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МОРФОЛОГИЧЕСКАЯ ХАРАКТЕРИСТИКА И ОСЛОЖНЕНИЯ РАКА ЖЕЛУДКА

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MORPHOLOGICAL CHARACTERISTICS AND COMPLICATIONS OF GASTRIC CANCER

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Резюме. В этой статье мы показали, что аденокарцинома составляла 65,2% случаев рака желудка. У 60,8% пациентов опухоль была высокой степени злокачественности, что указывает на поздние стадии на момент постановки диагноза. Клиническое течение осложнилось изъязвлением (69,56%), асцитом (8,7%), тромбозом воротной вены (4,34%), перитонитом (13,04%) и анемией (8,7%). Иммуногистохимия стала важным инструментом для точной дифференциальной диагностики.

Ключевые слова: рак желудка, метастазы, иммуногистохимия, степень злокачественности, TNM.

Resume. In this article, we revealed that adenocarcinoma accounted for 65.2% of cases with gastric cancer. 60.8% of patients presented with high-grade tumour, indicating advanced stages at diagnosis. The clinical course was complicated by ulceration (69.56%), ascites (8.7%), portal vein thrombosis (4.34%), peritonitis (13.04%), and anemia (8.7%). Immuno-histochemistry emerged as an essential tool for accurate differential diagnosis.

Keywords: gastric cancer, metastasis, immuno-histochemistry, grade, TNM.

Relevance. Gastric cancer is a neoplasm that originates from the stomach cells, which is classified pathologically into categories as follows: adenocarcinoma, squamous cell carcinoma, other rare types like gastrointestinal stromal tumours (GIST), carcinoids, and lymphomas [1]. Gastric cancer who ranked as the 5th most common cancer worldwide and 3th leading cause of cancer death globally. Gastric cancer rates vary globally, the highest incidence in Eastern Asia 31.16% [2]. It is a multifactorial diseases (environmental factors examples: smoking, nitrate, salted food: host factors examples: Barret's mucosa, Menetrier's disease, blood group 'A': genetic factors examples: CDH1 gene mutation, APC gene mutation) [3].

Aim: the study was to compare morphological characteristics and complications among group of patients with gastric cancer.

Objectives:

1. Analyse the gender and age of patients with gastric cancer.

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2. Analyse the morphological characteristics of affected part of the stomach.

3. Analyse the grading of cancer in patients by TNM classification and evaluate IHC marker.

4. Analyse the complications of gastric cancer.

Materials and methods. 18 Stomach biopsies and 5 surgical materials were analysed using staining technique (H&E) and were evaluated on light microscopy. Data for this study was obtained from referral charts of patients. Out of 5 surgical materials 3 were classified by TNM. Clinical data were obtained from referral charts. For 2 patients with B cell lymphoma and 1 patient with adenocarcinoma were evaluated with IHC (Immuno-histochemistry). IHC was performed in 13.04% (3 cases) CD20+, BCl6, Ki67 50-60%; CK7+, HERneu1+, Pax8+, CA19+, GATA3+; CD45+++, CD20+++, CD3+, Ki67-80%, bc16+++.

Results and their discussions. A detailed histopathological study was conducted on 23 patients there were 18 (78.2%) Males and 5 (21.7%) females [M: F=3.6:1] aged between 45 to 86 years with mean age of 60.83 ± 10.37 years (fig.1). Amongst 23 patients, 65.2% (15 cases) were diagnosed with adenocarcinoma; 26.08% (6 cases) were diagnosed with undifferentiated carcinoma and 8.7% (2 cases) with B cell lymphoma. 60.8% (14 cases) High grade cancer, 13.04% (3 cases) moderate cancer and 21.7% (5 cases) low grade cancer was analysed. Metastasis were found in 17.4% (4 cases) out of which 1 female patient with 71 years of age was seen with Kruckenberg metastasis in ovaries. Signet ring cell carcinoma was found in 8.6% (2 cases). In some patients were found complications such as ulceration (69.56%/16 cases), ascites (8.7%/2 cases), portal vein thrombosis (4.34%/1 case), (4.34%/1 case), fibrinous purulent peritonitis (13.04%/3 cases) and anaemia (8.7%/2 cases).

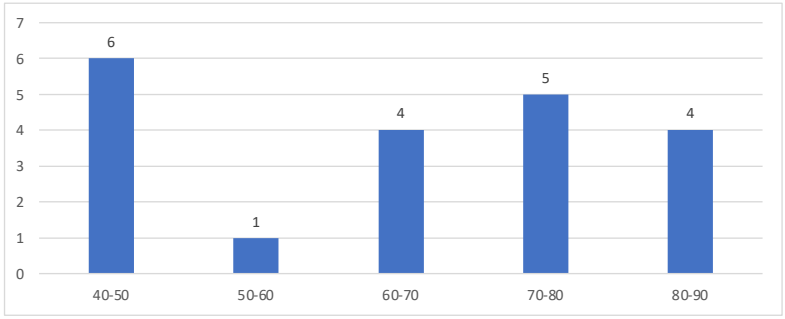

Fig. 1 – Age data

There are macroscopic morphological types that can be seen in patient during endoscopy. A visual polypoid type (Type 1); ulcerative type (Type 2); infiltrative ulcerative (Type 3) (fig.2).

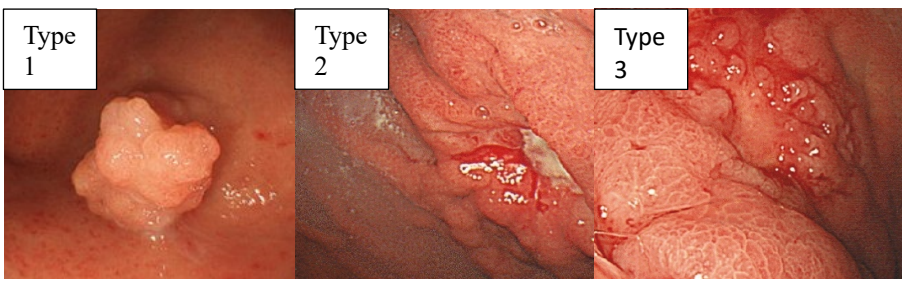

Fig. 2 – Endoscopic findings during stomach examination (morphological types)

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Among the 23 cases 15 (65.2%) are adenocarcinomas the Microscopic examination reveals adenocarcinoma, characterized by infiltrating glandular patterns in the stroma. Grossly, the tumor presents as an infiltrative and ulcerative lesion.

Representing 6 cases (26.08%) from 23, this underscores the presence of undifferentiated carcinoma within the cohort. Microscopically undifferentiated carcinoma consistis of poorly differentiated signet-ring cells, identifiable by their large vacuoles and crescent-shaped nuclei. The gross examination reveals absence of rugal folds, further supporting the diagnosis (fig.3).

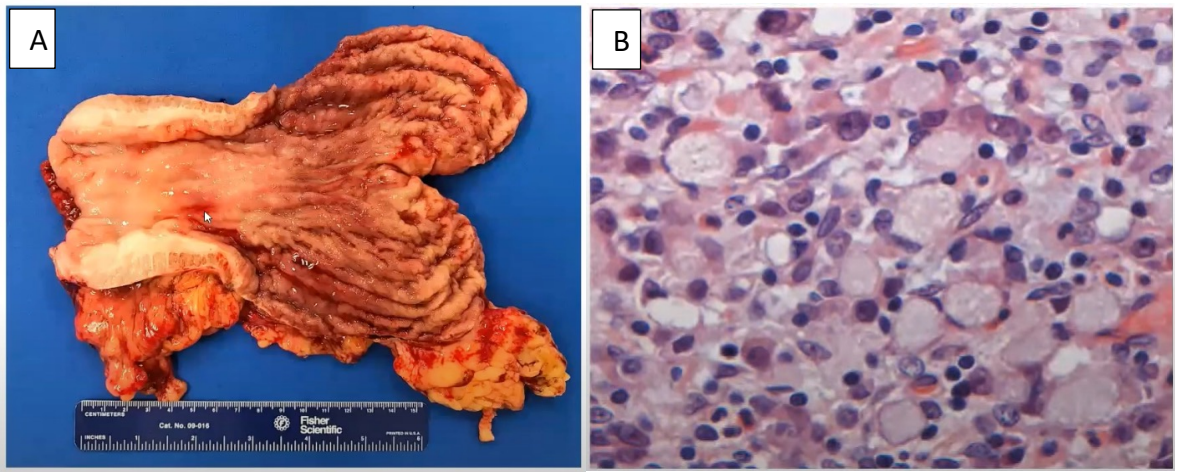

Fig. 3 – A – gross appearance of undifferentiated carcinoma; B – microscopical appearance of signet-ring cancer in the stomach (H&E, 40×)

B-cell lymphoma 2 cases (8.7%) indentified with help of immunohistochemistry (CD20+, CD45+, BCL-6+, KI67 80%) as gastric diffuse large B-cell lymphoma (a non-Hodgkin lymphoma). Microscopic examination reveals a diffuse infiltrate of large neoplastic lymphoid cells within the gastric mucosa. Grossly, it presents as a polypoid or nodular lesion, potentially with ulceration, hemorrhage, and associated lymphoid hyperplasia. (fig.4)

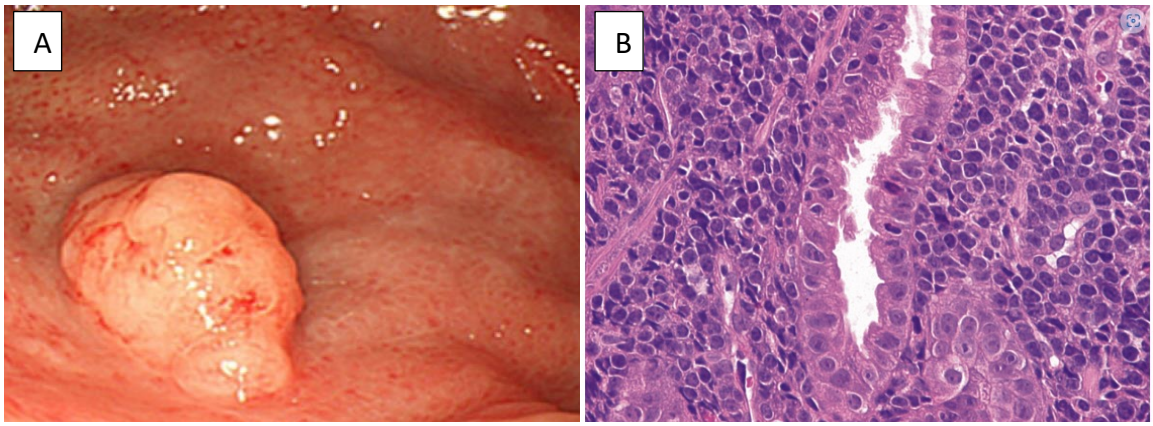

Fig. 4 – A- Endoscopic findings of gastric mucosa-associated lymphoma; B - Microscopic examination documented a diffuse infiltrate of large, atypical lymphoid cells in the oxyntic mucosa (H&E,10×)

The TNM classification stages cancer by assessing Tumor size/invasion, spread to lymph nodes and distant metastasis. Higher numbers indicate - more advanced disease in

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each category (T1-T4, N0-Nx, M0-M1, Mx). The TNM stages helps to determine prognosis and guide treatment decisions for cancer patients. 13.04% (3 cases) were classified by TNM: T4N1M2; T4NXM1; T4NXM1 (fig.5).

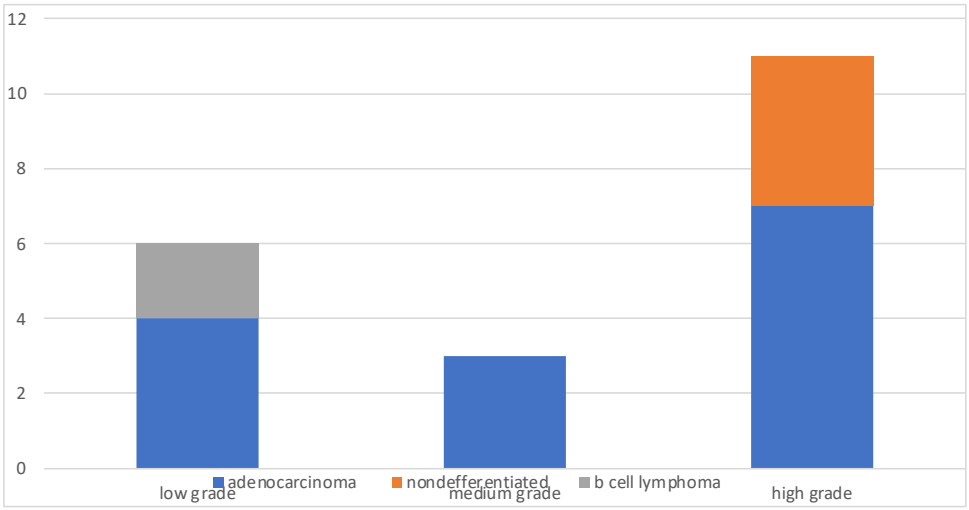

Fig. 5 – Tumor grading

Notable Case: 71-year-old female with Kruckenberg metastasis in ovary (Fig.6).

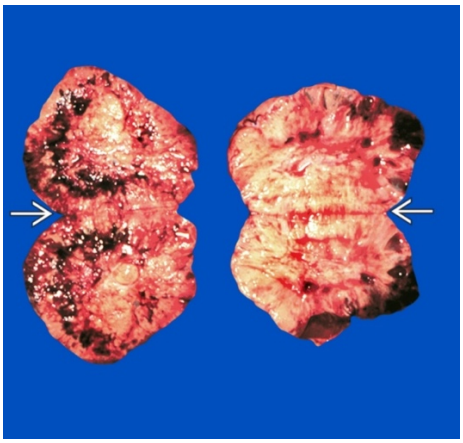

Fig. 6 – Ovarian metastasis from gastric cancer (Krukenberg tumor), bilateral, solid ovarian masses are depicted

Complications that have been identified during examination are: ulceration, which was observed in 69.56% of cases (16 patients), peritonitis, affecting 13.04% of patients (3 cases), and ascites, present in 8.7% of the cohort (2 cases). Less frequently, severe anemia was noted in 8.7% of cases (2 patients). Portal vein thrombosis was the least common complication, observed in 4.34% of patients (1 case). These complications highlight the severity and varied presentation of the underlying conditions being studied [4].

IHC examination played a crucial role in this study, enabling definitive diagnosis and classification of challenging cases. By identifying specific protein markers, IHC facilitated accurate tumor subtyping and provided valuable prognostic information. Furthermore, IHC assisted in the selection of targeted therapies, ultimately contributing to a more personalized approach to patient care. Immunohistochemistry (IHC) evaluation was performed in a subset of cases to further characterize the underlying pathology. Specifically, IHC was conducted

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for 2 patients diagnosed with B-cell lymphoma and 1 patient with adenocarcinoma, aiding in definitive classification and subtyping (fig.7).

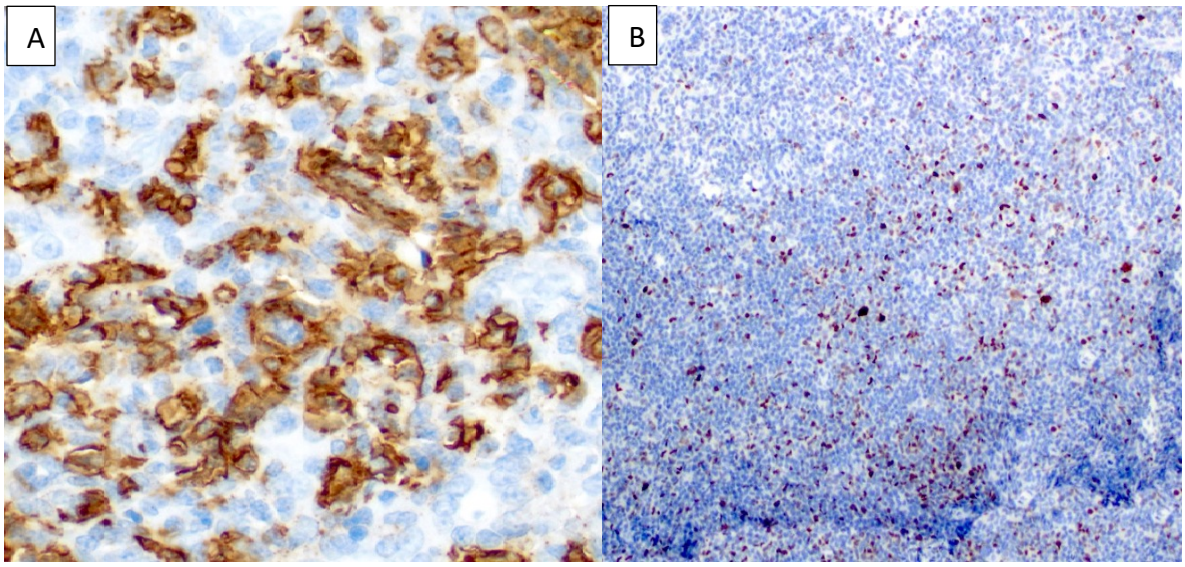

Fig. 7 – Gastric mucosa showing a diffuse infiltrate of large neoplastic lymphoid cells. A - Lymphoma cells are positive for CD20 and B - bcl6 in disrupted geminal centers

Conclusion. This study underscores the significant disparity in gastric cancer incidence, revealing that men are 3.6 times more likely to develop the disease than women. Adenocarcinoma was identified as the predominant histological subtype, accounting for a substantial 65.2% of cases. Furthermore, a concerning proportion of patients (60.8%) presented with high-grade tumour, indicating advanced stages at diagnosis. The clinical course was often complicated by severe ulceration (69.56%), ascites (8.7%), portal vein thrombosis (4.34%), fibrinous purulent peritonitis (13.04%), and anemia (8.7%), emphasizing the aggressive nature and varied presentations of gastric cancer. Finally, in cases with undifferentiated morphology, IHC emerged as an essential tool for accurate differential diagnosis, highlighting its critical role in guiding appropriate management and treatment strategies. These findings underscore the importance of continued research to improve early detection and therapeutic interventions for gastric cancer.

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