



Congenital Transformation Zone Mimicking Cervical Premalignant Lesion

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Abstract

Introduction Congenital transformation zone (CTZ) of the uterine cervix is a non-neoplastic, rare condition resembling high-grade lesions on colposcopic examination which leads to diagnostic dilemmas.

Case Description

A multiparous woman was screened for cervical cancer. Visual inspection using acetic acid was positive for which further evaluation with colposcopy was done. An aceto-white lesion resembling high-grade precancerous condition was seen. Punch biopsy was taken from multiple areas and the histopathology report demonstrated chronic cervicitis with increased maturation of the superficial layers of squamous epithelium. The lesion persisted on the follow-up colposcopy even after a course of antibiotics.

Discussion CTZ could be difficult to differentiate from cervical premalignant lesions. The main aim of this article is to help other colposcopists to understand this physiological variant.

Conclusion The CTZ is a physiological entity and differential diagnosis for cervical premalignant lesions on colposcopy.

Keywords Congenital transformation zone · Differential diagnosis of cervical intraepithelial neoplasia · Colposcopy

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Introduction

Congenital transformation zone (CTZ) of uterine cervix is a non-neoplastic rare condition which is defined as abnormal squamous epithelium with immature deep layers and excessively matured superficial layers [1]. It appears as an aceto-white lesion of high-grade nature on colposcopic examination. Although non-neoplastic in nature, it often creates a diagnostic dilemma during colposcopy examination as it may be interpreted as a cervical intraepithelial neoplastic lesion. There is very little literature on CTZ. We present a case of CTZ mimicking cervical premalignant lesion on colposcopy that would add to the learning curve of colposcopists.

Case Description

A 34-year-old multiparous woman visited the screening clinic with complaints of white discharge on and off for 8-month duration. Her menstrual cycle was regular (5/30 days). She was married for 18 years and do not have

any other comorbidities. No significant family history of any serious illness was reported.

With aseptic precautions, per speculum examination was done. The cervix was healthy with minimal white discharge. Pap smear, Human papillomavirus (HPV) DNA testing and visual inspection of the cervix with acetic acid (VIA) were carried out in the same sitting. The VIA test was positive with dense aceto-white lesion with raised margins occupying the entire cervix (circumoral lesion). On further evaluation with a colposcopy examination, the cervix was adequate; the squamocolumnar junction was partially visible with type 2 transformation zone. After the application of 5% acetic acid, a dense aceto-white lesion covering the entire cervix appeared rapidly. The margins were raised and distinct. Fine mosaic features were seen between 11–1 o'clock positions (Fig. 1a). The same areas showed patchy iodine uptake after the application of Lugol's iodine (Fig. 1b). All these being features of a high-grade lesion with the Swede score of 8, punch biopsy was taken from the multiple areas. The histopathology was reported as chronic cervicitis with increased maturation of the superficial layers of the squamous epithelium (Fig. 2). The Pap smear was negative for intraepithelial lesion or malignancy (NILM), and the HPV DNA test (Hybrid Capture 2 assay, Qiagen) was also negative for high-risk HPV. She was treated with a course of antibiotics and recalled after 2 months. The lesion was found to persist on follow-up colposcopy without any alteration in the lesional characteristics.

Discussion

The epithelialization process of the vagina and the ectocervix of the uterus from cuboidal epithelium to the squamous are usually completed during the embryonic stage. Upon successful completion of this process, at the time of birth, the

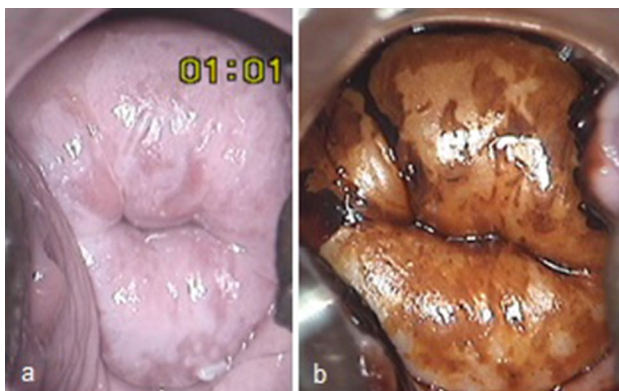


Fig. 1 a CTZ appearing as dense aceto-white circumoral lesion with fine mosaic at 11–1 o'clock position after acetic acid application. b CTZ with patchy iodine uptake on Lugol's iodine application

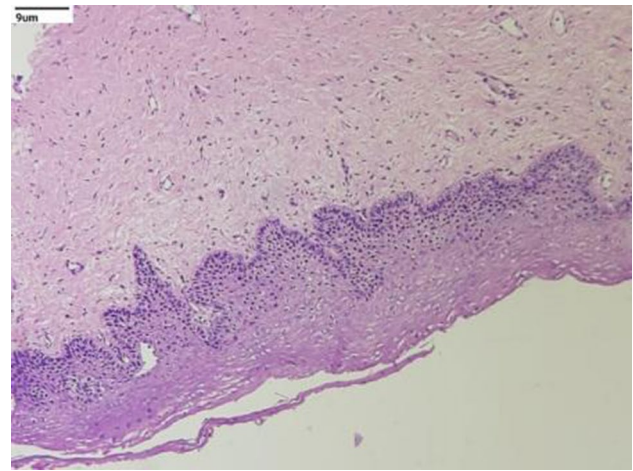


Fig. 2 Cervical biopsy showing chronic cervicitis with increased maturation of the superficial layers of squamous epithelium (H & E $\times 40$)

squamocolumnar junction (SCJ) is seen at the level of the external os of the uterine cervix. If this process is delayed due to any conditions, the SCJ appears away from the external os. The remaining cuboidal epithelium in this area goes through squamous metaplastic changes. This delay in the development of squamous epithelium forms congenital transformation zone formation [2].

The CTZ is considered as a normal variant of the transformation zone. It appears as oblong or lozenge-shaped thin aceto-white area on the cervix, on the application of 5% acetic acid during VIA test and colposcopy examination and usually extends from the anterior lip to posterior lip involving the anterior and the posterior fornix of the vagina [2]. The fine mosaic pattern observed on the surface and the margins of the aceto-white area are sharp but often irregular. These features often mimic a high-grade lesion on colposcopy. The CTZ may be seen in less than 5% of young women undergoing colposcopy [2]. It does not portend a malignant potential and no specific treatment is required. Due to the slow maturation of the epithelium, it may disappear or change its characteristics with the age. Although CTZ is a physiological condition and does not require any management, at times it is very difficult to differentiate the CTZ from cervical premalignant lesions. It is prudent to consider this entity as a differential diagnosis especially when the cytology, HPV and histopathology reports are negative while the colposcopy reveals findings suggestive of a high-grade lesion.

Conclusion

The CTZ is a physiological entity that resembles cervical premalignant lesions on colposcopy procedure. Possibility of CTZ should be considered especially when the cytology

and histology reports do not correlate with the colposcopy findings of a high-grade lesion.

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Compliance with Ethical Standards

Conflict of interest The authors of this manuscript declare that they have no conflict of interests.

Ethical Approval All procedures were performed as a standard of care and were in accordance with the ethical standards of the institutional ethics committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Consent to Participate The authors certify that written consent has been obtained from the individual for publishing the images and other clinical details.

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