

High-Grade Cytological Lesions of the Uterine Cervix Case Study From 2009 To 2017 At the Gynecological and Obstetrical Clinic at The University Hospital Aristide Le Dantec -Dakar (Senegal): Colposcopic and Therapeutic Aspects

Gassama O¹, Lemine AOM¹, Biaye B², Diallo D², Cisse ML², Coly Niassy Diallo A², Faye Dieme ME², Niass A², Mbodji A², Diouf A³ and Moreau JC³

¹Nabil Choucair Hospital, Gynecologist, Dakar, Senegal.

²Aristide Le Dantec Hospital, Gynecologist, Dakar, Senegal.

³Pikine Hospital, Gynecologist, Dakar, Senegal.

*Correspondence:

BIAYE Babacar, Aristide Le Dantec Hospital, Gynecologist, Dakar, Senegal, E-mail: drbabacarbiaye@yahoo.fr.

Received: 24 December 2018; Accepted: 16 January 2019

Citation: Gassama O, Lemine AOM, Biaye B, et al. High-Grade Cytological Lesions of the Uterine Cervix Case Study From 2009 To 2017 At the Gynecological and Obstetrical Clinic at The University Hospital Aristide Le Dantec -Dakar (Senegal): Colposcopic and Therapeutic Aspects. *Gynecol Reprod Health*. 2019; 3(1): 1-6.

ABSTRACT

Objectives: To evaluate the management of patients with high-grade cytological lesions (HSIL) received at the colposcopy and cervico-vaginal pathology unit of the Gynecological and Obstetric Clinic at Aristide Le Dantec Hospital.

Material and Methods: This study was a retrospective, descriptive and analytical one we conducted from January 05, 2009 to January 31, 2017 (96 months) involving 145 cases. We recruited all patients received for colposcopy after a Pap smear suggestive of a high-grade lesion according to the 2001 Bethesda classification. The parameters studied included epidemiological data, colposcopic features, colposcopy biopsy findings, therapeutic aspects, the results of the histology of the operative specimen and the follow-up. The analysis was done by the means of SPSS 21.

Results: During the study period, we performed 145 colposcopies for patients with high grade lesions. Postmenopausal women accounted for almost half of the patients (48.3%), followed by women in genital activity (42.1%). The average age at first intercourse was 18 years with extremes of 12 and 32 years. One third of our patients (36.5%) used modern contraception. The patients had more than 4 pregnancies in the majority of the cases (82.8%) with an average of 6 pregnancies with extremes of 0 and 15 pregnancies.

The average parity was 5.8 with extremes of 0 and 12. The majority of women had given birth at least four times (64.9%). In colposcopy, vulvoscopy was normal in all patients, examination without preparation found a red zone in 52.4%, examination after application of acetic acid found a mild acidophilus in 4.8%, intense acidophilus in 44.8% and the junction area was visible in 55.9%. Examination after application of lugol found an iodine-negative zone with fuzzy contours in 57.9% of cases. Colposcopy resulted in Grade I atypical transformation in 6.2% and Grade II atypical transformation in 59.3%. After the biopsy under colposcopy, the histology found a microinvasive and invasive squamous cell carcinoma in 37.9%, a CIN 3 in 21.2%, a CIN 2 in 4.5%, a CIN 1 in 9% and a carcinoma in situ in 3%.

We achieved 13 conizations (18%), 29 hysterectomies (40.3%) and 9 colpohysterectomies associated with a lymphadenectomy (12.6%). The postoperative course was simple in all our patients. After surgical treatment, pathology examination showed CIN3 in 34% of cases, CIN2 in 22% of cases, CIN1 in 11% of cases, squamous cell carcinoma in 17% of cases and was normal in 17% of cases.

Conclusion: High-grade lesions are the fundamental step in the evolution of cervical dysplasias to cervical cancer. The management of these lesions is essential in the prevention of cervical cancer.

Keywords

Cervico-vaginal smear, HSIL, Colposcopy, Conisation, Hysterec-tomy, Dakar.

Introduction

High-grade cervical lesions are characterized by loss of maturation of the lining, with atypical parabasal / basal cells occupying two-thirds of the cervical epithelial thickness in the CIN2 and the entire thickness in the CIN3.

The prevalence of high-grade lesions is 1.6% in Senegal, 2.63% in South Africa and 4.3% in Burkina Faso [1-3].

In France, high-grade smears account for about 1% of the screened population, or 60,000 annual cases [4].

This disparity in epidemiological data between developing countries and the developed ones can be explained by the efforts made by the latter in cervical-vaginal smear (FCV) screening [5]. In addition, the incidence will drop considerably in these countries thanks to prevention vaccine [5]. The impact of FCV in detecting pre-cancerous lesions and in reducing the incidence of invasive lesions is obvious in a non-eligible population [5]. Colposcopy plays an essential role in the management of high-grade lesions.

We conducted a study on the practice of colposcopy in Dakar whose objective was to evaluate the management of high-grade lesions.

Materials and Methods

This was a retrospective, descriptive and analytical study conducted at the Gynecological and Obstetric Clinic of Aristide Le Dantec University Hospital during the period from 05 January 2009 to 31 January 2017 (96 months). In this study, we included all patients with a high-grade cervical smear lesion according to the 2001 Bethesda classification. We excluded from this study all patients who had macroscopically suspicious lesions of cervical cancer having benefited directly from biopsies.

All patients included had undergone colposcopy, which included vulvoscopy, an unprepared examination, a 3% acetic acid test, and an application of lugol solution. Cervical biopsies peripheral to the clamp under colposcopy were performed in case of visualization of pathological areas or when the junction area was not visible. For the colposcopic report we used the terminology of the French Society of Colposcopy and Cervico-Vaginal Pathology.

The studied parameters were the epidemiological-socio-economic factors, the results of colposcopy, the results of the colposcopy under biopsy, the correlation between the colposcopic conclusion and the biopsy, the therapeutic gestures, the correlation between the colposcopy biopsy and the Anatomico-pathological examination of the operative specimen. We also evaluated the performance of

colposcopy in the diagnosis of high-grade lesions. The analysis was done by SPSS 21 software.

Results

Socio-demographic characteristics

During the study period we received 1623 patients in the Colposcopy Unit and Cervico-Vaginal Pathology. Of these, 145 patients (8.9%) had a high-grade cytological lesion.

The mean age of the patients was 47.6, and the most representative age group was 40 to 49 years (33.8%). Almost all of the patients were married (94.5%) and more than half of them (57.2%) were monogamous.

The average parity was 5.8 deliveries with extremes of 0 and 12. In the majority of cases, patients had already given birth at least 4 times (64.9%). The patients were already menopausal in almost half of the cases (48.3%). The mean age at first intercourse was 18 with extremes of 12 and 32 years, while the average age at first pregnancy was 19 years. Only 36.6% of patients had done contraception at least once and the most used method was injectable.

Colposcopic data

At the examination without preparation, we notified a red zone in more than two thirds of our patients (68.2%) and the examination was normal in 18% of the cases. At the end of the colposcopic examination, the majority of our patients had an atypical transformation of grade II (59.3%).

Colposcopy was satisfactory in 81 patients (55.9%) and the junction area was not visible in 64 patients (44.1%). Patients in whom colposcopy was unsatisfactory were more than 45 years old in 60.6% of cases (Table 1).

Colposcopy Conclusion	Number (n)	Percentage (%)
TAG2	86	59.3
Normal Cervix	32	22
Viral Colpit	10	6.9
Minor change	9	6.2
Polyp	5	3.5
Minor and major change	1	0.7
Ectropion	1	0.7
Vulvar Condyloma	1	0.7
Total	145	100

Table 1: Distribution of patients by colposcopy results (n = 145).

Histological data

Of the 66 biopsies performed under colposcopy, the histology found 28.7% of high-grade lesions (CIN II, CIN III and CIS) and squamous cell carcinoma in 37.9% of cases (Table 2).

Biopsy results	Number (n)	%
Squamous cell carcinoma	25	37.9
CINIII	14	21.2
Metaplasia	11	16.8
CINI	6	9
Cervicitis	4	6
CINII	3	4.5
CIS	2	3
Polyp	1	1.6
Total	66	100

Table 2: Distribution of the results of the biopsy after the examination (n = 66).

Therapeutic data

Therapeutic abstention was recommended in half of our patients or 50.3% of cases, with cervical-vaginal smear in 6 to 24 months. We performed surgical treatment in 35.2% of our patients. It was radical in 52.9% of patients and conservative in 18% of cases (Table 3). There were 13 conizations (18%) at the diathermic loop. The postoperative course was simple in all our patients.

Gesture therapeutic	n	%
Vaginal Hysterectomy	26	40.3%
Conisation	12	18%
Chemotherapy	10	15.3%
Radiotherapy	9	13.8
Colpo-hysterectomy associated with a pelvic lymphadenectomy	8	12.6%
Total	66	100

Table 3: Distribution of patients by therapeutic gesture (n = 66).

Prognostic data

During the surveillance, we performed 57 smears among them, 3 were pathological. Of these 3 patients, 1 had had a CIN3 hysterectomy for an inflammatory smear and for the 2 who had persistent CIN1, the control colposcopy was normal.

We recorded 9 deaths, 6 of which related to the evolution of a cervical pathology (24% lethality) with an average delay of 22

months between the realization of colposcopy and death.

Correlation between colposcopy conclusion and biopsy findings

Overall, the agreement between the two techniques for determining high-grade lesions was good.

The adequacy of colposcopy with the histology results showed a sensitivity of 88.8%, however, its specificity was low (31.2%) (Table 4).

Correlation between the colposcopic conclusion and the histology of the operative specimen

The agreement between the two approaches for determining high grade lesions was good. The adequacy of colposcopy with the histology results showed a sensitivity of 81.2%, however, its specificity was low (27.5%) (Table 5).

Discussion

Limits of the study

Several limits were noted in our study: Cervico-vaginal smears came from different health structures; Colposcopies were performed by different Gynecologists-Obstetricians.

Socio-demographic characteristics

In our study, the mean age of the patients was 47.6 years with extremes of 23 and 75 years. Our results are comparable to those found by Khaoula in Morocco where the average age was 46.6 years with extremes of 28 and 60 years, and those of Samaké in Mali who found an average age was 48.5 years old. [7]. On the other hand, the average age of our patients is higher than that found in France by Bailly with a mean age of 37.4 years [8]. This disparity is probably explained by the fact that the latter study was organized as part of organized screening, contrary to our study in which screening was opportunistic. The inclusion of organized screening at an early age is critical to the incidence and mortality of cervical cancer in developing countries due to the lack of screening program.

Screening programs vary from country to country. In South Africa, the goal of the National Cervical Cancer Screening Program is to

		Biopsy results	Total						
		YES	NO		Sensitivity	Specificity	VPP	VPN	Kappa Coefficient
Colposcopic	YES	16	33	49	88.8%	31.2%	32.6%	88.2%	0.133 (Concordance average)
Conclusion	NO	2	15	17					
Total		18	48	66					

Table 4: Correlation between colposcopic conclusion and biopsy results.

		Histology of the operative specimen		Total					
		YES	NO		Sensitivity	Specificity	VPP	VPN	Coefficient Kappa
Coloscopic	YES	13	36	49	81.2%	28%	26.5 %	82.4%	0.06 (Average Concordance)
Conclusion	NO	3	14	17					
Total		16	50	66					

Table 5: Correlation between the colposcopic conclusion and the histology of the operative specimen.

perform a cervical-cervical Pap smear test 3 times in a woman's life, starting at age 30 if the HIV serology test is complete. is negative and 5 times if positive [9].

In France, the goal of the screening program is to screen all women aged 25 to 65 with a Pap smear each year for two successive years, then every three years if the first two smears are normal [10].

In Iceland, screening is recommended from the age of 20 [11]. To harmonize screening programs, WHO has recommended that new screening programs first offer testing to women over 30 years of age and then to younger women once coverage of the high-risk group is reached. WHO also advocates not including women under 25, and prioritizing screening for women aged 30-49. This screening should continue until the age of 65, provided that the two previous smears are negative [12].

In our study, the peak frequency of high-grade lesions was 45 to 49 years, which urges us to insist on screening this age group. High-grade dysplasia is usually a pathology of women during periods of genital activity. In our study, female patients at the time of genital activity accounted for 42.1%. Khaola [6] in Morocco and Samaké in Mali have found higher rates with respectively 58.3% and 59.3% [7].

The early age of intercourse is a risk factor for high-grade cervical lesions. In our series, the mean age at first intercourse was 18 years and more than half of our patients (55.2%) had had their first sexual intercourse at an age less than 20 years. This notion was found in 93.7% of Holmes patients in Senegal [12]. Our results are comparable to those of Tebeu in Cameroon, where the mean age at first intercourse was 19 years [13]. The precocity of unprotected sex is associated with a higher incidence of cervical intraepithelial neoplasia. Cervical cylindrical ectopia during adolescence and local immaturity explain the increased susceptibility to human papillomaviruses [11].

The risk of dysplasia is significantly higher if the age of first intercourse is less than 17 years. A cohort study of 1075 female students aged 15 to 19 years with normal smear and no HPV infection at baseline had shown that the incidence of high grade CIN was maximal 6 to 12 months after the first detection. of HPV infection [11].

Our study population consisted mainly of multigestes and multipares. Only 3 women were pregnant, that is to say 2.1%. Our data are comparable to those found in the literature [6,7,18].

A study conducted by Soudre in Burkina Faso on 1130 FCV revealed that 86% of patients with CIN had given birth at least 3 times [14]. In Elaarji's work in Morocco, patients with cervical cancer at first pregnancy were less than 20 in 45.3%, and 63.3% of them were large multiparous women. Some authors consider gestationality as a cofactor related to uncontrolled sexual activity or unplanned maternity [15,16].

On the other hand, authors consider that gestationality is a risk factor in its own right involving the physiological repercussions of pregnancy on the local immune defense mechanisms related to the biological upheaval experienced by the cervical epithelium [13,17].

Colposcopic aspects

Colposcopy found atypical grade II lesions in 59.3% of cases and virulent colitis in 6.9%.

Our results are higher than those found by Gassama in Dakar with 36.6% of Grade II atypical transformations (TAGII), and 10.4% of viral colpits, and by Dembélé who found lower rates with only 15.2 % of atypical grade II transformations [1,17]. This disparity is explained by the fact that our series, unlike that of Dembélé and Gassama, consisted only of patients with high-grade cytological lesions.

The performance of colposcopy is dependent operator. Indeed, the probability of finding an invasive lesion on a piece of cone is 0.6% if the observer is trained (200 colposcopies per year) whereas it is 2% if the operator is poorly trained (20%). colposcopy per year) [18,19].

In our study population, the majority of patients (60.6%) who had unsatisfactory colposcopy were over 45 years of age. The junction zone is most often endocervical after 50 years [19]. In fact, Saunders, by locating the junction areas inaccessible by microcolpohysteroscopy in 284 patients, had clearly shown that they were significantly farther from the external orifice after menopause [20].

None of our patients had benefited from curettage of the endocervix because of the lack of suitable equipment. There is currently no consensus for performing endocervical curettage. Advocates of this procedure note that it increases overall the sensitivity of colposcopy by allowing to discover 2 to 6% lesions CIN 2 and CIN 3 that would not have been discovered by the only directed biopsy. On the other hand, the opponents of this technique mention its painful character, the difficulties of the anatomopathological interpretation related to fragments of small size, badly oriented, often without stroma and the fact that it is mainly contributive in patients who anyway are candidates for exeresis treatment [20-24].

Histological aspects

Colposcopy biopsy for atypical Grade II transformation showed high grade lesions in only 26.9%, whereas squamous cell carcinoma was found in 14.3% of cases. This rate is higher than that found by Gassama with 19% of high-grade lesions [17]. On the other hand, it is much lower than that found by Khaoula in Morocco which was 95.9% [6]. The small sample in this study (18 patients) could explain this discrepancy that we noted.

Colposcopy is a test that requires experience and difficulties are common in both colposcopy and histological examination to differentiate between metaplasia and atypical grade II

transformation. These difficulties mean that certain techniques have been developed and allow the coupling of a colposcope to a computer equipped with a three-dimensional video adapter (3D) and a dedicated graphics card [24].

To increase the sensitivity of histological examination to distinguish metaplasia and high-grade lesions, pathologists use immunolabeling of the P16 protein which is a cyclin kinase inhibitor (CDK) that decelerates the cell cycle by inactivating CDKs that provide phosphorylation of the retinoblastoma protein (Rb). In CIN 3 and cervical cancer, immunolabeling of P16 is increased. The presence of P16 is directly or indirectly related to HPV at risk, probably because of the increased production of E6 and E7 oncoproteins whose binding to p53 and pRb proteins are required for transformation. The expression of P16 is the control of the expression of E6 / E7 viral oncogenes in dysplastic cells [25].

Therapeutic aspects

Work done in Eastern, Central and Southern Africa on a situation analysis of the diagnosis and treatment of cervical cancer had shown that diathermic loop cryotherapy and electroconisation equipment was not available in all district hospitals and provincial hospitals surveyed [26].

Our data join those of these developing countries in sub-Saharan Africa. The majority of our patients had a hysterectomy (63%) versus 21.7% conisation. Our results are discordant compared to those of Khaoula in Morocco with 91.6% conization versus 8.4% hysterectomy [6]. This can be explained by the advanced age and lack of desire of pregnancy of our patients, but also by the difficulties of surveillance in our context characterized by the insufficient number of cytologists, anatomopathologists and specialized services in the taking into account. high-grade lesions in other parts of Senegal.

In our study, the HPV test was offered to all patients in the post-treatment follow-up of high grade dysplasias, but was not performed. The introduction of the HPV test into the surveillance protocol is necessary as shown by a meta-analysis of 16 studies with a sensitivity of the HPV test to detect a recurrence after conidization of 94.4% and a specificity of 75% [27].

Prognostic aspects

We noted a favorable evolution of all the patients treated for high grade lesions. In contrast, a lethality of 24% was found in invasive cancer, while Elaarji in Morocco had zero lethality [15]. This is probably due to the long consultation time of our patients, hence the importance of setting up a national screening program to diagnose early stage lesions.

Sensitivity and specificity of colposcopy

When an operator is well trained in colposcopy, sensitivity increases allowing the identification of underlying high-grade lesions. However, its specificity remains lower than 50%, which is at the origin of overestimated diagnoses, inappropriate treatments, stress for the patients [28]. Our results are similar to those found by

Gassama [17] with a sensitivity of 91.3%, a specificity of 44.7%, a positive predictive value of 16% and a negative predictive value of 97.8%. 87.5%.

Conclusion

The high-grade lesions of the cervix are asymptomatic lesions. Their annual incidence is 5 new cases per 1,000 women under 40 years old and the prevalence varies from 29 to 65 per 1,000. The major risk is evolution to cervical cancer that has a devastating impact on the health of women around the world, especially in developing countries, where it is the most common form of cancer and the leading cause of death by cancer in women.

References

1. De Tourris H, Henrion R, Delecour M. Abrégé illustré de gynécologie obstétrique. 6e édition - Masson. 1994; 506-509.
2. Lansac J, Berger C, Magnin G. Obstétrique pour le praticien. 2ème édition. SIMEP. 1990; 263.
3. Cisse CT, Faye EO, De Bernis L, et al. Rupture utérine au Sénégal: épidémiologie et qualité de la prise en charge. Méd Trop. 2002; 62: 619-622.
4. Fofie CO, Baffoe P. A two-year review of uterine rupture in a regional hospital. ghana medical journal. 2010; 44: 98-102.
5. Rajaonarison JJC, Fenomanana MS, Rakotondraisoa JM, et al. Rupture utérine pendant le travail: facteurs étiologiques et pronostic materno-fœtal. Rev. anesth.-réanim. med urgence. 2014; 6: 8-12.
6. Akpadza K, Baeta S, Hodonou AKS. Fréquence et pronostic du centre hospitalier régional de Sokode (Togo). Méd Afr Noire. 1996; 43: 592-595.
7. Lopez E, Patkai J, El Ayoubi M, et al. Bénéfices et risques néonataux de la tentative de voie basse comparée à la césarienne programmée en cas d'antécédent de césarienne. Journal de Gynécologie Obstétrique et Biologie de la Reproduction. 2012; 41: 727-734.
8. Parant O. Rupture utérine: prédiction, diagnostic et prise en charge. Journal de Gynécologie Obstétrique et Biologie de la Reproduction. 2012; 41: 803-816.
9. Greene MF. Vaginal birth after cesarean revisited. N Engl J Med. 2004; 351: 2647-2649.
10. Macones GC, Stamilio AG. Can uterine rupture in patients attempting vaginal birth after cesarean delivery be predicted? Am J Obstet Gynecol. 2006; 195: 1148-1152.
11. Khabbaz A, Usta I, El-Hajj M, et al. Rupture of an unscarred uterus with misoprostol induction: case report and review of the literature. J Matern Fetal Med. 2001; 10: 141-145.
12. Abdoufalah A, Abassi H, Morsad F, et al. Les ruptures utérines Durant l'épreuve du travail sur uterus cicatriciel: conséquences maternelles et périnatales. Rev Gynécol Obstét. 2000; 7: 87-90.
13. Diouf A, Dao B, Diallo D, et al. Les ruptures utérines au cours du travail en Afrique Noire. Expérience d'une maternité de référence à Dakar (Sénégal). Médecine d'Afrique Noire. 1995; 42: 592-597.
14. Guise JM, Mcdonagh MS, Osterweil P, et al. Systematic review of the incidence and consequences of uterine rupture

-
- in women with previous caesarean section. *BMJ*. 2004; 329: 19-25.
15. Chennoufi MB, Ben Temime R, Chelli D, et al. Rupture uterine: à propos de 41 cas. *Tunis Med*. 2002; 80: 49-52.
 16. Sweeten KM, Graves WK, Anthanassiou A. Spontaneous rupture of the unscarred uterus. *Am J Obstet Gynecol*. 1995; 172: 1851-1856.
 17. Waterstone M, Bewley S, Wolfe C. Incidence and predictors of severe obstetric morbidity: case-control study. *BMJ*. 2001; 322: 1089-1093.
 18. Zelop CM, Shipp TD, Repke JT, et al. Effect of previous vaginal delivery on the risk of uterine rupture during a subsequent trial of labor. *Am J Obstet Gynecol*. 2000; 183: 1184-1186.
 19. Ahmadi S, Noura M, Bibi M, et al. Rupture utérine sur utérus sain gravide. À propos de 28 cas. *Gynécologie Obstétrique & Fertilité*. 2003; 31: 713-717.
 20. Singh O, Gupta SS, Mathur RK. Urogenital fistulas in women: 5-year experience at a single center. *Urol J*. 2010; 7: 35-39.
 21. Zwart JJ, Richters JM, Ory F, et al. Uterine rupture in The Netherlands: a nationwide population-based cohort study. *BJOG*. 2009; 116: 1069-1078.
 22. Gessesew A, Mengiste MM. Ruptured uterus - Eight year retrospective analysis of causes and management outcome in Adigrat Hospital, Tigray region. *Ethiop J Health Dev*. 2002; 16: 241-245.
 23. Dolo A, Keita B, Diabate FS, et al. Les ruptures utérines au cours du travail. A propos de 21 cas à l'hôpital national de point "G". *Bamako. Méd Afr Noire*. 1991; 38: 133-134.