SHORT REPORT

Distribution of cervical glandular intraepithelial neoplasia: are hysterectomy specimens sampled appropriately?

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Aims: To establish the validity of assuming that by examining midline blocks from the anterior and posterior lips of the cervix, a previously unsuspected cervical intraepithelial glandular neoplasia (CIGN) lesion would be identified.

Methods: The distribution of CIGN in 30 cone biopsy specimens of cervix was examined.

Results: Nine low grade and 21 high grade cases were identified involving one or other lip in 29 patients and one or both lateral edges in 20. The distribution of CIGN was unifocal in 20 patients, involved two distinct foci in nine, and three distinct foci in one. Only three patients had a circumferential distribution. Midline disease, either CIGN or squamous cervical intraepithelial neoplasia (CIN), or both, was present in 27 patients.

Conclusion: These findings suggest that examining the midline blocks from hysterectomy specimens will result in the identification of CIGN lesions in over 90% of patients, either because the CIGN lesion is present in the midline or because an associated squamous CIN lesion will be identified, which will result in the examination of the entire cervix, with the consequent identification of the CIGN lesion.

Traditionally, two midline blocks of cervix, one from the anterior and one from the posterior lip, have been examined histologically in hysterectomy specimens removed for non-malignant conditions. A previous publication has indicated that this protocol allows over 90% of cases of squamous cervical intraepithelial neoplasia (CIN) to be detected.¹

This study assessed the value of assuming that by examining midline blocks from the anterior and posterior lips of cervix, previously unsuspected cervical glandular intraepithelial neoplasia (CIGN) will be detected.

METHODS

Thirty cone biopsy specimens of cervix, including large loop excisions of the transformation zone and cold knife biopsy specimens, were examined. The specimens had been serially sectioned beginning at one lateral edge using the method of Foote and Stewart.² This method provides a consistent representation of the transformation zone, including the squamocolumnar junction, as opposed to the radial method of sampling, where this area is often under represented at the lateral three and nine o'clock positions. Although neither method invariably provides strictly midline blocks, the presence, type, and grade of abnormality can be determined at the 12 and six o'clock positions with reasonable accuracy. The slides were reviewed and the involvement of the various anatomical sites in the cervix, one or both lips, and one or both lateral edges was recorded for each patient. Because photographic records were not available for every patient, it was not

possible to define precisely the position at which the glandular neoplasia was present. To allow comparison with other studies, the number of quadrants involved by CIGN was determined and the number of foci demonstrating CIGN was also recorded. A case was considered to be multifocal only if the areas of CIGN were separated by two complete cervical blocks that showed no evidence of CIGN. This was based on the assumption that if two normal blocks separated glandular lesions, contiguous spread via the complex cryptal structure of the cervix could be discounted.^{3,4} The presence of midline disease equating to the 12 and six o'clock positions and associated squamous CIN was also recorded.

RESULTS

The results are summarised in table 1. Nine cases were low grade and 21 were high grade CIGN lesions. CIGN affected one or other lip of the cervix in 29 of the 30 patients studied and involved one or both lateral edges in 20. The CIGN was unifocal in 20 patients, but two distinct foci were identified in nine and three distinct foci were present in one case. Although CIGN involved four quadrants in 13 patients, the disease was only truly circumferential in three because at least one tissue block showed no evidence of a CIGN lesion in the remaining 10. There was an associated squamous CIN lesion in 20 patients. Chi squared testing showed no evidence of significant differences in the distribution of CIGN when the two grades of disease were compared with each of the above parameters. CIGN, CIN, or both, located at positions equating to the midline were present in 27 patients. In 17 patients it was possible to obtain an adequate smear, none of which showed evidence of dyskaryosis. Only inadequate smears were received in two other patients.

DISCUSSION

"Cervical intraepithelial glandular neoplasia was associated with squamous intraepithelial neoplasia in 20 patients, the grade of lesion in the two types of intraepithelial neoplasia being concordant in 11 patients and discordant in nine"

This is the first paper in which the frequency with which CIGN is identified in the midline of the cervix was assessed. CIGN was present in the midline in 16 patients but associated squamous CIN was present in 11 more. Thus, an epithelial abnormality, squamous or glandular, would have been identified in over 90% of these patients if only the midline blocks

Abbreviations: CIGN, cervical intraepithelial glandular neoplasia; CIN, cervical intraepithelial neoplasia

Table 1 The involvement of the various anatomical sites of the cervix in 30 cone biopsy and loop excision specimens with CIGN depending on the highest grade of CIGN identified anywhere on the cervix

	Highest grade of CIGN			p Value
	Low grade	High grade	Total (all grades)	
One cervical lip	4	2	6	p=0.4
Both lips	1	3	4	
Both lateral edges	0	1	1	
One lip and one lateral edge	0	2	2	
Both lips and one lateral edge	3	6	9	
Both lips and both lateral edges	1	7	8	
	9	21	30	
Number of foci demonstrating CIGN				p=0.2334
1	8	12		
2	1	8		
3	0	1		
Number of quadrants involved by CIGN				p=0.34
1	4	3		
2	2	4		
3	1	3		
4	2	11		
Associated squamous CIN				p=0.62
None	2	8		
Low grade	4	6		
High grade	3	7		
Midline disease				p=0.0005
None	0	3		
CIGN	6	10		
Squamous CIN	3	8		

CIGN, cervical intraepithelial glandular neoplasia; CIN, cervical intraepithelial neoplasia.

had been examined, a figure comparable to that seen previously with squamous lesions.¹ In most of the cases examined the CIGN involved a single focus, although this single focus could be extensive involving, on occasion, more than three quarters of the surface area of the specimen. Nine cases involved two foci and only one involved three distinct foci on the surface of the cervix. These findings reflect the results of previous studies, which have shown that although CIGN has the potential to be multifocal, it is mainly unifocal, although the single focus may be very extensive.⁵⁻⁶ The extensive nature of CIGN is reflected in the number of quadrants that may be involved, regardless of whether the disease is confined to low grade CIGN or whether there is also evidence of high grade type disease.⁴⁻⁷

CIGN was associated with squamous intraepithelial neoplasia in 20 patients, the grade of lesion in the two types of intraepithelial neoplasia being concordant in 11 patients and discordant in nine. Associated squamous CIN and on occasion squamous cell carcinoma has been described in association with most of the cases of CIGN reported in the literature.⁴⁻⁷

These findings confirm that by examining midline blocks from the anterior and posterior lip of a routine hysterectomy specimen most cases of CIGN will be identified, either because the CIGN is located at this position or because there is an associated squamous lesion involving the midline blocks. This is because CIGN is commonly associated with squamous CIN, which has a propensity to involve the midline, and as a result additional cases of CIGN, some of them high grade, will be identified when the cervix is blocked out to delineate the extent and type of squamous CIN, which has been identified incidentally in the midline blocks from the hysterectomy cervix.

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Take home messages

- Examining the midline blocks from hysterectomy specimens appears to result in the identification of cervical intraepithelial glandular neoplasia (CIGN) lesions in more than 90% of cases
- This is because either the CIGN lesion is present in the midline or because an associated squamous CIN lesion will be identified, which will result in the examination of the entire cervix, with the consequent identification of the CIGN lesion

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