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Colposcopic Evaluation of Cervix with Swede Score and its Correlation with Histopathology

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Abstract

Introduction: Cervical cancer is considered to be an international health issue as there is a high incidence in many LMICs. The rate of cervical cancer in the Nepal is 16.4 per 100,000 women. Special mention should be made of its applicability in determining the presence of cervical precancerous lesions, hence the choice of colposcopy as a significant guide to cervical biopsy. This paper seeks to establish the relationship between colposcopic grading of cervix with Swede score and histological examinations of cervical punch biopsy.

Methods: This cross-sectional study was carried out on 81 women attending the Department of Gynaecology of tertiary care teaching hospital Paropakar Maternity and Women's Hospital, Kathmandu. All the women with either abnormal cervical cytology result or HPV positive status were subjected to colposcopic guided biopsy using Swede score. Histopathology was then compared to the findings seen on colposcopy.

Results: 54%(n=44) had abnormal biopsy reports.58% had Swede score>=5. Swede score>= 5 had sensitivity, specificicity, NPV and PPV of 81.2%, 70.2%, 76.5% and 76% respectively.Swede score>= 8 had sensitivity, specificicity, NPV and PPV of 25.5%, 97%, 91.6% and 53.6% respectively

Conclusion: Colposcopy, using Swede score>=5 as cut off is sensitive in screening of cervix and can be used as a basis for treating patients directly as a "see and treat" method.

Keywords: Cervical cancer, colposcopy, screening, swede score

Introduction

Cervical cancer is one of the most significant global health concerns; the disease's incidence is particularly high in LMIC. [1] According to global statistics, in the year 2020 ,the number of new cases of cervical cancer diagnosed was 6,04,127 and the number of deaths attributed to cervical cancer was 3,41,831.[2,3] Nepal has incidence of Cervical cancer that is 16.4 per 100,000 women. WHO has set a target of 4 per 100,000 women.[4,5]

However, cervical cancer, which has a long asymptomatic phase, is not only common but frequently occurring in the developing nation because screening programs for the recognition of pre-malignant and malignant disease are ineffectual. [6]Such procedures as Visual Inspection with Acetic Acid (VIA), Pap smear, Human Papillomavirus (HPV) DNA test, and Visual Inspection with Lugol's Iodine (VILI) are employed for screening.

Colposcopy developed by Hans Hinselman , as non invasive method to evaluate abnormal cervical lesions. [7] It also helps in selection of the suitable site for biopsy. In order to avoid interobserver variation, colposcopy based scoring systems like Swede's score and Reid's Colposcopic Index (RCI)have been incorporated.[8] Reid's

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Colposcopic Index which was developed by Reid R and Scalzi P , is a method of grading premalignant cervical lesion.[9] Swede's score developed in 2005, by Bowring J et al, incorporates lesion size in the scoring system which was not previously used in RCI.[10]

This study aimed to evaluate the efficacy of colposcopy using Swede score as a screening method and to correlate its finding with histopathology as colposcopy guided biopsy of unhealthy-looking areas on cervix.

Methods

This present cross-sectional study was carried out at the Department of Gynaecology in Paropakar Maternity and Women's Hospital from 8th March 2024 to 7th June 2024. The study used women who met the inclusion and exclusion criteria in the study.

The study subjects will be women with either ASCUS, ASC-H, LSIL, HSIL,AGC, AGC-FN,AIS,SCCor HPV positive. Women with any of the following will be excluded: Frank cervical cancer,or mass in cervix on speculum examination Unsatisfactory colposcopy,pregnancy, history of hysterectomy ,Previous conisation and cryotherapy, severe debilitating illness Subsequently, written consent was obtained and after getting permission from Ethical Committee of the National Academy of Medical Sciences, a general history & examination, Per speculum, and bimanual examination was performed on all the subjects. The subjects were informed specifically about the research study and gave consent to participate inn the study.

This was followed by colposcopy after which the Swede score was computed. Out of all the patients, those with negative colposcopy had a biopsy taken from the transformation zone of the cervix. When there was any gross lesion seen through the colposcope, biopsy was done on those areas. Swede score was worked out according to the amount of acetic acid uptake, margins/ surface, blood vessels and size of the lesion and Iodine uptake. Colposcopy results were then compared to the results of the histopathological examination. Lesions with abnormal histopathology were considered cervical intraepithelial neoplasia with any grade, and invasive cancer.

Results

Out of 81 women included in the study, 54%(n=44) showed abnormal cervical biopsy results.

Maximum number of participants were between 31-35 years, but the highest number of abnormal cervical biopsy reports was seen in women above 50 years(16%). Additionally the majority of abnormal cervical biopsy was seen in women who were married for 16 to 25 years, though there was no statistical significance.

Vaginal discharge was found to be a statistically significant feature of women with abnormal cervical biopsy reports(p value <0.001). Though all other clinical features like intermenstural bleeding,postcoital bleeding and abdominal pain was seen more in women with abnormal biopsy reports, none were statistically significant.

Table 1: Correlation of sociodemographic details with cervical biopsy findings

Variable		Normal	Abnormal	p value
Age	<30 years	1	6	.048
	31-35 years	12	5	
	36-40 years	8	6	
	41-45 years	7	6	
	46-50 years	4	8	
	>50 years	5	13	
Duration of marriage				
	<=5 years	3	5	.176
	6-15 years	8	4	
	16- 25 years	20	21	
	26-35 years	1	5	
	>35 years	5	9	
Parity	P0	0	1	0.17
	P1	7	5	
	P2	12	14	
	P3	10	14	
	P4	8	10	

Table 2: Correlation of symptoms with cervical biopsy finding

Variable		Normal	Abnormal	p value
Intermenstural bleeding	Yes	18	27	0.238
	No	19	17	
Postcoital bleeding	yes	12	17	0.909
	no	25	27	
Abdominal pain	yes	17	26	0.238
	no	20	18	
Vaginal discharge	yes	18	33	<0.001
	no	19	11	

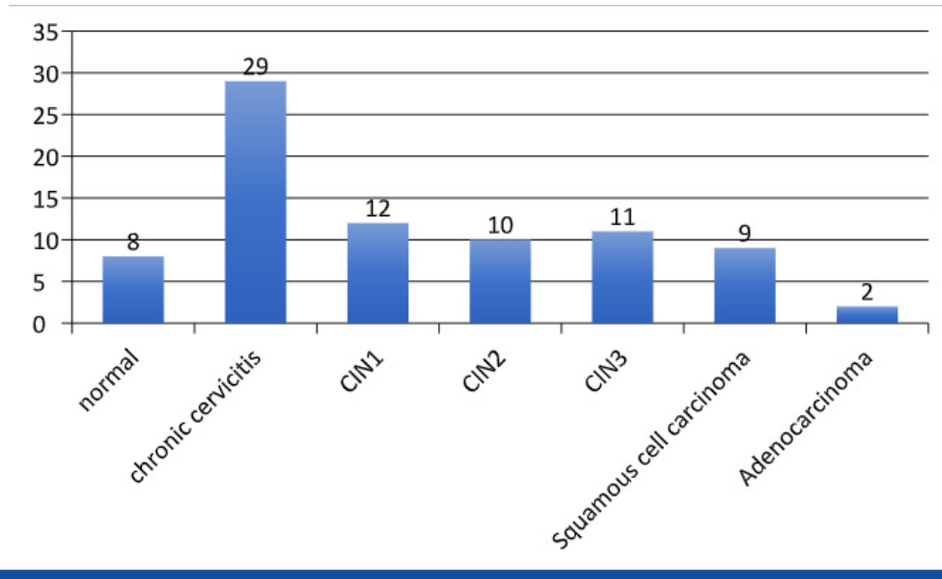

Fig 1: Distribution of the patients according to histopathological findings

Table 3: Correlation of Swede score >=5 with histopathological findings

Swede score	Normal	Abnormal	P value
<5	26	8	<0.001
>=5	11	36	

Table 4: Correlation of Swede score >=8 with histopathological findings

Swede score	Normal	Abnormal	P value
<8	36	33	0.004
>=8	1	11	

Women with Swede score >=5 accounted for 58% of study population.Among them 77% had preinvasive or invasive lesions . About 15% (12/81) of women had a Swede score >=8 and 91% (8/10) of them had preinvasive or invasive lesions. This finding was statistically significant.

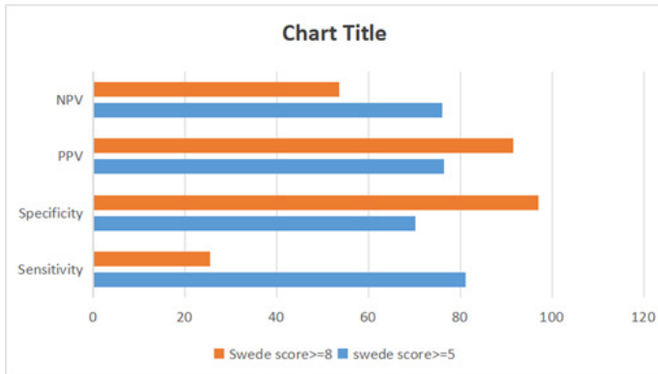

Fig 2: Comparison between swede score and histopathological finding: at cut off scores of 5 & 8

Swede score>= 5 had sensitivity, specificity, NPV and PPV of 81.2%, 70.2%, 76.5% and 76% respectively.Swede score>= 8had sensitivity, specificity, NPV and PPV of 25.5%, 97%, 91.6% and 53.6% respectively

Discussions

Despite of having a long precancerous stage, cervical carcinoma is a commonly encountered in developing nations.Screening strategies for cervical carcinoma has been adopted globally. Colposcopy is one of the screening modalities. Scoring systems like Swede score and Reid's colposcopic score help in differentiating low grade lesion from high grade lesion.

In this study, patient characteristics were analyzed. 38% were between age 31-40. The mean age was 44 years, which was similar to many studies.[11–13] This reinforces the fact that preinvasive lesions are commonly seen in the fourth decade of life.

Maximum number of women were married for 16-25 years(50%).This can be attributed to increased risk of human papilloma virus infections.The maximum number of abnormal biopsy reports were seen among women who had 2-3 children(34%). This shows the increasing incidence of preinvasive lesions and invasive lesions among women with higher parity.

Chronic cervicitis was most commonly seen in histopathological reports. In the study conducted by Agarwal et al, chronic cervicitis formed 75% of cases.[11]In our study, abnormal biopsy reports were seen in 58% of women. This seems a little higher as compared to other studies. A study by Sharma et al showed abnormal biopsy reports of 41%[14], whereas Agarwal et al showed an abnormal biopsy report of 10%. [11] This can be explained by the fact that their study included al women irrespective of their cytology and HPV status. In contrast, our study included only women with either abnormal cytology or HPV positive.

Swede score >=5 showed a significant relation with abnormal histopathological results. This finding is similar to many studies, hence confirming the clinical utility of Swede score.[11,12,14]. Many studies have confirmed the increased sensitivity of Swede score over Reids colposcopic index as it takes lesion size into consideration.[12,15]colposcopic scoring system has been introduced.Methods: A prospective cross- sectional study including 250 women in whom the prevalence of different grades CIN was done. Co-relation of Pap (cytology. Our study showed a sensitivity of 81.2% and specificity of 71.2% respectively.[11] A study by Agarwal et al showed a sensititvity of 100% with a specificity of 82%.A study by Sharma et al showed a sensitivity of 92.3% and specificity of 87.8%. [14] All studies have shown a increased specificity with the cut off score 8. Our study revealed a specificity of 97% with Swede score 8. All studies showed a better NPV with cut off at score 8.This increased specificity came at the cost of decreased sensitivity(25%), which would make it difficult to recommend cut off score of 8 in clinical scenarios.These findings may need to be reevaluated with larger sample size for a definite recommendation.

Conclusion

Screening for cervical cancer and its precursors have been a effective approach for elimination of cervical cancer. Colposcopy is one of the screening methods which can help in diagnosis of preinvasive lesions.Swede score at a cut off at 5 can help to differentiating low grade lesion from high grade lesion, sparing the need for cervical biopsy in many cases. It can also provide a basis for "see and treat" approach, thereby reducing the burden of multiple hospital visits for the patient.This would definitely lead to better compliance.

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