each case we have examined and compared the colposcopic examination and the cyto-histologic type. All the cytologic and histologic preparations, obtained by target biopsy, have been re-examined and staged according to the WHO's classification (¹⁶). Atypical metaplasia has been

Table 1. — *Colposcopic pictures observed in CIN III lesions and microcarcinoma.*

| Colposcopic pictures | % | |
|--------------------------------------|-------|-------|
| Ectopy and/or typical transformation | 56 | 13.52 |
| Leukoplakia: flat | 68 | |
| prominent | 21 89 | 21.49 |
| Punctuation | 41 | 9.90 |
| Mosaic: flat | 33 | |
| prominent | 5 38 | 9.18 |
| Combined white areas | 71 | 17.14 |
| Red suspect areas | 17 | 4.10 |
| Atypical transformation | 102 | 24.63 |
| Total | 414 | 100 |

Table 2. — Incidence of colposcopic pictures in CIN III and microinvasive carcinoma.

| Colposcopic pictures | Atypical metaplasia | | Severe dysplasia | | Carcinoma <i>in situ</i> | | Microinvasive carcinoma | | Total | |
|-------------------------------|---------------------|-------|------------------|-------|--------------------------|-------|-------------------------|-----|-------|-------|
| | No. | % | No. | % | No. | % | No. | % | No. | % |
| Ectopy and/or typical transf. | 4 | 33.33 | 21 | 17.79 | 30 | 10.95 | 1 | 10 | 56 | 13.52 |
| Leukoplakia: | | | | | | | | | | |
| flat | 2 | | 32 | | 34 | | | | | |
| prominent | — | 16.66 | 6 | 38 | 15 | 49 | — | — | 89 | 21.49 |
| Punctation | 1 | 8.33 | 5 | 4.23 | 34 | 12.40 | 1 | 10 | 41 | 9.90 |
| Mosaic: | | | | | | | | | | |
| flat | 3 | | 5 | | 25 | | | | | |
| prominent | — | 25 | — | 4.23 | 5 | 30 | — | — | 38 | 9.18 |
| Combined white areas | 2 | 16.66 | 24 | 20.33 | 45 | 16.42 | — | — | 71 | 17.14 |
| Red areas | — | — | 5 | 4.23 | 12 | 4.38 | — | — | 17 | 4.10 |
| Atypical transf. | — | — | 20 | 16.94 | 74 | 27 | 8 | 80 | 102 | 24.63 |
| Total | 12 | 100 | 118 | 100 | 274 | 100 | 10 | 100 | 414 | 100 |

included in CIN III although its classification is still uncertain.

When more than one lesion coexisted the case has been classified on the basis of the most serious, that is the one entailing the highest oncologic risk.

Atypical metaplasia < Severe dysplasia < Carcinoma *in situ*.

Taking account of the presence of both individual and variously combined lesions we have identified 7 groups:

- atypical metaplasia;
- severe dysplasia;
- carcinoma *in situ*;
- severe dysplasia + atypical metaplasia
- carcinoma *in situ* + atypical metaplasia;
- carcinoma *in situ* + severe dysplasia;

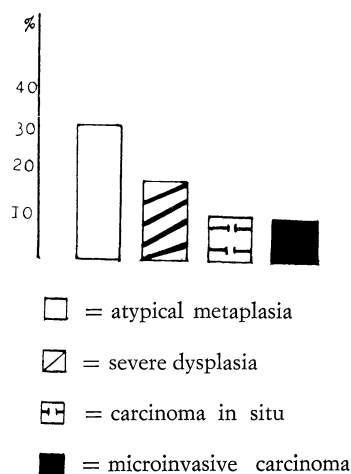


Fig. 1. — Incidence of ectopy and/or typical transformation in CIN III lesion and microcarcinoma.

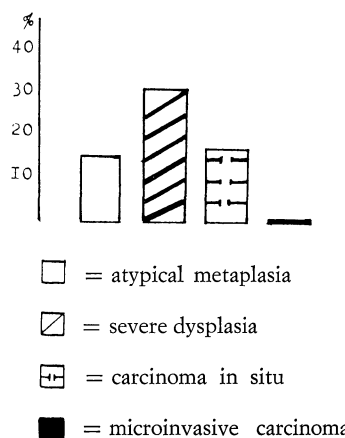


Fig. 2. — Incidence of leukoplakia in CIN III lesions and microcarcinoma.

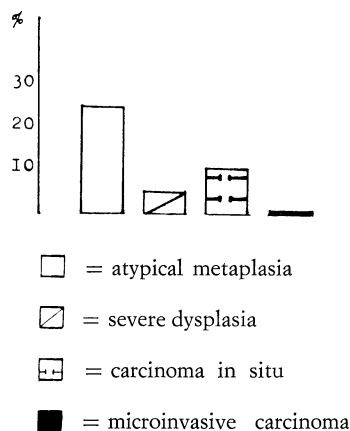


Fig. 3. — Incidence of mosaic in CIN III lesions and microcarcinoma.

— carcinoma *in situ* + severe dysplasia + atypical metaplasia which have been compared with the various colposcopic pictures.

We have also examined 10 cases where the operatory fragment showed characteristics of microinvasive carcinoma in order to see whether the colposcopic picture differed significantly.

RESULTS

Table 1 and 2 show the incidence and distribution of the colposcopic pictures in the various CIN III lesions and microcarcinoma. In 3.52% of cases we have observed ectopy and/or typical transformation, the highest incidence being observed in the atypical metaplasia group (fig. 1).

Leukoplakia — 21.49% — reaches 32.20% in severe dysplasia and appears in a prominent form in severe dysplasia and carcinoma *in situ* but not in atypical metaplasia (fig. 2).

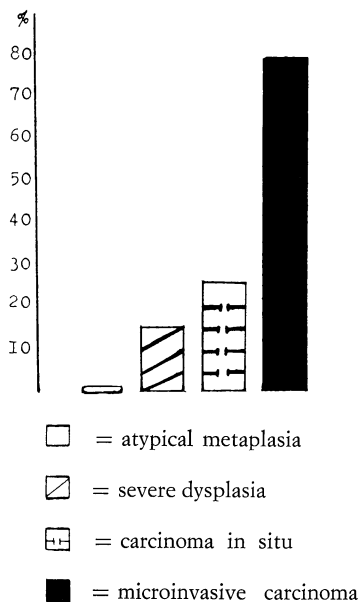


Fig. 4. — Incidence of atypical transformation in CIN III lesions and microcarcinoma.

The punctuation and the mosaic have similar overall incidence (9.90% and 9.18%, respectively); the former prevails in carcinoma *in situ*; the latter in atypical metaplasia but is prominent in carcinoma *in situ* only (fig. 3).

When the white suspect areas are combined (17.14%) the incidence of the various CIN III lesions show no statistically significant difference. Only in 4.10% of cases do red suspect areas appear, 4.23% in severe dysplasia and 4.38% in carcinoma *in situ*.

Table 3. — Incidence of individual and Combined lesions.

| AM | | SD | | CIS | | AM+SD | | MA+CIS | | SD+CIS | | AM+SD+CIS | | Total | |
|-----|------|-----|-------|-----|------|-------|------|--------|------|--------|-------|-----------|-------|-------|-----|
| No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| 12 | 2.97 | 85 | 21.03 | 34 | 8.41 | 33 | 8.16 | 7 | 1.73 | 159 | 39.35 | 74 | 18.31 | 404 | 100 |

AM = Atypical Metaplasia.

SD = Severe Dysplasia.

CIS = Carcinoma *in situ*.

Table 4. — Incidence of colposcopic pictures in individual and combined CIN III lesions and microcarcinoma.

| Colposcopic pictures | AM | | SD | | CIS | | AM+SD | | AM+CIS | | SD+CIS | | AM+DG+CIS | | Microca. | | Total | |
|-------------------------------|-----|-------|-----|-------|-----|-------|-------|-------|--------|-------|--------|-------|-----------|-------|----------|-----|-------|-------|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Ectopy and/or typical transf. | 4 | 33.33 | 15 | 17.64 | 5 | 14.70 | 6 | 18.18 | 1 | 14.28 | 16 | 10.06 | 8 | 10.81 | 1 | 10 | 56 | 13.52 |
| Leukoplakia: | | | | | | | | | | | | | | | | | | |
| flat | 2 | 16.66 | 24 | 35.29 | 4 | 17.64 | 8 | 24.24 | 1 | 14.28 | 19 | 10 | 10 | 13.51 | — | — | 89 | 21.49 |
| prominent | — | — | 6 | 30 | 2 | 6 | — | 8 | — | 1 | 13 | 20.12 | — | 10 | — | — | — | — |
| Punctuation | 1 | 8.33 | 1 | 1.17 | 4 | 11.76 | 4 | 12.12 | 1 | 14.28 | 19 | 11.95 | 10 | 13.51 | 1 | 10 | 41 | 9.90 |
| Mosaic: | | | | | | | | | | | | | | | | | | |
| flat | 3 | 25 | 2 | 2.35 | 2 | 11.76 | 3 | 9.09 | 2 | 28.57 | 12 | 9 | 9 | 12.16 | — | — | 38 | 9.18 |
| prominent | — | — | — | — | 2 | 4 | — | 3 | — | 2 | 3 | 9.43 | — | 9 | — | — | — | — |
| Combined white area | 2 | 16.66 | 18 | 21.17 | 5 | 14.70 | 6 | 18.18 | 1 | 14.28 | 30 | 18.86 | 9 | 12.16 | — | — | 71 | 17.14 |
| Red area | — | — | 3 | 3.52 | 1 | 11.76 | 2 | 6.06 | — | — | 5 | 3.14 | 6 | 8.10 | — | — | 17 | 4.10 |
| Atypical transformation | — | — | 16 | 18.82 | 9 | 26.47 | 4 | 12.12 | 1 | 14.28 | 42 | 26.41 | 22 | 29.73 | 8 | 80 | 102 | 24.63 |
| Total | 12 | 100 | 85 | 100 | 34 | 100 | 33 | 100 | 7 | 100 | 159 | 100 | 74 | 100 | 10 | 100 | 414 | 100 |

AM = Atypical Metaplasia. — SD = Severe Dysplasia. — CIS = Carcinoma *in situ*. — Microca. = Microinvasive carcinoma.

Atypical transformation – that is association of red and white suspect areas – (24.63%) is never observed in atypical metaplasia, appears in 27% of carcinomas *in situ* and 80% of microinvasive carcinomas (fig. 4).

The individual (33.55%) and combined (67.55%) CIN III lesions (tab. 3) have subsequently been compared with the various colposcopic pictures (tab. 4).

Leukoplakia, which prevails in severe dysplasia and is fairly frequent in carcinoma *in situ* has a lower incidence when these two lesions combine with atypical metaplasia and, in this case, it never appear in a prominent form.

On the other hand the incidence of the mosaic increases when severe dysplasia and carcinoma *in situ* combine with atypical metaplasia.

Punctuation, combined white areas and red suspect areas show no significant change. On the other hand, the incidence of atypical transformation reduces when severe dysplasia and carcinoma *in situ* combine with atypical neoplasia.

DISCUSSION

Our data show good correlation and integration between colposcopic picture and cyto-histologic type of lesion.

If we consider the white areas, it appears that leukoplakia has a higher incidence in severe dysplasia (32.20%) whereas the mosaic prevails in atypical metaplasia (25%) as if this picture provided a colposcopic morphology to the initial epithelial changes.

However, both pictures appear in a prominent form only in the two more advanced CIN III lesions, that is severe dysplasia and carcinoma *in situ*, as if the carcinogenic process had somewhat progressed.

On the other hand the atypical transformation prevails in microinvasive carcinoma (80%), is fairly frequent (27%)

in carcinoma *in situ* and absent in atypical metaplasia.

In view of these features, this might be regarded as an “advanced” colposcopic picture entailing a higher risk than the others. We have also observed a fairly high percentage of false negatives, ectopy and/or typical transformation (13.52%) which could partly be explained by the location of the lesions in the cervix that colposcopy can hardly explore completely.

On the other hand a few particular features of the typical proteiform transformation, like “wa drops” and “white rings”, could mirror the hardly detectable beginning of the epithelial lesion.

Hence the usefulness of integrating colposcopy and cytology not only in the diagnostic but also in the screening phase.

BIBLIOGRAPHY

- 1) Burghardt E., Bacai T.: *Minerva Ginec.*, 8, 738, 1956.
- 2) Burke L., Mathews B.E.: *Colposcopy in clinical practice*. Davis Co., Philadelphia, 1977.
- 3) Carrera, Dexeus, Coupez: *Testo-Atlante di Colposcopia*. Piccin Ed., 1977.
- 4) Cartier R.: *Practical Colposcopy*. S. Karger Ed., 1977.
- 5) Carvalho G.: *Rev. Gin. Obst.*, 109, 491, 1961.
- 6) Coppleson M.: *J. Obst. Gyn. Br. Emp.*, 67, 11, 1960.
- 7) Ferenczy M.D.: *Cervical intraepithelial neoplasia. Pathology of the female genital tract*. By Ancel Blaustein. Springer Verlag Ed., New York, 1977.
- 8) Fioretti P.: *Minerva Gin.*, 14, 360, 1962.
- 9) Gerli M., Berlingieri D.: *Minerva Gin.*, 14, 539, 1962.
- 10) Gray L.A.: *Dysplasia, carcinoma in situ and micro-invasive carcinoma of the cervix uteri*. C. Thomas Publ., Springfield, Ill., 1964.
- 11) Koss L.G.: *Epidermoid carcinoma of the uterine cervix and related precancerous lesions. Diagnostic cytology and its histopathologic bases*. Copyright by J.B. Lippincott Co., Philadelphia, Toronto, 1979.
- 12) Lang W.R., Rakoff A.E.: *Obst. Gyn.*, 8, 312, 1956.

- 13) Mestwerdt Moll, Wagner-Kolb, Wespi :
Atlas of colposcopy. W.B. Saunders Co.,
Philadelphia, London, 1981.
- 14) Mossetti C., Russo A.: *La colposcopia nella
diagnostica ginecologica*. Minerva Medica
Ed., 1963.
- 15) Palmer R.: *Rev. Franç., Gynec.*, 56, 745,
1961.
- 16) Remotti G., De Virgiliis G.: *Annali Ost.
Gin. Med. Perin.*, 95, 109, 1979.
- 17) Richart R.M.: *Clin. Obst. Gyn.*, 10, 745,
1967.
- 18) Richart R. M.: *Clin. Obst. Gyn.*, 10, 748,
1967.
- 19) Thompson B.H., Woodruff J.R., David H.
J.: *Am. J. Obst. Gyn.*, 114, 329, 1972.