Non-gestational ovarian Choriocarcinoma: a comprehensive review of current knowledge

UDC 618.11-006.0-073-091.8

DOI: https://doi.org/10.32345/USMYJ.1(160).2026.37-44

Received: October 20, 2025
Accepted: January 18, 2026
Published online: March 31, 2026

Olha Derecha[1], Lada Prymak[1], Alina Balabai[2]

[1] Student 4 year, Medical faculty №1, Bogomolets National Medical University, Kyiv, Ukraine
[2] Associate Professor, Department of Pathological Anatomy, Bogomolets National Medical University, Kyiv, Ukraine

ORCID:
Olha Derecha: 0009-0006-6842-8523
Lada Prymak: 0009-0002-0490-0789
Alina Balabai: 0000-0001-6716-5334

Corresponding author:
Olha Derecha
E-mail: Olhaderechaa@gmail.com

Abstract: non-gestational ovarian choriocarcinoma is an extremely rare and highly aggressive germ cell tumor, accounting for less than 0.6% of all ovarian cancers. Unlike its gestational counterpart, non-gestational choriocarcinoma arises independently of pregnancy and lacks paternal genetic material, defining it as a distinct clinicopathological entity. Although most cases occur in women of reproductive age, instances in postmenopausal patients have also been reported. Its rarity, rapid progression, and early hematogenous dissemination pose considerable diagnostic challenges. Because clinical and laboratory findings often overlap with more common gynecologic conditions, accurate diagnosis requires a comprehensive multidisciplinary approach. Imaging modalities such as ultrasonography, computed tomography, and magnetic resonance imaging are essential for detecting pelvic masses and assessing metastatic spread, but histological, immunohistochemical, and genetic examinations remain the cornerstone of definitive diagnosis. Microscopically, non-gestational choriocarcinoma is characterized by biphasic proliferation of cytotrophoblasts and syncytiotrophoblasts, typically accompanied by extensive hemorrhage and necrosis. Diagnostic markers, including elevated serum β-human chorionic gonadotropin and expression of placental proteins such as placental alkaline phosphatase and human placental lactogen, provide critical diagnostic support. These findings confirm trophoblastic differentiation and assist in distinguishing of non-gestational choriocarcinoma from other ovarian germ cell tumors with overlapping features. Despite advances in diagnostic techniques, prognosis remains poor due to the aggressive course and early metastasis, most frequently to the lungs, liver, and brain. The limited number of published cases impedes the development of standardized diagnostic and therapeutic protocols, contributing to variability in clinical outcomes and underscoring the importance of each documented case. This review consolidates current knowledge on ovarian non-gestational ovarian choriocarcinoma, emphasizing its clinical presentation, morphopathological characteristics, and diagnostic complexities. By highlighting the absence of unified recommendations and the risk of misdiagnosis – particularly in women of reproductive age – this work aims to serve as a valuable resource for oncologists, pathologists, gynecologists, medical educators, and researchers engaged in the study of germ cell neoplasms and trophoblastic tumors.

Keywords: Diagnostic Errors, Differential Diagnosis, Morphological and Microscopic Findings, Non-Gestational Choriocarcinoma, Ovarian Neoplasms, Pathology

How to cite this article: Derecha O, Prymak L, Balabai A. Non-gestational ovarian choriocarcinoma: a comprehensive review of current knowledge. Ukrainian Scientific Medical Youth Journal. 2026;1(160):37-44. doi:10.32345/USMYJ.1(160).2026.37-44

ISSN 2786-6661

Introduction

Choriocarcinoma is a rare and aggressive malignant tumor of trophoblastic origin, characterized pathologically by biphasic proliferation of cytotrophoblasts and syncytiotrophoblasts without the presence of chorionic villi, while producing human chorionic gonadotropin [1]. Choriocarcinoma most commonly develops in the uterus or ovaries and metastasizes predominantly via the hematogenous route to the lungs, vagina, liver, brain, gastrointestinal tract, kidneys, and adrenal glands [2].

Based on pathogenetic origin and genetic characteristics, choriocarcinoma is classified into two groups: gestational and non-gestational [3]. Gestational choriocarcinoma (GC), which is better studied and documented, typically develops in women of reproductive age within the uterus, necessarily contains paternal genetic material, and may occur following hydatidiform mole, abortion, ectopic pregnancy, or normal full-term pregnancy [4].

Non-gestational choriocarcinoma (NGC), in contrast, is unrelated to pregnancy and lacks paternal genetic contribution, arising instead from pluripotent germinal gonadal cells [5]. Unlike gestational forms, NGC is characterized by rapid progression and the early development of both hematogenous and lymphogenous metastases [6, 7].

NGCs have been reported not only in women of reproductive age but also in men, children, and postmenopausal women [8–10]. The exact etiopathogenesis of these tumors remains unclear due to their extreme rarity, and the limited amount of accumulated data makes it difficult to fully characterize their clinical course, diagnostic features, and therapeutic approaches [11].

Aim

The article is a review and analysis of the current state of knowledge regarding NGC as a rare and insufficiently studied malignant neoplasm. Particular emphasis is placed on its clinical and morphological characteristics, as well as the challenges and current approaches to the differential diagnosis between NGC and GC.

Materials and methods

This systematic review was conducted in accordance with the PRISMA guidelines. A comprehensive literature search was performed across four international databases: PubMed, Scopus, Web of Science, and Embase, covering the period from 2000 to 2025. The following Boolean keyword combinations were used: ("non-gestational choriocarcinoma" OR "extragonadal choriocarcinoma") AND ("ovarian choriocarcinoma" OR "germ cell tumors") AND ("diagnosis" OR "prognosis"). Inclusion and exclusion criteria: we included original clinical case reports, systematic reviews, meta-analyses, and expert guidelines that provided diagnostic approaches or prognostic data related to NGC. In addition, studies in which authors directly compared NGC and GC were also included, as they provide valuable insights into differential diagnosis and clinical outcomes. Only publications in English with full-text availability were considered eligible. Studies were excluded if they were duplicate records, focused exclusively on GC without comparative analysis, lacked analytical data, or originated from non-peer-reviewed sources. All records were independently screened by two reviewers. Titles and abstracts were assessed in the first phase, followed by full-text evaluation of eligible articles. Discrepancies were resolved through consensus. After removing duplicates and applying eligibility criteria, 42 articles were included in the final synthesis. These sources were selected based on relevance, methodological quality, and contribution to the understanding of NGC. In this review, we deliberately focused on the diagnostic and morphological aspects of NGC rather than therapeutic approaches. The topic of treatment was excluded, as a separate article dedicated to therapeutic strategies is planned for future publication.

The choice of this topic was determined by the rarity of ovarian NGC, the absence of unified diagnostic and treatment protocols, and the potential for misdiagnostics with the gestational form, especially in women of reproductive age. The article is addressed to oncologists, pathologists, gynecologists, students and teachers of medical universities, as well as researchers interested in the study of germ cell neoplasms and trophoblastic tumors.

Review and discussion

Due to the extremely low incidence of NGC, most of the available information is derived from isolated clinical case reports, underscoring the importance of synthesizing and generalizing the published data. Among germ cell tumors, NGC most frequently develops in the ovary, accounting for approximately 0.6% of cases. It is characterized by highly aggressive malignant growth and a marked tendency toward early metastasis [12–15].

Epidemiological studies indicate that NGC is most frequently diagnosed in women of reproductive age, typically between 12 and 25 years. However, isolated cases have also been reported in prepubertal girls and postmenopausal women [5,14,16]. The true prevalence of the tumor is difficult to determine due to the lack of comprehensive epidemiological data. In a recent study, Sakhr Alshwayat et al. (2025)

analyzed patient records from 2000 to 2020 in the SEER database (a major source of cancer statistics in the United States) and identified 919 cases of choriocarcinoma, of which only 200 were classified as NGC [17].

The origin of NGC remains uncertain, and several hypotheses have been proposed to explain how a trophoblastic tumor can arise without association with pregnancy. The most widely discussed is the germ cell hypothesis, which suggests that the tumor originates from pluripotent germ cells capable of differentiating into any tissue, including trophoblastic; DNA analyses consistently demonstrate maternal genetic material only [18,19]. A less common explanation is the embryonic dedifferentiation hypothesis, in which ovarian epithelial cells undergo malignant transformation and acquire trophoblastic characteristics [20,21]. Additionally, some studies have indicated that NGC may result from arrested migration of germ cells along the urogenital ridge from the yolk sac, which subsequently differentiate into choriocarcinoma [22].

There are two types of NGC: the pure type, which consists solely of choriocarcinoma without other germ cell components, and the mixed type [23]. Castiglioni et al. (2014) reported that mixed ovarian NGCs are frequently associated with other germ cell tumors, including embryonal carcinoma, yolk sac tumor, and teratoma, either within the same ovary or in the contralateral ovary. In contrast, the pure form is considered the rarest subtype [24].

Diagnosis of NGC at an early stage is particularly challenging, and most authors emphasize the need for a multimodal approach that combines imaging, pathomorphological examination, and genetic analysis. The clinical symptoms of NGC are non-specific and overlap with those of more common ovarian pathologies, such as ectopic pregnancy, ovarian cysts, or other germ cell tumors, which often results in delayed or incorrect diagnoses [6]. Clinically, NGC most frequently mimics ectopic pregnancy, presenting with vaginal bleeding, abdominal pain, elevated levels of β-human chorionic gonadotropin (β-hCG), and systemic signs of intoxication such as fatigue, dizziness, and nausea [25, 26].

When examined by ultrasound, NGC typically appears as a mass with irregular contours, containing cystic areas with dense mobile echo signals and septa resulting from abundant vascularization [27, 28]. The tumor's well-developed vascular supply is further confirmed by color Doppler imaging [29]. Computed tomography (CT) and magnetic resonance imaging (MRI) are generally regarded as the most informative diagnostic modalities, as they are effective in detecting metastatic and hemorrhagic lesions in other organs [30, 31]. According to Yanfeng Y. (2019), in cases of suspected ovarian NGC, a minimum diagnostic workup should include ultrasound, MRI, and CT in combination with tumor marker assessment [22].

On macroscopic examination the tumor typically presents as a soft or moderately firm mass of reddish-brown to dark brown coloration, composed of highly vascular neoplastic tissue. Viable tumor cells are usually concentrated at the periphery, whereas extensive areas of necrosis and hemorrhage are predominantly located in the central regions of the lesion [22, 32, 33].

Microscopically, NGC is composed of cytotrophoblasts, syncytiotrophoblasts, and intermediate trophoblasts [22, 34]. The neoplastic cells are arranged in lattice-like, papillary, or tufted structures and may include poorly differentiated components resembling mixed germ cell tumors [22, 29]. Cytotrophoblasts and intermediate trophoblasts are typically medium-sized cells with distinct borders, oval or polygonal in shape, containing a centrally located round hyperchromatic nucleus and a scant amount of clear or eosinophilic cytoplasm [31]. These cells are usually organized in layers, occasionally forming villous-like structures, and often line blood-filled spaces [29]. Cytotrophoblasts are typically surrounded by syncytiotrophoblasts, which are multinucleated cells with indistinct borders and eosinophilic cytoplasm containing vacuoles [29, 35, 36]. These cells are metabolically active and secrete β-human chorionic gonadotropin (β-hCG) and human placental lactogen. NGC cells exhibit marked atypia, including abnormal mitotic figures, nuclear pleomorphism, and hyperchromasia. Histologically, the tumor structure is highly similar to GC; both lack chorionic villi, and no definitive pathohistological features exist to reliably distinguish NGC from GC [28, 36]. In a study of 37 patients with NGC, Yuming Shao (2020) reported that additional tumor components included elements of dysgerminoma, embryonal carcinoma, teratoma, and adenocarcinoma [33].

The highly vascularized architecture of NGC contributes to its pronounced invasiveness. Tumor emboli, together with hematogenous and local metastatic dissemination, can be detected in the lungs, liver, brain, intestines, and other organs [36–38]. Numerous studies have documented that more than half of patients present with pulmonary metastases at the time of diagnosis [30, 32].

The diagnostic profile of ovarian NGC remains nonspecific, and neither serum markers nor immunohistochemical markers currently provide

ISSN 2786-6661

a reliable panel to differentiate NGC from GC [31]. Syncytiotrophoblasts actively express β-hCG, which aids in distinguishing NGC from other ovarian tumors [30]. However, when interpreting β-hCG elevation, it is important to recognize that increased levels are characteristic not only of pregnancy and all forms of choriocarcinoma, but also of other neoplasms, including ovarian germ cell tumors, lung tumors, transitional cell carcinoma of the bladder, hypernephroma, renal cell carcinoma, pancreatic carcinoma, osteosarcoma, and squamous cell carcinoma of bone [39, 40]. Elevated β-hCG is considered a key diagnostic criterion in differentiating NGC from GC in young prepubertal female patients and in cases where pregnancy can be definitively excluded [15]. Serial measurement of β-hCG remains the most widely used parameter for monitoring therapeutic response, with declining levels indicating effective treatment [12]. In addition to serum β-hCG, several immunohistochemical markers have been identified in the literature as diagnostically and prognostically significant. These include cytokeratin, placental alkaline phosphatase, Ki-67, alpha-fetoprotein, carcinoembryonic antigen, among others, which provide supplementary information for both diagnosis and outcome assessment [6, 22, 28].

While researchers recommend the use of an immunohistochemical panel as an auxiliary tool to confirm the trophoblastic nature of the tumor, the only definitive method for distinguishing NGC from GC is genetic profiling – specifically short tandem repeat (STR) analysis to detect paternal DNA. However, this technique is costly and not widely available [41]. Given the close similarity between NGC and GC, as well as the complexity of their differential diagnosis, we provide a comparative analysis of the main distinguishing features of these tumors (Table 1).

The prognosis of ovarian is extremely poor; in many reports, the 3-year survival rate does not exceed 50% [5,26,37]. Standard treatment involves surgery combined with multidrug chemotherapy, yet the therapeutic response, complication rates, and overall outcomes in NGC are significantly worse compared toGC [33, 42].

Conclusions

Ovarian NGC is an extremely rare but highly aggressive malignant neoplasm of germ cell origin, characterized by rapid progression, early metastatic spread, and significant challenges in differential diagnosis. Although morphologically similar to GC, the absence of pregnancy association and paternal genetic material renders NGC a clinicopathological enigma. Literature analysis indicates that accurate diagnosis requires a multidisciplinary approach, incorporating imaging modalities, morphological verification, and, where feasible, genetic profiling. Serum and immunohistochemical markers play an important role in confirming the trophoblastic nature of the tumor, but do not allow reliable differentiation of NGC from GC without molecular analysis. The prognosis for NGC remains poor, particularly in cases of late detection or extragonadal localization. The

Table 1. Comparison of main features of Non-Gestational Choriocarcinoma (NGC) and Gestational Choriocarcinoma (GC).

Characteristic	Non-Gestational Choriocarcinoma (NGC)	Gestational Choriocarcinoma (GC)
Frequency of occurrence	Extremely rare; most often arises as a germ cell tumor of the ovaries or testicles; can occur in both children and adults	More common; typically develops after molar pregnancy, miscarriage, childbirth, or ectopic pregnancy in women of reproductive age
Etiology and mechanism of development	Originates from primitive gonadal or extragonadal germ cells capable of differentiating into trophoblastic elements; not genetically associated with pregnancy	Develops from trophoblastic cells following pregnancy, molar pregnancy, or childbirth; genetically corresponds to the fetal chromosome set (diploid, sometimes androgenetic)
Morphology	Morphologically similar to GC, but trophoblastic differentiation may be less pronounced	Atypical syncytiotrophoblasts and cytotrophoblasts; extensive necrosis and hemorrhage; absence of chorionic villi
Diagnosis	– β-hCG levels: may be highly or moderately elevated – Imaging (ultrasound, CT, MRI) – Biopsy for morphological verification – Genetic testing to exclude gestational origin	– β-hCG levels: markedly elevated, often exceeding normal pregnancy values – Imaging (ultrasound, CT, MRI) to identify lesions – Biopsy if necessary
Treatment response and prognosis	Limited response; chemotherapy less effective, prognosis worse, especially with extragonadal localization or late detection	Excellent response; chemotherapy highly effective, complete recovery often achievable

absence of standardized treatment protocols and the limited number of reported cases hinder therapeutic optimization, underscoring the high clinical and scientific importance of each documented case.

By reviewing the available literature, we identified several unresolved questions that warrant further investigation and may guide future research:

1. Optimal chemotherapy regimens. What treatment protocols are most effective for NGC, given its limited sensitivity to standard regimens used for the gestational form?

2. Development of molecular markers. Is it possible to establish reliable molecular markers that can differentiate NGC from other germ cell tumors without the need for genetic profiling?

3. Creation of an international database. How can a global registry of NGC cases be organized to facilitate systematic data collection, comparative analysis, and the development of evidence-based recommendations?

This review systematizes the current data on ovarian NGC, highlighting the urgent need for further research, the development of standardized diagnostic algorithms, and the optimization of treatment strategies to improve patient outcomes and prognostic indicators.

Limitations

The present review has several limitations. Most of the available data are derived from isolated clinical case reports rather than large-scale studies, and no randomized controlled trials have been published to date. Considerable heterogeneity exists in diagnostic approaches across the literature, which restricts the ability to generalize findings. Moreover, many publications do not consistently provide specific numerical indicators or comparative datasets, further limiting the possibility of quantitative synthesis and robust statistical analysis. These factors should be taken into account when interpreting the results of this review.

Funding. This project received no external financial support.

Conflict of interests. The authors declare that they have no financial, academic or personal conflicts of interest related to the publication of this article.

Consent to Publication. All authors have read and agreed to the published version of the manuscript.

Ethics Approval Statement. Not applicable (this is a review article; no human participants or identifiable data were involved).

AI Statement. AI tools were not used in preparing this manuscript.

Author Contributions (CRediT taxonomy). Conceptualization – Alina Balabai; Methodology – Alina Balabai, Olha Derecha, Lada Prymak; Software – Not applicable; Validation – Alina Balabai; Formal Analysis – Alina Balabai; Resources – Olha Derecha; Data Curation – Lada Prymak; Writing – Original Draft – Olha Derecha, Lada Prymak; Writing – Review & Editing – Alina Balabai; Visualization – Lada Prymak; Supervision – Alina Balabai; Project Administration – Alina Balabai; Funding Acquisition – Not applicable

References

1. Wang L, Wan Y, Sun Y, Zhang X, Cheng X, Wu M, Liu G. Pure nongestational uterine choriocarcinoma in postmenopausal women: a case report with literature review. Cancer Biol Ther. 2019;20(9):1176-1182. doi:10.1080/15384047.2019.1617564
2. 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):531-539. doi:10.1016/j.ajog.2010.06.073
3. Jones KO, Petrosyan A, Yoon J, Roytman M. Non-gestational choriocarcinoma presenting in a post-menopausal woman: a case report. ACG Case Rep J. 2024;11(10):2937. doi:10.14309/01.ajg.0001047904.35427.30
4. Bogani G, Ray-Coquard I, Mutch D, Vergote I, Ramirez PT, Prat J, et al. Gestational choriocarcinoma. Int J Gynecol Cancer. 2023;33(10):1504-1514. doi:10.1136/ijgc-2023-004704
5. Liu X, Zhang X, Pang Y, Ma Y, Zhang X, Liu P. Clinicopathological factors and prognosis analysis of 39 cases of non-gestational ovarian choriocarcinoma. Arch Gynecol Obstet. 2020;301(4):901-912. doi:10.1007/s00404-020-05502-9
6. Ao X, Hu S, Tan S, Xiong W. Nongestational ovarian choriocarcinoma with bilateral teratoma: a rare case report and literature review. Medicine (Baltimore). 2024;103(18):e36996. doi:10.1097/MD.0000000000036996
7. Mangla M. Gestational or non-gestational choriocarcinoma – a diagnostic dilemma. Taiwan J Obstet Gynecol. 2022;61(3):564. doi:10.1016/j.tjog.2022.03.031
8. Huang W, Zheng Z, Bao Z, Xiao X, Li L, Sun Z, et al. A poor prognostic male choriocarcinoma with multiple systemic metastases: a case report and literature review. Front Med (Lausanne). 2024;11:1382672. doi:10.3389/fmed.2024.1382672

ISSN 2786-6661

9. Mangla M, Palo S, Kanikaram P, Kaur H. Non-gestational choriocarcinoma: unraveling the similarities and distinctions from its gestational counterpart. Int J Gynecol Cancer. 2024;34(6):926-934. doi:10.1136/ijgc-2023-004906
10. Li H, Cai Z, Liu R, Hu J, Chen J, Zu X. Clinicopathological characteristics and survival outcomes for testicular choriocarcinoma: a population-based study. Transl Androl Urol. 2021;10(1):408-416. doi:10.21037/tau-20-1061
11. Oda Y, Niimi K, Yoshida K, Tamauchi S, Yokoi A, Yasui Y, et al. Establishment and characterization of a non-gestational choriocarcinoma patient-derived xenograft model. BMC Cancer. 2023;23(1):1103. doi:10.1186/s12885-023-11626-3
12. Coutinho FM, Raposo S, Carvalho T, Sousa R. Non-gestational uterine choriocarcinoma inside a leiomyoma: importance of early suspicion in prognosis. BMJ Case Rep. 2022;15(2):e246731. doi:10.1136/bcr-2021-246731
13. Yu X, Du Q, Zhang X, Liu Y, Shen Y. Pure primary non-gestational choriocarcinoma originating in the ovary: a case report and literature review. Rare Tumors. 2021;13:20363613211052506. doi:10.1177/20363613211052506
14. Gafar I, Elhassan M, Elhaj A, Calvert P. Unusual presentation of non-gestational extragonadal choriocarcinoma. Cureus. 2024;16(11):e74072. doi:10.7759/cureus.74072
15. Fu X, Chen W, Zhu J. Clinical and imaging characteristics of non-gestational ovarian choriocarcinoma: a case report. Curr Med Imaging. 2025;21:e15734056386021. doi:10.2174/0115734056386021250520043409
16. Ono K, Hoshi R, Hirano T, Watanabe Y, Goto S, Hosokawa T, et al. Nongestational ovarian choriocarcinoma with precocious puberty in a 7-year-old girl: a rare case report. J Pediatr Adolesc Gynecol. 2025;38(4):528-531. doi:10.1016/j.jpag.2025.02.007
17. Alshwayyat S, Hawa MBAA, Maraqa K, Alshwayyat TA, Alshwayyat M, Hanifa H, et al. Outcomes in gestational and non-gestational choriocarcinoma: a retrospective cohort study with nomograms and web tools. Womens Health (Lond). 2025;21:17455057251344386. doi:10.1177/17455057251344386
18. Di Fiore R, Suleiman S, Felix A, O'Toole SA, O'Leary JJ, Ward MP, et al. An overview of the role of long non-coding RNAs in human choriocarcinoma. Int J Mol Sci. 2021;22(12):6506. doi:10.3390/ijms22126506
19. De Lucia DR, Castaldo A, D'Agostino V, Ascione R, Pesce I, Coppola L, et al. Metastatic choriocarcinoma with hemorrhagic complications and spontaneous ovarian hyperstimulation syndrome: a case report. Radiol Case Rep. 2021;16(12):3868-3874. doi:10.1016/j.radcr.2021.09.031
20. Xing D, Zheng G, Pallavajjala A, Schoolmeester JK, Liu Y, Haley L, et al. Lineage-specific alterations in gynecologic neoplasms with choriocarcinomatous differentiation: implications for origin and therapeutics. Clin Cancer Res. 2019;25(14):4516-4529. doi:10.1158/1078-0432.CCR-18-4278
21. Tsujioka H, Hamada H, Miyakawa T, Hachisuga T, Kawarabayashi T. A pure nongestational choriocarcinoma of the ovary diagnosed with DNA polymorphism analysis. Gynecol Oncol. 2003;89(3):540-542. doi:10.1016/s0090-8258(03)00139-2
22. Yang Y, Zhang X, Chen D, Liu L, Hao L. Adolescent non-gestational ovarian choriocarcinoma: report of a case and review of literature. Int J Clin Exp Pathol. 2019;12(5):1788-1794.
23. Malovrh EP, Lukinovič N, Bujas T, Sobočan M, Knez J. Ultra-high-risk gestational choriocarcinoma of the ovary associated with ectopic pregnancy. Curr Oncol. 2023;30:2217-2226. doi:10.3390/curroncol30020171
24. Castiglioni V, Farhang Ghahremani M, Goossens S, De Maglie M, Ardizzone M, Haigh JJ, et al. Immunohistological description of nongestational ovarian choriocarcinoma in two female mice with conditional loss of Trp53 driven by the Tie2 promoter. Vet Pathol. 2015;52(4):752-756. doi:10.1177/0300985814551581
25. Kumar N, Arora A, Rathod G, Mangla M, Setty A, Rathod PT, et al. A rare case of pure non-gestational ovarian choriocarcinoma: diagnostic mimicry and management strategies. Oncoscience. 2025;12:70-78. doi:10.18632/oncoscience.622
26. Cronin S, Ahmed N, Craig AD, King S, Huang M, Chu CS, et al. Non-gestational ovarian choriocarcinoma: a rare ovarian cancer subtype. Diagnostics (Basel). 2022;12(3):560. doi:10.3390/diagnostics12030560
27. Moro F, Bolomini G, Sibal M, Vijayaraghavan SB, Venkatesh P, Nardelli F, et al. Imaging in gynecological disease (20): clinical and ultrasound characteristics of adnexal torsion. Ultrasound Obstet Gynecol. 2020;56(6):934-943. doi:10.1002/uog.21981
28. Dai GL, Tang FR, Wang DQ. Primary ovarian choriocarcinoma occurring in a postmenopausal woman: a case report. World J Clin Cases. 2023;11(15):3592-3598. doi:10.12998/wjcc.v11.i15.3592
29. Wang Q, Guo C, Zou L, Wang Y, Song X, Ma Y, et al. Clinicopathological analysis of non-gestational ovarian choriocarcinoma: report of two cases and review of the literature. Oncol Lett. 2016;11(4):2599-2604. doi:10.3892/ol.2016.4257
30. Yee LS, Zakaria R, Mohamad N, Fong OW. Non-gestational choriocarcinoma of the ovary: a case report. J Taibah Univ Med Sci. 2021;16(4):632-636. doi:10.1016/j.jtumed.2021.01.001
31. Sait HK, Alghamdi F, Ragab Y, Aljadani S, Sait KH. Non-gestational choriocarcinoma of the ovary: a report of a rare case from Saudi Arabia. Cureus. 2024;16(8):e66487. doi:10.7759/cureus.66487
32. Montenegro MV, Lucio da Silva TM, Pereira MF, Cândido HLL. Mixed non-gestational ovarian choriocarcinoma: relevance of early diagnosis in a case report. Rev Bras Cancerol. 2023;69(4):e184434. doi:10.32635/2176-9745.RBC.2023v69n4.4434

33. Shao Y, Xiang Y, Jiang F, Pan B, Wan X, Yang J, et al. Clinical features of a Chinese female nongestational choriocarcinoma cohort: a retrospective study of 37 patients. Orphanet J Rare Dis. 2020;15(1):325. doi:10.1186/s13023-020-01610-6
34. Szabova L, Karim B, Gordon M, Lu L, Pate N, Ohler ZW. A transplantable syngeneic allograft mouse model for nongestational choriocarcinoma of the ovary. Vet Pathol. 2019;56(3):399-403. doi:10.1177/0300985818823669
35. Imamura Y, Tashiro H, Saito F, Takaishi K, Ohba T, Fukunaga M, Katabuchi H. Choriocarcinoma coexisting with epithelioid trophoblastic tumor of the uterine horn. Gynecol Oncol Rep. 2015;14:31-33. doi:10.1016/j.gore.2015.10.002
36. Syed M, Meshram S, Deshpande P, Parida B. Extremely rare case of bilateral pure primary non-gestational ovarian choriocarcinoma. Pol J Radiol. 2017;82:547-550. doi:10.12659/PJR.902578
37. Nishino K, Yamamoto E, Ikeda Y, Niimi K, Yamamoto T, Kajiyama H. A poor prognostic metastatic nongestational choriocarcinoma of the ovary: a case report and the literature review. J Ovarian Res. 2021;14(1):56. doi:10.1186/s13048-021-00810-3
38. Rao KV, Konar S, Gangadharan J, Vikas V, Sampath S. A pure non-gestational ovarian choriocarcinoma with delayed solitary brain metastases: case report and review of the literature. J Neurosci Rural Pract. 2015;6(4):578-581. doi:10.4103/0976-3147.169869
39. Demirtas E, Krishnamurthy S, Tulandi T. Elevated serum beta-human chorionic gonadotropin in nonpregnant conditions. Obstet Gynecol Surv. 2007;62(10):675-679. doi:10.1097/01.ogx.0000281557.04956.61
40. Ostreni I, Colatosti A, Basile EJ, Rafa O. Elevated beta-human chorionic gonadotropin in a non-pregnant female with altered kidney function. Cureus. 2022;14(4):e23747. doi:10.7759/cureus.23747
41. Zhang X, Yan K, Chen J, Xie X. Using short tandem repeat analysis for choriocarcinoma diagnosis: a case series. Diagn Pathol. 2019;14(1):93. doi:10.1186/s13000-019-0866-5
42. Maybury EK, Gwacham NI, Singh C, Mondo S, Ahmad S, McKenzie ND. Rapid recurrence of stage IIB non-gestational ovarian choriocarcinoma with minor yolk sac tumor: a rare case report and literature review. Gynecol Oncol Rep. 2023;50:101312. doi:10.1016/j.gore.2023.101312

ISSN 2786-6661

Негестаційна хоріокарцинома яєчників: комплексний огляд сучасних знань

Ольга Дереча[1], Лада Примак[1], Аліна Балабай[2]

[1] Студентка 4 курсу, медичний факультет №1, Національний медичний університет імені О.О. Богомольця, Київ, Україна
[2] Доцентка кафедри патологічної анатомії, Національний медичний університет імені О.О. Богомольця, Київ, Україна

Corresponding author:
Olha Derecha
E-mail:Olhaderechaa@gmail.com

Анотація: негестаційна хоріокарцинома яєчника – надзвичайно рідкісна та агресивна герміногенна пухлина, що становить менше 0,6% усіх злоякісних новоутворень яєчника. На відміну від гестаційної форми, негестаційна хоріокарцинома розвивається без зв'язку із вагітністю та не містить батьківського генетичного матеріалу, що визначає її як окрему клініко-морфологічну нозологію. Хоча більшість випадків діагностується у жінок репродуктивного віку, описані також поодинокі випадки у пацієнток в менопаузі. Рідкісність, швидке прогресування та рання гематогенна дисемінація створюють значні діагностичні труднощі. Через схожість клінічних та лабораторних ознак з більш поширеними гінекологічними патологіями, точна діагностика потребує мультидисциплінарного підходу. Візуалізаційні методи (ультразвукове дослідження, комп'ютерна томографія та магнітно-резонансна томографія) є корисними для виявлення тазових утворень та оцінки метастатичного ураження. Водночас гістологічне, імуногістохімічне дослідження та генетичний аналіз залишаються основними методами підтвердження діагнозу. Мікроскопічно негестаційна хоріокарцинома характеризується біфазною проліферацією цитотрофобластів і синцитіотрофобластів, що супроводжується вираженими крововиливами та некрозом. Діагностичні маркери, зокрема підвищений рівень β-хоріонічного гонадотропіну людини у сироватці крові та експресія плацентарних білків, таких як плацентарна лужна фосфатаза та плацентарний лактоген, мають важливе діагностичне значення. Вони не лише підтверджують трофобластичну диференціацію, а й дозволяють диференціювати негестаційну хоріокарциному від інших герміногенних пухлин яєчника зі схожими ознаками. Незважаючи на вдосконалення діагностичних методик, прогноз при негестаційній хоріокарциномі залишається несприятливим через агресивний перебіг та раннє метастазування в легені, печінку та головний мозок. Обмежена кількість задокументованих випадків ускладнює розробку стандартизованих протоколів діагностики та лікування, що спричиняє варіативність клінічних результатів і підвищує цінність кожного клінічного спостереження. Цей огляд узагальнює наявні дані щодо негестаційної хоріокарциноми яєчника з акцентом на її клінічні прояви, морфологічні особливості та діагностичні труднощі. Підкреслюючи відсутність уніфікованих рекомендацій і ризик помилкової діагностики, особливо у жінок репродуктивного віку, наша робота може бути цінним джерелом для онкологів, патологів, гінекологів, викладачів і студентів медичних університетів, а також дослідників, що займаються герміногенними та трофобластичними пухлинами.

Ключові слова: Діагностичні Помилки, Диференціальний Діагноз, Морфологічні та Мікроскопічні Знахідки, Негестаційна Хоріокарцинома, Патологія, Пухлини Яєчників