ISSN 1995-5464 (Print); ISSN 2408-9524 (Online)
https://doi.org/10.16931/1995-5464.2025-1-86-93

Нейроэндокринные опухоли желчного пузыря: клинические характеристики, лечение и выживаемость на примере девяти наблюдений

Tidjane A.[1], Bengueddach A.[2], Kadri A.[3], Derriche H.[4], Ikhlef N.[1], Iarbi H.[1], Mansouri Ju.[1], Meharzi S.I.[1], Kehili H.[2], Ourabah A.[1], Tabeti B.[1]

[1] *Department of Hepatobiliary Surgery, EHU-1st November 1954, University of Oran 1, Oran, Algeria*
[2] *Department of Medical Oncology, EHU-1st November 1954, University of Oran 1, Oran, Algeria*
[3] *Laboratoire d'Anatomie Pathologique, Dr Kadri, Oran, Algeria*
[4] *Etablissement Hospitalier Kara, Oran, Algeria*

Нейроэндокринные опухоли желудочно-кишечного тракта и панкреатобилиарной системы являются редкими злокачественными новообразованиями, при этом нейроэндокринные новообразования желчного пузыря составляют менее 0,5% всех нейроэндокринных опухолей.
Цель. Описание клинических особенностей, стратегий лечения и исходов нейроэндокринных новообразований желчного пузыря у пациентов, проходивших лечение в западной части Алжира.
Материал и методы. Проведен ретроспективный анализ девяти наблюдений нейроэндокринных новообразований желчного пузыря, диагностированных с декабря 2015 по сентябрь 2024 г. из общего числа пациентов с нейроэндокринными опухолями желудочно-кишечного тракта и панкреатобилиарной системы (301 пациент). Собранные данные включали возраст, пол, клинические проявления, градацию опухоли, индекс Ki-67, стадии, методы лечения и выживаемость.
Результаты. Из 9 пациентов (6 женщин и 3 мужчин, средний возраст 58,56 года) у 4 диагностированы хорошо дифференцированные нейроэндокринные опухоли, у 5 — крупноклеточные нейроэндокринные карциномы. Общие клинические проявления включали боль в правом подреберье (100%), желтуху (22%), пальпируемую опухоль (33%) и потерю массы тела (56%). Трем больным удалось выполнить хирургическое вмешательство R0, достигнуты негативные края резекции. Общая выживаемость составила 8,7 мес, при этом выживаемость пациентов, перенесших радикальную операцию, в среднем составила 17,7 месяцев по сравнению с 4,2 мес у пациентов без операции. У пациентов с желтухой отмечена меньшая выживаемость: средняя выживаемость пациентов с желтухой составила 2,5 мес, пациентов без желтухи — 10,4 мес.
Заключение. Нейроэндокринные новообразования желчного пузыря являются редкими опухолями и представляют определенные клинические трудности. Настоящее исследование подчеркивает важность ранней диагностики и агрессивного лечения, при этом желтуха служит критическим прогностическим фактором. Хирургическое вмешательство обеспечивает потенциальные преимущества в выживаемости, хотя необходимы дальнейшие исследования для уточнения стратегий лечения этих редких новообразований.

Ключевые слова: *нейроэндокринные опухоли; новообразование желчного пузыря; прогноз; хирургия; желтуха*
Ссылка для цитирования: Tidjane A., Bengueddach A., Kadri A., Derriche H., Ikhlef N., Iarbi H., Mansouri Ju., Meharzi S.I., Kehili H., Ourabah A., Tabeti B. Нейроэндокринные опухоли желчного пузыря: клинические характеристики, лечение и выживаемость на примере девяти наблюдений. *Анналы хирургической гепатологии*. 2025; 30 (1): 86–93. https://doi.org/10.16931/1995-5464.2025-1-86-93
Авторы заявляют об отсутствии конфликта интересов.

Gallbladder neuroendocrine neoplasms: clinical characteristics, management, and survival in nine cases

Tidjane A.[1], Bengueddach A.[2], Kadri A.[3], Derriche H.[4], Ikhlef N.[1], Iarbi H.[1], Mansouri Ju.[1], Meharzi S.I.[1], Kehili H.[2], Ourabah A.[1], Tabeti B.[1]

[1] *Department of Hepatobiliary Surgery, EHU-1st November 1954, University of Oran 1, Oran, Algeria*
[2] *Department of Medical Oncology, EHU-1st November 1954, University of Oran 1, Oran, Algeria*
[3] *Laboratoire d'Anatomie Pathologique, Dr Kadri, Oran, Algeria*
[4] *Etablissement Hospitalier Kara, Oran, Algeria*

Aims: Gastrointestinal and pancreatobiliary neuroendocrine tumors (GNETs) are rare malignancies, with gallbladder neuroendocrine neoplasms (GB-NENs) representing less than 0.5% of all NETs. This study aims to describe the clinical features, management strategies, and outcomes of gallbladder neuroendocrine neoplasms treated within the West Algerian NET Network.

Materials and Methods. A retrospective analysis was conducted on 9 cases of gallbladder neuroendocrine neoplasms diagnosed between December 2015 and September 2024 from a total of 301 patients with Gastrointestinal and pancreatobiliary neuroendocrine tumors. Data were collected on age, sex, clinical findings, tumor grade, Ki-67 levels, stage, management, and survival outcomes.

Results. Among the 9 patients (6 females, 3 males; mean age: 58.56 years), 4 had well-differentiated NETs, and 5 had large cell neuroendocrine carcinomas. Common clinical presentations included right hypochondrial pain (100%), jaundice (22%), palpable mass (33%), and weight loss (56%). Surgical resection was performed in 3 cases, achieving R0 resection with negative margins. The overall survival was 8.7 months, with those undergoing curative surgery surviving a mean of 17.7 months compared to 4.2 months for non-surgical patients. Jaundice at diagnosis was significantly associated with poorer survival (mean survival: 2.5 months vs. 10.4 months without jaundice.

Conclusion. Gallbladder neuroendocrine neoplasms are rare tumors that present unique clinical challenges. This case series highlights the importance of early diagnosis and aggressive management, with jaundice at presentation serving as a critical prognostic factor. Surgical resection appears to offer potential survival benefits, though further studies are needed to refine management strategies for these rare neoplasms.

Keywords: *neuroendocrine tumors; gallbladder neoplasm; prognosis; surgery; jaundice*

For citation: Tidjane A., Bengueddach A., Kadri A., Derriche H., Ikhlef N., Iarbi H., Mansouri Ju., Meharzi S.I., Kehili H., Ourabah A., Tabeti B. Gallbladder neuroendocrine tumors: clinical characteristics, treatment, and survival based on nine observations. *Annaly khirurgicheskoy gepatologii = Annals of HPB surgery*. 2025; 30 (1): 86–93. https://doi.org/10.16931/1995-5464.2025-1-86-93 (In Russian)

The authors declare no conflict of interest.

Introduction

Gastrointestinal and pancreatobiliary neuroendocrine tumors (GNETs) are rare malignancies that arise from neuroendocrine cells within the gastrointestinal, biliary, or pancreatic tract [1]. They are classified into functioning and non-functioning tumors based on their ability to secrete hormones. According to the 2022 WHO classification, neuroendocrine neoplasms are further categorized into neuroendocrine tumors (NETs), neuroendocrine carcinomas (NECs), and mixed neuroendocrine-non-neuroendocrine neoplasms (MiNENs). Histological analysis is crucial for confirming the diagnosis and staging the disease [2].

Neuroendocrine neoplasm of gallbladder (GB-NENs) is a very rare entity, and represent less than 0.5% of all NETs , and 2% of all gallbladder neoplasm [3], The diagnosis of GB-NEN is often made incidentally during histological examination following a cholecystectomy. In cases where a gallbladder tumor is detected through radiological imaging, the diagnosis is confirmed through histological analysis of a biopsy or after final examination of the surgical specimen [3].

The management of GB-NENs is largely based on the treatment protocols for gallbladder adenocarcinoma, due to the lack of sufficient data specific to this rare disease. To date, no publication has provided enough comprehensive data to guide tailored management decisions for these tumors [4].

In this case series, we describe the clinical features, characteristics, histological findings, management strategies, and outcomes of GB-NENs treated within the Algerian West NET Network.

Material and methods

This study retrospectively recruited gallbladder neuroendocrine neoplasms (GB-NENs) through the West Algerian NET Network, which tracks neuroendocrine tumors diagnosed in the region. A multidisciplinary committee was responsible for case inclusion, management decisions, and outcome collection.

We reviewed cases diagnosed between December 2015 and September 2024, collecting data from 301 patients with gastrointestinal neuroendocrine tumors (GNETs), of which 9 cases were identified as GB-NENs. The diagnosis was confirmed through histological examination performed on fine-needle biopsies or surgical specimens from operated patients. Immunohistochemical staining, including chromogranin A and synaptophysin, was utilized for further classification.

Patient-related data were screened and included age, sex, clinical findings, tumor grade, Ki-67 level, stage of disease, and management and treatment details. Tumor classification followed the 2022 WHO guidelines. Disease-free survival and overall survival outcomes were monitored through clinical and radiological follow-up.

The comparison of overall survival between different subgroups was performed using the Log-Rank test, with statistical analysis conducted using IBM SPSS version 24. A P value of 0.05 was considered statistically significant, indicating a 95% confidence level.

Results

Of the total 301 patients diagnosed with gastrointestinal neuroendocrine tumors (GNETs), we identified 9 cases of gallbladder neuroendocrine neoplasms (GB-NENs), comprising 6 females and 3 males, resulting in a sex ratio of 0.5. The mean age was 58.56 ± 8.63 years. Among these cases, there were 4 instances of well-differentiated neuroendocrine tumors and 5 cases of large cell neuroendocrine carcinomas.

Regarding clinical presentation at diagnosis, right hypochondrial pain was present in all cases (9/9), jaundice in two cases (2/9), a palpable mass in three cases (3/9), and weight loss in five cases (5/9).

Regarding surgical management, 3 patients underwent surgical tumor resection with excision of segments 3 and 4b of the liver along with lymphadenectomy, while one this patients had an excision of the main bile duct. All details of our cases are presented in Table.

The mean overall survival of our patients was 8.7 ± 10.4 months (Fig. 1).When comparing overall survival between subgroups, patients who underwent curative surgery had a mean survival of 17.7 ± 15 months, compared to 4.2 ± 3.3 months for those managed without surgery. The log-rank test indicated that this difference was not statistically significant ($p = 0.317$) (Fig. 2).

When comparing overall survival between subgroups, patients who presented with jaundice had a mean survival of 2.5 ± 2.1 months, compared to 10.4 ± 11.3 months for those without jaundice at the time of diagnosis. The log-rank test indicated that this difference was statistically significant ($p = 0.004$) (Fig. 3).

The comparison of other patient subgroups, based on the presence or absence of weight loss ($p = 0.486$), palpable mass ($p = 0.107$), stage of cancer ($p = 0.849$), and grade of neuroendocrine tumor ($p = 0.317$), did not show any differences in survival.

Таблица. Демографические данные пациентов, клинические проявления, стадии заболевания, методы лечения и результаты

Table. Patient Demographics, Clinical Manifestations, Disease stage, Management and Outcomes of our patients

Cases No	Age (Sex)	Clinical manifestation				Histology	Grade	KI-67	Stage (TNM)	Managment	Disease free survivor	Survivor (statut)
		Abdominal pain	Jaundice	Palpable mass	Weight loss							
Case 1	71 (F)	•	•	•	•	LCNEC	3	80%	IV	Palliative care	/	01 (DCD)
Case 2	60 (F)	•	•	•	•	NET	2	20%	IIIb	XELOX	/	04 (DCD)
Case 3	68 (F)	•			•	LCNEC	3	80%	IIIb	-Surgery (R0) -EP -5FU+Ox	29	33 (DCD)
Case 4	54 (F)	•				LCNEC	3	90	IIb	Surgery (R0)	17	17 (Alive)
Case 5	43 (F)	•				LCNEC	3	60	IIIb	EP	/	10 (Alive)
Case 6	58 (M)	•				NET	2	16	IV	TEMCAP	/	4 (Alive)
Case 7	64 (F)	•		•	•	NET	2	7	IV	TEMCAP	/	4 (Alive)
Case 8	58 (M)	•			•	LCNEC	3	70	IV	-Surgery (R0) +MBD -TEMCAP	03	03 (Alive)
Case 9	51 (M)	•				NET	2	10	IV	TEMCAP	/	01 (Alive)

TEMCAP: Temozolomide + Capicitabine, EP: Etopozide + Cisplatin, FU+OX: 5-Fluorouracil + Oxaliplatin XELOX: Capicitabine + Oxaliplatin, DCD = Decided. R0 = Surgical resection with negative margins, hepatectomy S4b + S5 and lymphadenectomy. MBD = Main bile duct excision.

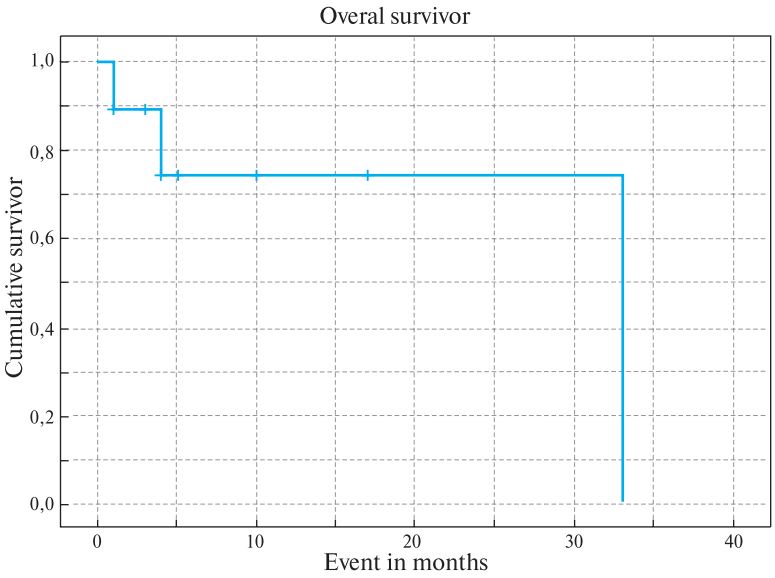

Рис. 1. Диаграмма. Общая выживаемость пациентов с нейроэндокринными новообразованиями желчного пузыря, метод Каплана–Мейера.

Fig. 1. Kaplan–Meier Curve of Overall Survival in Patients with Gallbladder Neuroendocrine Neoplasms).

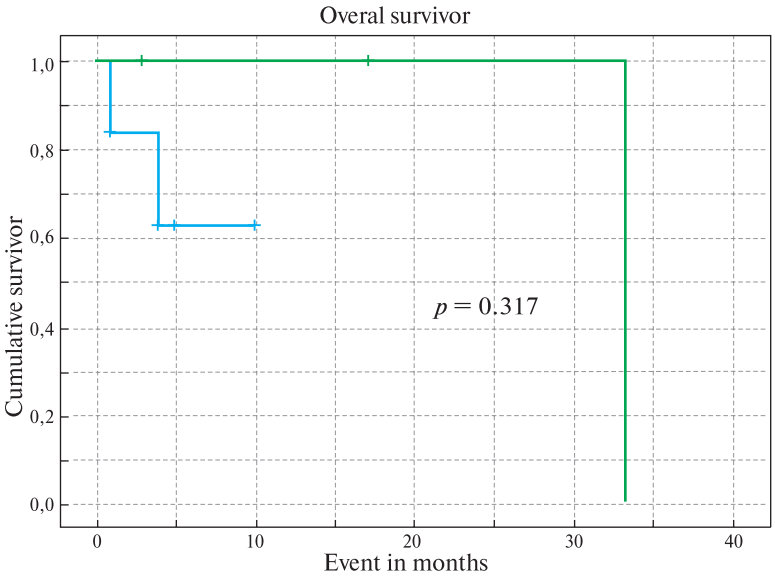

Рис. 2. Диаграмма. Общая выживаемость пациентов после операции и без операции, метод Каплана–Мейера, логранговый тест.

Fig. 2. Kaplan–Meier Curve Comparing Overall Survival Between Patients Undergoing Curative Surgery and Those Not Undergoing Surgery for Gallbladder Neuroendocrine Neoplasms Analyzed Using the Log-Rank Test.

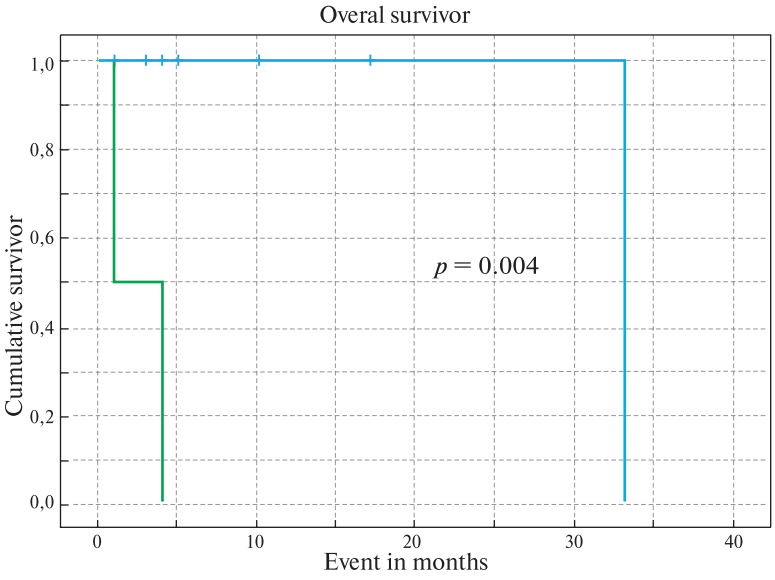

Рис. 3. Диаграмма. Общая выживаемость пациентов с желтухой и без желтухи, метод Каплана–Мейера, логранговый тест.

Fig. 3. Kaplan–Meier Curve for Overall Survival in Patients With and Without Jaundice, Analyzed Using the Log-Rank Test.

Discussion

Gallbladder neuroendocrine neoplasms (GB-NENs) are exceedingly rare, representing less than 5% of all neuroendocrine tumors and only 2% of gallbladder neoplasms [3]. Gallbladder neuroendocrine neoplasms (GB-NENs) accounted for 2.9% of all gastrointestinal neuroendocrine tumors (GNETs) recorded in our West Algerian NET Network. In this case series of 9 patients with GB-NENs, we observed a predominance of well-differentiated neuroendocrine tumors (NETs) and large cell neuroendocrine carcinomas (LCNECs), each with varying clinical presentations and survival outcomes. Our study underscores the importance of clinical awareness, accurate histological diagnosis, and aggressive management in achieving favorable outcomes, although significant challenges persist due to the rarity of this disease.

Our findings suggest that clinical presentation plays a critical role in determining patient prognosis. In our case series, all patients presented with right hypochondrial pain, which is consistent with previous reports of GB-NENs manifesting with non-specific symptoms. These vague symptoms often contribute to delayed diagnosis, as they can be easily mistaken for more common biliary or gastrointestinal conditions [5]. Interestingly, jaundice at diagnosis, observed in two cases, was associated with significantly poorer survival outcomes (mean survival of 2.5 months compared to 10.4 months in patients without jaundice). This mirrors findings from previous studies where jaundice has been recognized as a marker of advanced disease and worse prognosis, particularly in cases of gallbladder adenocarcinoma. The presence of jaundice likely indicates biliary tree involvement or extension into adjacent structures, which complicates surgical resection, increases postoperative challenges, and is associated with poorer overall survival [6, 7].

In our series, radical surgery was performed to manage resectable GB-NENs. This surgical approach included the resection of the gallbladder, segments 4b and 5 of the liver, and lymphadenectomy. In one case, additional procedures such as common bile duct excision and metastasectomy were also performed. In all cases, negative margins were obtained, assuring R0 resection. This radical surgical approach is associated with better overall survival in cases of gallbladder adenocarcinoma [8, 9].

In terms of surgical management, our data showed improved survival in patients who underwent curative resection compared to those treated non-surgically. The mean overall survival for surgical patients was 17.7 months, while non-surgical patients had a mean survival of only 4.2 months. However, this difference was not statistically significant ($p = 0.317$), likely due to the small sample size and insufficient follow-up in two surgically treated cases. Despite the lack of statistical significance, the trend suggests that surgical resection offers a potential survival advantage, as reported in other studies on gallbladder neuroendocrine tumors. Further research with larger cohorts and longer follow-up is needed to confirm this observation [3, 4, 10].

The histological classification of GB-NENs in our cohort ranged from well-differentiated NETs to high-grade LCNECs. Consistent with the literature, patients with high-grade tumors, particularly LCNECs, had poorer outcomes, reflecting the aggressive nature of these malignancies [10]. The Ki-67 proliferation index, which varied from 7% to 90% across cases, demonstrated a moderate positive correlation with survival; however, this correlation was not statistically significant ($p = 0.317$). This may be attributed to the fact that our series included only two cases of Grade 2 GB-NET. Nevertheless, this trend aligns with the 2022 WHO classification, which emphasizes the prognostic value of Ki-67 in neuroendocrine neoplasms (NENs), indicating that higher levels are generally associated with poorer outcomes [4, 10].

Despite advancements in understanding the biology of GB-NENs, optimal treatment strategies remain unclear. In the absence of specific guidelines, management is often based on protocols used for gallbladder adenocarcinoma. Chemotherapy regimens, such as XELOX , EP and most recently TEMCAP, were employed in our cohort, yet the outcomes varied widely. This further underscores the need for more comprehensive studies to establish standardized treatment protocols tailored to GB-NENs. The heterogeneity of treatments in our series also reflects the individualized approach often necessary for these rare cases [4, 11].

Our case series is not without limitations. First, the retrospective design introduces potential biases, particularly in the selection of patients for surgery versus palliative care. Additionally, the small sample size limits the generalizability of our findings, although it is in keeping with the rarity of the disease. Finally, the heterogeneous management strategies employed make it difficult to draw definitive conclusions about the best treatment approach for these tumors.

Looking forward, future research should focus on larger multicenter studies to better characterize the natural history of GB-NENs and refine treatment guidelines. Prospective studies exploring the role of surgery, chemotherapy, rediotherapy and targeted therapies will be crucial in improving outcomes for these patients.

In summary, gallbladder neuroendocrine neoplasms (GB-NENs) are rare malignancies that require careful diagnosis and management. This study, which includes Algerian patients, highlights the predominance of well-differentiated NETs and large cell neuroendocrine carcinomas, with jaundice at diagnosis serving as a critical prognostic factor linked

to poorer outcomes. While surgical resection shows potential survival benefits, the small sample size limits its definitive conclusions.

Author contributions

Tidjane A. – data analysis, and study conception, participate to data collection, and participate to the writing of this manuscript.

Bengueddach A. – data analysis, and study conception, participate to data collection, and participate to the writing of this manuscript.

Kadri A. – participate to data collection, and participate to the writing of this manuscript.

Derriche H. – participate to data collection, and participate to the writing of this manuscript.

Ikhlef N. – participate to data collection, and participate to the writing of this manuscript.

Iarbi H. – participate to data collection, and participate to the writing of this manuscript.

Mansouri Ju. – participate to data collection, and participate to the writing of this manuscript.

Meharzi S.I. – participate to data collection, and participate to the writing of this manuscript.

Kehili H. – participate to data collection, and participate to the writing of this manuscript.

Ourabah A. – participate to data collection, and participate to the writing of this manuscript.

Tabeti B. – data analysis, and study conception, participate to data collection, and participate to the writing of this manuscript.

All authors approuve the final version of this manuscript.

Список литературы [References]

1. Ahmed M. Gastrointestinal neuroendocrine tumors in 2020. *World J. Gastrointest. Oncol.* 2020; 12 (8): 791. https://doi.org/10.4251/wjgo.v12.i8.791
2. Rindi G., Mete O., Uccella S., Basturk O., La Rosa S., Brosens L.A.A., Ezzat S., de Herder W.W., Klimstra D.S., Papotti M., Asa S.L. Overview of the 2022 WHO Classification of Neuroendocrine Neoplasms. *Endocr. Pathol.* 2022; 33 (1): 115–154. https://doi.org/10.1007/s12022-022-09708-2
3. Tidjane A., Boudjenan N., Bengueddach A., Kadri A., Ikhlef N., Benmaarouf N., Tabeti B. Pure large cell neuroendocrine carcinoma of the gallbladder, is surgical relentlessness beneficial? A case report and literature review. *Int. Cancer Conf. J.* 2021; 10 (2): 127. https://doi.org/10.1007/s13691-020-00461-z
4. Cai X.C., Wu S.D. Gallbladder neuroendocrine carcinoma diagnosis, treatment and prognosis based on the SEER database: A literature review. *World J. Clin. Cases.* 2022; 10 (23): 8212–8223. https://doi.org/10.12998/wjcc.v10.i23.8212
5. Miyamoto R., Kikuchi K., Uchida A., Ozawa M., Nagai K., Maeda M., Kemmochi A., Inagawa S., Yamamoto M. Large cell neuroendocrine carcinoma of the gallbladder: a case report and literature review. *Int. Surg.* 2016; 101 (9–10): 458–464. https://doi.org/10.9738/INTSURG-D-16-00122.1
6. Dasari B.V.M., Ionescu M.I., Pawlik T.M., Hodson J., Sutcliffe R.P., Roberts K.J., Muiesan P., Isaac J., Marudanayagam R., Mirza D.F. Outcomes of surgical resection of gallbladder cancer in patients presenting with jaundice: A systematic review and meta-analysis. *J. Surg. Oncol.* 2018; 118 (3): 477–485. https://doi.org/10.1002/jso.25186
7. Yang X.W., Yuan J.M., Chen J.Y., Yang J., Gao Q.G., Yan X.Z., Zhang B.H., Feng S., Wu M.C. The prognostic importance of jaundice in surgical resection with curative intent for gallbladder cancer. *BMC Cancer.* 2014; 14 (1): 652. https://doi.org/10.1186/1471-2407-14-652
8. IHPBA-APHPBA International Study Group of Gallbladder Cancer; Palepu J., Endo I., Chaudhari V.A., Murthy G.V.S., Chaudhuri S. et al. 'IHPBA-APHPBA clinical practice guidelines': international Delphi consensus recommendations for gallbladder cancer. *HPB (Oxford).* 2024; 26 (11): 1311–1326. https://doi.org/10.1016/j.hpb.2024.07.411
9. Tidjane A., Boudjenan-Serradj N., Khalifa S., Ikhlef N., Bengueddach A., Larbi H. et al. Adenosquamous carcinoma of gallbladder associated with biliopancreatic maljunction and Todani 1c choledochal cyst: A case report. *Adv. Dig. Med.* 2023; 10 (3): 184–188.
10. Gogna S., Samson D., Gachabayov M., Rojas A., Felsenreich D.M., Koo D., Gu K., Quintero L., Miller K.R., Azim A., Da Eric Dong X. Neuroendocrine neoplasms of the gallbladder: early detection and surgery is key to improved outcome. *Langenbecks Arch. Surg.* 2022; 407 (1): 197–206. https://doi.org/10.1007/s00423-021-02256-z
11. Arrivi G., Verrico M., Roberto M., Barchiesi G., Faggiano A., Marchetti P., Mazzuca F, Tomao S. Capecitabine and temozolomide (CAPTEM) in advanced neuroendocrine neoplasms (NENs): a systematic review and pooled analysis. *Cancer Manag. Res.* 2022; 14: 3507–3523. https://doi.org/10.2147/CMAR.S372776

Сведения об авторах [Authors info]

Anisse Tidjane – Professor, Department of Hepatobiliary Surgery, EHU-1st November 1954, University of Oran 1, Oran, Algeria. https://orcid.org/0000-0002-3264-2441. E-mail: tidjane.anisse@univ-oran1.dz

Aicha Bengueddach – Associatte Professor, Department of Medical Oncology, EHU-1st November 1954, University of Oran 1, Oran, Algeria. https://orcid.org/0000-0002-8282-4534. E-mail: aicha.bengueddach@gmail.com

Amine Kadri – Doctor, Head of Laboratory, Laboratoire d'Anatomie Pathologique, Dr Kadri, Oran, Algeria. https://orcid.org/0000-0001-6547-0714. E-mail: kadridiagnostic@gmail.com

Hamid Derriche – Doctor, Head of Department, Etablissement Hospitalier Kara, Oran, Algeria. https://orcid.org/0009-0006-5295-6049. E-mail: h.derriche@cliniquekara.dz

Nacim Ikhlef – Doctor, Department of Hepatobiliary Surgery, EHU-1st November 1954, University of Oran 1, Oran, Algeria. https://orcid.org/0000-0001-8695-6297. E-mail: ikhlef2000@yahoo.fr

Hakim Larbi – Doctor, Department of Hepatobiliary Surgery, EHU-1st November 1954, University of Oran 1, Oran, Algeria. https://orcid.org/0000-0001-6144-9408. E-mail: Larbi.hkmed@yahoo.fr

Juba Mansouri – Doctor, Department of Hepatobiliary Surgery, EHU-1st November 1954, University of Oran 1, Oran, Algeria. https://orcid.org/0000-0003-2622-4507. E-mail: jubamansouri91@gmail.com

Sif Islem Meharzi – Doctor, Department of Hepatobiliary Surgery, EHU-1st November 1954, University of Oran 1, Oran, Algeria. https://orcid.org/0000-0001-6198-6879. E-mail: Meharzisif@live.fr

Hakima Kehili – Professor, Department of Medical Oncology, EHU-1st November 1954, University of Oran 1, Oran, Algeria. https://orcid.org/0000-0001-7881-5523. E-mail: kehilihakima@yahoo.fr

Anissa Ourabah – Doctor Department of Hepatobiliary Surgery, EHU-1st November 1954, University of Oran 1, Oran, Algeria. https://orcid.org/0009-0000-6389-5209. E-mail: anissaourabah@hotmail.com

Benali Tabeti – Professor, Head of Department, Department of Hepatobiliary Surgery, EHU-1st November 1954, University of Oran 1, Oran, Algeria. https://orcid.org/0000-0002-3391-2335. E-mail: btabeti@yahoo.fr

For correspondence*: Pr Anisse Tidjane – e-mail: tidjane.anisse@univ-oran1.dz

Статья поступила в редакцию журнала 20.11.2024. Принята к публикации 28.01.2025.
Received 20 November 2024. Accepted for publication 28 January 2025.

Комментарий к статье “Нейроэндокринные опухоли желчного пузыря: клинические характеристики, лечение и выживаемость на примере девяти наблюдений”

Статья посвящена описанию крайне редкого заболевания – нейроэндокринной опухоли (НЭО) желчного пузыря. Частота этой опухоли составляет менее 5% всех НЭО желудочно-кишечного тракта при том, что распространенность собственно НЭО не превышает 0,75 на 100 тыс. населения. Авторы описали 9 наблюдений как высокодифференцированных НЭО, так и нейроэндокринных карцином (НЭК) желчного пузыря, что является наибольшим опытом, представленным из одного региона мира. Качественно проведенное иммуногистохимическое исследование позволяет отличить НЭК от смешанных форм злокачественных опухолей желчного пузыря (сочетание НЭК с аденокарциномой). Описана клиническая картина заболевания и ее связь с прогнозом выживаемости. Инструментальная диагностика, семиотика НЭО и рака желчного пузыря мало чем отличаются друг от друга, но позволяют установить стадию заболевания. Наверное, в связи с этим авторы статьи подробно не останавливаются на этом аспекте.

У большинства пациентов выявлен распространенный онкологический процесс, в связи с чем только 3 больным удалось выполнить хирургическое вмешательство в объеме R0, остальным применяли различные схемы химиотерапии. Выживаемость после радикального лечения была, несомненно, больше, чем после химиотерапии, что связано с агрессивностью хирургической тактики и у части больных с IV стадией заболевания (разница из-за небольшого числа наблюдений статистически не достоверна). Отдаленные результаты лечения при НЭК желчного пузыря хуже, чем при раке этого органа. Статья представляет интерес как для хирургов-гепатологов, онкологов, так и специалистов лучевой диагностики.

Заместитель председателя Медицинского общества по лечению нейроэндокринных опухолей, Россия
профессор А.В. Егоров

Comment on the article “Gallbladder neuroendocrine tumors: clinical characteristics, treatment, and survival based on nine observations”

The paper describes an extremely rare disease – neuroendocrine tumors of the gallbladder. The incidence of this kind of tumors accounts for less than 5% of all neuroendocrine tumors in the gastrointestinal tract, while the prevalence of neuroendocrine tumors does not exceed 0.75 per 100,000 population. The study involved nine cases, including both well-differentiated neuroendocrine tumors and neuroendocrine carcinomas of the gallbladder, constituting the largest experience reported from a single region in the world. A qualitative immunohistochemical study allows for the differentiation of neuroendocrine carcinomas from mixed forms of malignant tumors of the gallbladder (combination of neuroendocrine carcinoma with adenocarcinoma). The paper describes the clinical picture of the disease and its correlation with survival prognosis. Instrumental diagnostics and the semiotics of neuroendocrine tumors and gallbladder cancer are largely similar but specifically instrumental in staging of the disease. The authors of the paper do not dwell upon this aspect in detail partly due to this similarity.

Most patients presented with advanced oncological processes, and therefore, only three patients underwent R0 surgical resection, while the others received various chemotherapy regimens. The survival rate after radical treatment was found to be clearly higher than after chemotherapy, which can be attributed to the aggressiveness of surgical tactics and, for some patients, to stage IV disease (the difference is statistically insignificant due to the small number of observations). Long-term treatment outcomes in gallbladder neuroendocrine carcinomas are found to be poorer than in gallbladder cancer. The paper is of interest to hepatobiliary surgeons, oncologists, and specialists in radiological diagnostics.

A.V. Egorov, Prof., Deputy Chairman
Medical Society for the Treatment
of Neuroendocrine Tumors, Russia