

# PROGNOSTIC FACTORS IN CERVICAL CARCINOMA

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## SUMMARY

Primary surgical treatment in cervical carcinoma offers an unrepeatable chance to assess the biologic characteristics of the neoplasia by surgical staging and pathologic examination of the surgical specimen. The detection of factors of risk for locoregional diffusion, clinical staging being equal, can guide a subsequent target radio-treatment by identifying a group of patients at higher risk for relapses. The analysis of 155 cases of cervical carcinoma treated with radical primary surgery and pelvic lymphadenectomy at the Gynecologic Institute of Padua University has stressed the statistically significant correlation ( $P < 0.05$ ) existing between lymphatic diffusion and presence of neoplastic cells in capillary-like spaces, degree of neoplastic cervical infiltration and parametrial diffusion.

According to the Authors the presence of these features is a reliable basis to select patients eligible for post-surgery radiotreatment.

The FIGO staging system for cervical carcinoma, though offering useful prognostic grading of the disease by identifying progressive steps of neoplastic differentiation, has proven to be inadequate to identify the various therapeutical categories (<sup>1</sup>). FIGO stage Ib, notably, includes a wide series of lesions, ranging from microscopic neoplasia infiltrating into the cervix for more than 3 mm to tumours of 3-4 cm involving the whole cervix. In the most advanced stages the index of pathologic correction (<sup>2,3</sup>) of FIGO staging explains why results reported in the literature for each individual stage vary so widely even when the same treatment has been performed. It is also worth noting that a pathological finding of lymphnodal metastases accounts for 20/50% prognostic worsening versus patients free from lymphnodal metastases (<sup>4,5,6,7</sup>).

Within the same stage prognostic factors related to the neoplastic biologic features can be detected which are preferential predictors of diffusion, particularly for lymphotrophy, and are directly related to the incidence of local relapses and loco-regional metastases.

Among these factors the most important are the following:

- 1) tumour volume (<sup>8</sup>);
- 2) depth of stromal invasion (<sup>9,10</sup>);
- 3) histologic grading (<sup>9,11</sup>);
- 4) invasion of vascular spaces (<sup>9,10,12</sup>).

As many treatment schemes envisage meta-surgical radiotherapy only in cases liable of relapsing, serial examination of the surgical piece is a fundamental step in evaluating ways and means of diffusion and biologic characteristics of a neoplasia.

## MATERIAL AND METHODS

This study concerns 155 patients affected by cervical carcinoma and treated with radical surgical therapy at the Obstetric-Gynecologic Institute of Padua University between 1974 and 1982.

Table 1.

FIGO stage	No. cases
I a	9
I b	67
II a	14
II b	46
III a	3
III b	13
Unclassified	3
Total	155

Table 1 shows the distribution of the series according to stage.

At the intervention selective pelvic lymphadenectomy guided by lymphography and/or intraoperative palpation was performed in all patients. The examination of the surgical specimen gave the following prognostic parameters: histologic grading classified as G1 = well differentiated; G2 = moderately differentiated; G3 = undifferentiated.

Degree of cervical infiltration classified as M1 = infiltration of the inner cervical third; M2 = infiltration of the middle third; M3 = infiltration of the outer cervical third.

Evaluation of neoplastic diffusion to parametrium.

Estimation of the degree of invasion of vascular spaces.

The examined histopathologic characteristics have been related to the presence of lymphnodal metastases. Correlations have been studied statistically.

## RESULTS

Table 2 shows the correlation between histologic grading and lymphatic diffusion.

Table 2. — *Relation between histologic grading (G) and lymphnodal metastases (N).*

	G1	G2	G3	Total
N+	3 (12)	8 (19)	17 (20)	28
N—	23 (88)	34 (81)	67 (80)	124
Total	26	42	84	152

$\chi^2 = 1.014$  non-sign.  $P > 0.05$

The statistical analysis does not show significant correlation between lymphnodal metastases and neoplastic differentiation.

In our series the histologic grading fails to predict loco-regional diffusion. Table 3 shows the correlation between degree of cervical infiltration and lymphnodal metastases.

Table 3. — *Relation between cervical infiltration (M) and lymphnodal metastases (N).*

	M1/M2	M3	Total
N+	2 (3)	26 (29)	28
N—	63 (97)	64 (71)	127
Total	65	90	155

$\chi^2 = 15.28$  sign.  $P < 0.05$

The examined series shows statistically significant correlation between degree of cervical infiltration and presence of lymphatic diffusion. Table 4 illustrates the correlation between parametrial infiltration and lymphatic diffusion. The statistical analysis shows parametrial invasion to be correlated to a statistically significant increase in lymphnodal infiltration.

Table 4. — *Relation between lymphatic diffusion (N) and parametrial infiltration (P).*

	P+	P—	Total
N+	14	14	28
N—	17	110	127
Total	31	124	155

$\chi^2 = 17.00$  sign.  $P < 0.05$

Table 5 reports the correlation between the finding of neoplastic invasion of vascular spaces and lymphatic diffusion.

This index is statistically significantly correlated to the presence of lymphnodal invasion.

Table 5. — Relation between neoplastic invasion of vascular spaces (VS) and lymphatic diffusion (N).

	VS+	VS—	Total
N+	7	21	28
N—	3	124	127
Total	10	145	155

$\chi^2 = 15.5$  sign.  $P < 0.05$

Finally table 6 reports the analysis of the correlation between neoplastic histologic grading and cervical infiltration.

Table 6. — Relation between grading (G) and neoplastic cervical infiltration (M).

	M1	M2	M3	Total
G1	7	8	12	27
G2	10	11	23	44
G3	18	13	53	84
Total	35	32	88	155

$\chi^2 = 4.624$  N.S.  $P > 0.05$

The two examined parameters show no statistically significant correlated changes.

## CONCLUSIONS

The study of our results enables us to identify in cervical carcinoma prognostic factors which can integrate surgical staging in providing guidelines for therapeutical schemes. The degree of stromal infiltration, the presence of neoplastic cells in vascular spaces and parametrial neoplastic infiltration entail significantly higher risks

of lymphatic involvement. In particular, the presence of the first two factors can be useful to identify a group of stage Ib patients at higher risk for loco-regional relapses for whom post-surgery radiotherapy may be advisable. Furthermore special attention must be paid to primary surgery in cervical carcinoma as this first therapeutical step can guide subsequent supplementary therapies. Examination of the surgical piece enables us to select patients at risk and exclude those for whom, on the basis of risk factors, post-surgery radiotherapy can be regarded as overtreatment.

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