

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20223112>

Original Research Article

Choriocarcinoma on hysterectomy specimen in Senegal: histological study

Amadou Ndiade^{1*}, Abdou M. Gaye², Mama Sy³, Ibou Thiam², Ndiaga Diop³,
Mame V. Gueye³, Robert Diatta³, Ange L. Diatta⁴, Fabrice Senghor⁴, Oumar Faye²

¹Department of Histology Embryology Cytogenetics and Reproductive Biology, Heinrich Lubke Regional Hospital of Diourbel, Diourbel, Senegal

²Department of Anatomy and Cytology Pathology, Aristide Le Dantec University Hospital, Dakar, Senegal

³Department of Histology Embryology Cytogenetics and Reproductive Biology, Cheikh Anta Diop University, Dakar, Senegal

⁴Department of Biology and Functional Exploration of the Assane Seck University of Ziguinchor, Ziguinchor, Senegal

Received: 12 October 2022

Revised: 04 November 2022

Accepted: 05 November 2022

*Correspondence:

Dr. Amadou Ndiade,

E-mail: amadou.ndiade@uadb.edu.sn

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Trophoblastic diseases are in general exclusive to women in their reproductive years. Gestational choriocarcinoma (GC) is a rare malignant tumor derived from the trophoblast of women in childbearing age. Our objective was to study the epidemiological and clinicopathologic aspects at the laboratories of pathological anatomy and cytology (ACP) of Aristide Le Dantec Hospital and General Idrissa Pouye Hospital.

Methods: Our study was conducted in the anatomy and pathology laboratories of the Hôpital Général Idrissa Pouye and the Hôpital Aristide Le Dantec in Dakar. This study was based on records of pathological reports of gestational choriocarcinomas from these different laboratories. This was a retrospective and descriptive bi-centric study, spread over eight (8) years from January 1, 2013, to December 31, 2020. All cases diagnosed on hysterectomy specimens and with a formal conclusion of choriocarcinoma have been included. We recorded the data collected in Excel 2007 software and the analysis was made using Epi Info.

Results: We collected 25 cases of choriocarcinomas. The mean age of the patients was 38.1±9.7. Mixed seat tumors (intra-cavitary and intra-mural) were the most frequent with 48% of cases. Patients who were at FIGO stage 1 represented for 88% of cases.

Conclusions: Gestational choriocarcinoma (GC) is a proliferation of the trophoblast (cytotrophoblast and syncytiotrophoblast). This study has helped establish histopathological data of choriocarcinoma on hysterectomy specimen in Dakar.

Keywords: Dakar, Gestational choriocarcinoma, Hysterectomy

INTRODUCTION

Gestational choriocarcinoma (GC) is a rare malignant tumor derived from the trophoblast.¹ It belongs to the group of trophoblastic diseases which are generally exclusive to women during genital activity but remain described during peri-menopause and menopause.¹

Its frequency in Europe and North America is estimated at 0.2-0.7/1000 pregnancies, and it represents 12.8% of gestational trophoblastic diseases.^{2,3}

The aim of this work was to describe the epidemiological profile and the clinicopathologic characteristics of choriocarcinomas in the laboratories of pathological

anatomy and cytology (PAC) of Aristide Le Dantec Hospital (HALD) and Idrissa Pouye General Hospital. (HOGIP).

METHODS

This was a bi-centric retrospective and descriptive study, spread over eight (8) years from January 1, 2013 to December 31, 2020.

Our study was conducted in the laboratories of pathological anatomy and cytology of the hospital General Idrissa Pouye and the Aristide Le Dantec hospital in Dakar.

This study was based on archives of anatomo-pathological reports of gestational choriocarcinomas from these different PCR laboratories.

All cases diagnosed on hysterectomy specimen from January 1, 2013, to December 31, 2020, and with formal conclusion of gestational choriocarcinoma were included.

Cases in which the diagnosis of choriocarcinoma was evoked without being formally retained were not included.

We recorded the data collected in Excel 2007 software and the analysis was made by Epi Info.

RESULTS

Frequency

During our study period, we collected 25 cases of choriocarcinoma with an average annual frequency of 3.12.

Age

The mean age of the patients was 38.1±9.7 (standard deviation) years with a median age of 39 years and extremes of 22 and 51 years. Patients under 40 years of age were in the majority, accounting for 52% of the total.

Table 1: Age group of patients.

Age group (years)	Cases (n)	Frequency (%)
20-29	7	28
30-39	6	24
40-49	9	36
50-59	3	12

History of a molar pregnancy

A history of molar pregnancies was recorded in 17 patients.

Patients with a history of molar pregnancy accounted for 76.47%.

Macroscopic location of the tumor

The exclusive Endo cavity area was 28%; intramural area was 24%. The majority of tumors had a mixed area (endo-cavitary and intra-mural) or 48%.

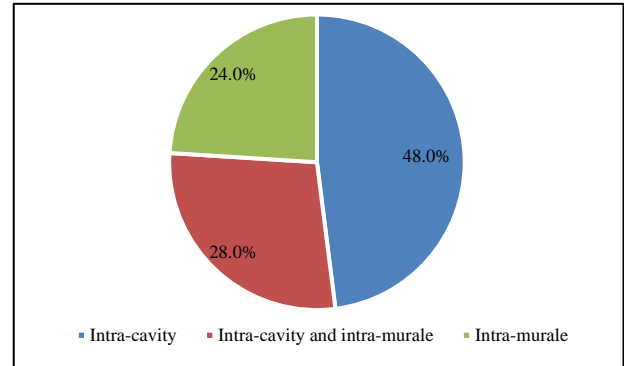


Figure 1: Location of tumors in the uterus in macroscopy: endo-cavitary and intramural.

Extension and classification of FIGO

The tumors were mostly limited to the body with 80% of cases and extended to the fallopian tubes in 12% of cases.

Patients who were at stage 1 represented 88% of cases. Stage 3 was the highest and was 4%.

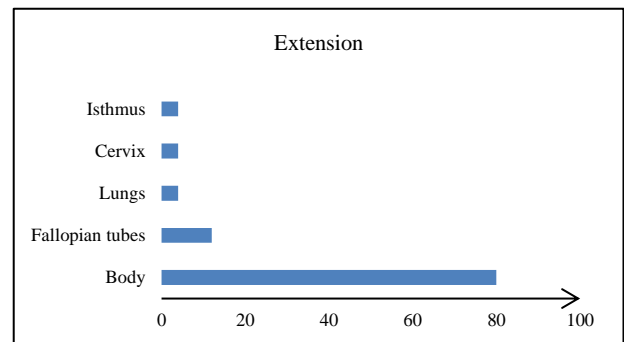


Figure 2: Distribution of patients following the extension (N=25).

Presence of embolus

The presence of vascular embolism was found in 16% of cases, i.e., 4 samples.

DISCUSSION

Epidemiological aspects

Gestational choriocarcinoma is a malignant tumour of the villous trophoblast, lacking placental villi.^{4,5} Studies have shown a high incidence of gestational choriocarcinoma ranging from 23 to 335 per 100,000 pregnancies.⁶⁻¹² Teoh in Singapore also reported a rate of 1 in 4298 deliveries.¹³

Gueye and colleagues in Senegal recorded 878 cases of patients with choriocarcinoma between 2011 and 2017.¹⁴ In the USA 203 cases of choriocarcinoma were recorded by Louise between 1973 and 1982.¹⁵ However, other authors have observed a low frequency of gestational choriocarcinoma with rates varying between 2 and 7 per 100,000 pregnancies.^{11,16} In Pital's study (England) only one case of choriocarcinoma was noted out of 5976 cases of trophoblastic disease.¹⁷ We collected 25 cases of gestational choriocarcinoma, which represents an annual frequency of 3.12 and can be considered low. The high incidence of gestational choriocarcinoma observed in certain studies is due to on the one hand, a diagnosis made on imaging (ultrasound and MRI); on ovarian debris and on hysterectomy parts, and on the other hand, the probable inclusion of other trophoblastic diseases, particularly invasive mole.

Macroscopic location of the tumor

On the macroscopic level, tumors with a double location (intracavitary and intramural) were the majority with 48% of cases, followed by intracavitary (28%) and intramural (24%) locations.

Diouf et al had reported 7 cases of choriocarcinoma, of exclusive endocavitary site, out of a series of 13 cases, i.e., 54.84%.¹⁸

This difference in the location of the tumor would be related to the therapeutic indication.

Most of the hysterectomies were for preventive purposes, thus intramural or mixed extension was rarely found.

Intra-parietal localizations are most often asymptomatic, which means that these cases could go unnoticed.

Extension and classification of FIGO

In our study, tumors classified as stage 1 (tumor limited to the uterine body) were the majority and represented 88% of cases of gestational choriocarcinoma.

This predominance of stage 1 is explained by the fact that in our patients the hysterectomy was performed in order to prevent complications, in particular metastases.

This hysterectomy being facilitated by the acceptance of patients who are mostly multiparous.

This is not the case in the Moroccan study where out of 8 hysterectomy specimens, 5 were stage 3 and 5. Preventive hysterectomies would therefore be a good prognostic factor in the development of choriocarcinoma.¹⁹

Presence of embolus

In our series, emboli were observed in 16% of choriocarcinoma cases.

A vascular invasion and emboli within the myometrium are frequently observed.^{20,21}

This presence of embolism is a pejorative sign because it conditions the occurrence of metastasis.²²

CONCLUSION

Gestational choriocarcinoma (CG) is a malignant tumor proliferation of the trophoblast (cytotrophoblast and syncytiotrophoblast). In Senegal, data on choriocarcinoma are not always available. The diagnosis is difficult to evoke when there is no recent history of pregnancy during interview. The aggressiveness of choriocarcinomas contrasting with the availability of all diagnostic and therapeutic means, led us to pay particular attention to this pathology.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Golfier F, Raudrant D, Frappart L, Mathian B, Guastalla JP, Trillet-Lenoir V, et al. First epidemiological data from the French Trophoblastic Disease reference center. *Am J Obstet Gynecol.* 2007;196(2):1-5.
2. Steigrad SJ. Epidemiology of gestational trophoblastic diseases. *Best Pract Res Clin Obstet Gynaecol.* 2003;17(6): 837-47.
3. Allias F, Bolze PA, Gaillot-Durand L, Devouassoux-Shisheboran M. The network of gestational trophoblastic diseases. *Ann Pathol.* 2014;34(6):434-47.
4. Bagshawe KD. Section of Oncology. *Proc Roy Soc Med.* 1977;62:192-9.
5. Noal S, Joly F, Leblanc E. Management of a gestational trophoblastic tumour. *Gynecol Obstet Fertil.* 2010;38(3):193-8.
6. Cisse CT, Lo N, Moreau JC, Diadihou F, Choriocarcinoma in Senegal: epidemiology, prognosis and prevention. *Gynecol Obstet Fertil.* 2002;30:826-69.
7. Boufettal H, Khalkane L, Noun M, Hermas S, Samouh N. Complete hydatidiform moles in Morocco: epidemiological and clinical study. *J Gynecol Obstet Biol Reprod.* 2011;40(5):419-29.
8. Boufettal H, Coullin P, Mahdaoui S, Noun M, Hermas S, Samouh N. Partial hydatidiform moles in Morocco: epidemiological and clinical study. *East Mediter Health J.* 2012;18(7):755-61.
9. Ramos AJ, Cantero M, Zhang P, Raychowdhury M, Green A, Macphee D, et al. Morphological and electrical properties of human trophoblast choriocarcinoma. *Placenta.* 2008;29:492-502.
10. Behtash N, Behnamfar F, Hamedi B, Ramezanzadeh F. Term delivery following successful treatment of

- choriocarcinoma with brain metastases, a case report and review of literature. *Arch Gynecol Obstet.* 2009;279:579-81.
11. Chellia D, Dimassia K, Buazizb M, Ghaffaria C, Zouaouia B, Sfara E, et al. Imaging of gestational trophoblastic diseases. *J Gynecol Obstet Reprod Biol.* 2008;37(6):559-67.
 12. Jain P, Cietak KA. Post-term choriocarcinoma with unusually low β HCG. *J Obstet Gynaecol.* 2008;28:661-2.
 13. Teoh ES, Dawood MY, Ratnam SS. Observations on Choriocarcinoma in Singapore. *Obstet Gynecol.* 1972;40(4):519-24
 14. Gueye M, Ndiaye MD, Diallo M, Mbodji A, Kane Gueye SM, Moreau JC. Management of gestational trophoblastic diseases in a low resource country: establishment of a national center and its results. *Med Sante Trop.* 2019;29(2):213-9.
 15. Brinton LA, Bracken MB, Connelly RR. Choriocarcinoma incidence in the United States. *American J Epidemiol.* 1985;123(6):1094-100.
 16. Cheung ANY, Zhang HJ, Xue WC, Siu MK. Pathogenesis of choriocarcinoma: clinical, genetic and stem cell perspectives. *Fut Oncol.* 2009; 5(2):217-31.
 17. Pisal N, North C, Tidy J, Hancock B. Role of hysterectomy in management of gestational trophoblastic disease. *Gynecol Oncol.* 2002;87(2):190-2.
 18. Diouf A, Cissé ML, Laïco A, Ndiaye D, Moreau JC, Diadhiou F. Sonographic aspects of gestational choriocarcinoma. *J Radiol* 2005; 86: 469-73
 19. Cisse CT, Lo N, Moreau J C, Diadhiou F, Choriocarcinoma in Senegal: Epidemiology, prognosis and prevention. *Gynecol Obstet Fertil.* 2002;30:826-69.
 20. Devouassoux-Shisheboran M. Gestational trophoblastic tumors. *Crossroads pathology.* 2005;11-20. Available from: <http://www.sfpathol.org/media/pdf/pathologie-trophoblastique-carrefour-2005.pdf>. Accessed on 2 December 2021
 21. Lurain JR. Gestational trophoblastic disease I: epidemiology, pathology, clinical presentation and diagnosis of gestational trophoblastic disease, and management of hydatidiform mole. *Am J Obstet Gynecol.* 2010;203(6):531-9.
 22. Landing. C Gestational choriocarcinoma, a maternal and child pathology. Thesis for the graduation of state midwifery from the University of Nantes UFR Medicine school of midwives. 2014.

Cite this article as: Ndiade A, Gaye AM, Sy M, Thiam I, Diop N, Gueye MV, et al. Choriocarcinoma on hysterectomy specimen in Senegal: histological study. *Int J Reprod Contracept Obstet Gynecol* 2022;11:3232-5.