

Chapter 10

Avoiding errors in the colposcopic assessment of the cervix and colposcopic provisional diagnosis

- A thorough knowledge of anatomy, pathophysiology and natural history of diseases of the female genital tract is essential to avoid errors in colposcopic assessment.
- Strict adherence to a diagnostic protocol and an awareness of the limitations of colposcopy are equally important.
- Regular interaction with the pathologists and clinical audits help to improve the quality of colposcopy.
- We encourage arriving at a provisional diagnosis, based on the colposcopic findings.

An adequate knowledge of pathophysiology and understanding of the natural history of diseases of the female genital tract that can be diagnosed with the colposcope and then treated are essential for satisfactory performance of colposcopy. A thorough knowledge of instrumentation, methods of examination and terminology is equally important. A high degree of accuracy in diagnosing cervical intraepithelial neoplasia (CIN) and ruling out invasive cancer may be achieved with good clinical judgement. Scrupulous adherence to a diagnostic protocol and awareness of the limitations and pitfalls of colposcopy are important.

Errors are commonly committed due to a lack of awareness and to deviation from established colposcopic protocol and practice. Good training, experience, an innate interest, and an established diagnostic algorithm will diminish the possibility of errors. These factors are particularly important in low-resource environments, where there are limited opportunities for mutual consultations and continuing education. The colposcopist should try to achieve the same degree of accuracy as a histopathologist can achieve with cervical conization specimens.

A summary of common sources of shortcomings in colposcopic practice is presented in Table 10.1. Regular interaction with the pathologist and clinical audits, to correlate colposcopic diagnoses with histological diagnoses, helps to improve the quality of colposcopy. It is important for the provider to learn the art of

taking colposcopically directed biopsies from appropriate area(s) in the transformation zone by using sharp biopsy forceps without crushing specimens. If the squamocolumnar junction is hidden in the endocervical canal, it is necessary to perform endocervical curettage (ECC) or cone biopsy in order to investigate the canal properly. It is obligatory to wait for 60 seconds after a liberal application of acetic acid for it to take full effect. Specific mention should be made of the location of the squamocolumnar junction and the acetowhite areas in relation to the junction. Careful inspection of the vagina should also be made for any extension of cervical lesions. It is best to examine the vagina when the speculum is being withdrawn at the end of each examination. Findings must be clearly and legibly documented. Using an objective scoring system such as Reid's score (Appendix 5) is particularly helpful for beginners to arrive at a colposcopic diagnosis and to select appropriate sites for directed biopsies. Continuing education is important to enable the colposcopist to keep up with developments. Avoidance of missing or undertreating an invasive cancer and ensuring the provision of adequate treatment is largely dependent on the skills of the colposcopist.

Colposcopic provisional diagnosis

We strongly encourage the colposcopists to make a provisional diagnosis, based on the findings of

Table 10.1: Common sources of colposcopic errors

Inadequate training and experience
 Inadequate understanding of the natural history of disease
 Failure to use an established diagnostic protocol or deviation from the protocol
 Failure to use the largest speculum possible
 False squamocolumnar junction caused by abrasion
 Failure to choose appropriate biopsy sites and failure to take enough biopsies
 Failure to take a biopsy when in doubt
 Using a blunt, non-sharp biopsy punch to obtain tissue specimens
 Failure to take a colposcopically directed biopsy
 Failure to perform biopsies from condylomata or leukoplakia
 Failure to wait for the full effect of acetic acid
 Failure to apply Lugol's iodine solution and examine
 Failure to examine the endocervical canal adequately when the lesion limit or squamocolumnar junction is not seen
 Failure to do endocervical curettage (ECC) when the lesion limit is not seen
 Failure to perform excision when the lesion limit is not seen with an endocervical speculum or when ECC is equivocal or positive
 Failure to perform excision when microinvasion is suspected
 Failure to inspect the vagina and vulva
 Failure to properly and legibly record colposcopic findings
 Failure to communicate with the pathologist
 Failure to correlate histological and colposcopic findings
 Failure to consult experts in difficult cases
 Failure to keep up with continuing education
 Failure to self-audit

Adapted from: Popkin (1995)

colposcopic examination. The provisional diagnosis may be in terms of normal, inflammation, leukoplakia, condyloma, low-grade CIN, high-grade CIN, early invasive cancer, overt invasive cancer, others (atrophy, cervical polyp, radiation changes, etc.) and

inconclusive. Such diagnosis is based on the evaluation of all the findings such as the characteristics of the acetowhite areas, vascular features, colour change after iodine application, surface characteristics such as ulceration, and other signs such as bleeding on touch, the nature of cervical and vaginal discharge and the findings of examination of external anogenitalia, groin and lower abdomen. These are described in detail in Chapters 6-9. Once a provisional diagnosis is made, a plan for management of the condition diagnosed should be developed. Table 10.2 provides a summary of the colposcopic findings that help in making the provisional diagnosis.

Table 10.2: A summary of colposcopic features guiding provisional diagnosis

Diagnosis	Acetowhitening			Duration of effect	Vascular features	Iodine uptake	Bleeding on touch	Ulceration	Discharge
	Colour tone	Demarcation	Margin						
Normal	-	-	-	-	Normal vascular pattern	Squamous epithelium black in colour; columnar epithelium, no change in colour	Nil	Nil	Clear secretion from the columnar epithelium
Normal, immature metaplasia	Pinkish white, or snow white, translucent, patchy acetowhite areas	Nil	Indistinct, blends with the rest of the epithelium	Smooth; crypt openings, islands of columnar epithelium seen	Normal vascular pattern	No or partial uptake	Nil	Nil	Clear secretion from the columnar epithelium
Normal, mature metaplasia	Light pinkish white hue. No confluent acetowhite area	Nil	Blends with the rest of the epithelium	Smooth, reveals crypt openings, nabothian follicles	Normal vascular pattern	Takes up iodine, turns black or brown	Nil	Nil	Clear secretion from the columnar epithelium
Inflammation	Pale, patchy areas, with intervening red areas and/or necrotic areas	Nil	Indistinct, blends with the rest of the epithelium	Irregular, variegated appearance	Diffusely distributed, fine red punctation involving cervix and vagina	Partial iodine uptake	May be present	May be present	Malodorous, profuse, mucopurulent or seropurulent or non-odorous thick, sticky, white discharge
Low-grade CIN	Moderately dense, shiny, opaque, thin lesions	Well demarcated confluent lesions	Irregular, feathery, jagged, digitating, angular or geographic	Flat, smooth or microcondylooma -tous or micropapillary	Fine punctation and/or mosaic with in the AW lesion may be seen	No uptake	Nil	Nil	Nil

Table 10.2 (cont.): A summary of colposcopic features guiding provisional diagnosis

Diagnosis	Acetowhitening			Duration of effect	Vascular features	Iodine uptake	Bleeding on touch	Ulceration	Discharge	
	Colour tone	Demarcation	Margin							Surface
High-grade CIN	Dull, dense, greyish-white or oyster-white opaque lesion	Well demarcated confluent lesions; internal demarcations and borders may be present	Regular, smooth outlines; occasionally may be raised and rolled out	Less smooth, more irregular and/or occasionally nodular surface	Restricted to TZ, abutting the SCJ	2-4 minutes	Coarse punctation and/or coarse mosaic within the AW lesion may be seen; atypical vessels may be seen (+)	No iodine uptake	May be present in severe lesions	Nil
Preclinical invasive cancer	Chalky white, thick, dense, opaque lesions	Well demarcated	Raised and rolled out margins	Irregular, nodular or mountains- and-valley pattern	May involve the entire cervix, large complex lesions obliterating the os	> 3 minutes	Coarse raised mosaics and/or breaking mosaics and/or, coarse punctations; atypical vessels always present (++++)	No iodine uptake	Surface bleeding/-oozing common	May be seen
Overt invasive cancer	Dense white areas, may be obliterated by profuse bleeding	Entire cervix replaced by growth	Entire cervix replaced by growth	Ulceroproliferative growth	Entire cervix replaced by growth extending to adjacent tissues	Whiteness usually obliterated by bleeding	Atypical vessels always present (++++)	No uptake, but bleeding obliterates iodine uptake patterns	Profuse bleeding	Always present

TZ: transformation zone ; SCJ: squamocolumnar junction; AW: Acetowhitening