



New Day in Medicine
Новый День в Медицине

NDM



TIBBIYOTDA YANGI KUN

Ilmiy referativ, marifiy-ma'naviy jurnal



AVICENNA-MED.UZ



ISSN 2181-712X.
EiSSN 2181-2187

9 (83) 2025

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ТИББИЁТДА ЯНГИ КУН НОВЫЙ ДЕНЬ В МЕДИЦИНЕ NEW DAY IN MEDICINE

*Илмий-рефератив, маънавий-маърифий журнал
Научно-реферативный,
духовно-просветительский журнал*

УЧРЕДИТЕЛИ:

**БУХАРСКИЙ ГОСУДАРСТВЕННЫЙ
МЕДИЦИНСКИЙ ИНСТИТУТ
ООО «ТИББИЁТДА ЯНГИ КУН»**

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исследовательский центр хирургии имени
А.В. Вишневского является генеральным
научно-практическим
консультантом редакции

Журнал был включен в список журнальных
изданий, рецензируемых Высшей
Аттестационной Комиссией
Республики Узбекистан
(Протокол № 201/03 от 30.12.2013 г.)

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10 (84)

2025

октябрь

www.bsmi.uz

<https://newdaymedicine.com> E:

ndmuz@mail.ru

Тел: +99890 8061882

Received: 20.09.2025, Accepted: 06.10.2025, Published: 10.10.2025

UDC 611.33- 616.33-073.75

X-RAY ANATOMY OF THE STOMACH AND ITS TYPOLOGICAL CHARACTERISTICS DEPENDING ON AGE AND GENDER

Khudoyberdiyev Dilshod Karimovich <https://orcid.org/0009-0004-7508-7400>

E-mail: dilshod.khudoyberdiyev@mail.ru

Teshaev Shuxrat Jumaevich <https://orcid.org/0009-0002-1996-4275>

Bukhara State Medical Institute named after Abu Ali ibn Sina, Uzbekistan, Bukhara, st. A. Navoi.

1 Tel: +998 (65) 223-00-50 e-mail: info@bsmi.uz

✓ Resume

Journals, materials of scientific conferences, as well as other information sources were studied to collect reliable information on the impact of various factors on gastric x-ray anatomy. The obtained data will reveal the mechanism of constitutional factors in the development of any disease, including chronic diseases of the gastrointestinal tract. The study of this dependence of the features of the course of the pathology of the gastrointestinal tract in persons from 7 types of constitution seems to us promising for further study, which must be taken into account by clinicians as part of an individual approach to the patient.

Key words: age-related X-ray anatomy, stomach, various factors.

РЕНТГЕН-АНАТОМИЯ ЖЕЛУДКА И ЕЁ ТИПОЛОГИЧЕСКАЯ ХАРАКТЕРИСТИКА В ЗАВИСИМОСТИ ОТ ВОЗРАСТА И ПОЛА

Худойбердиев Дилшод Каримович <https://orcid.org/0009-0004-7508-7400>

E-mail: dilshod.khudoyberdiyev@mail.ru

Тешаев Шухрат Жумаевич <https://orcid.org/0009-0002-1996-4275>

Бухарский государственный медицинский институт имени Абу Али ибн Сины, Узбекистан, г.

Бухара, ул. А. Навои. 1 Тел: +998 (65) 223-00-50 e-mail: info@bsmi.uz

✓ Резюме

Для сбора достоверной информации о влиянии различных факторов на рентгеноанатомию желудка были изучены журналы, материалы научных конференций, а также другие источники информации. Полученные данные позволяют раскрыть механизм влияния конституциональных факторов на развитие любого заболевания, в том числе хронических заболеваний желудочно-кишечного тракта. Изучение данной зависимости особенностей течения патологии желудочно-кишечного тракта у лиц 7 типов конституции представляется нам перспективным для дальнейшего изучения, что необходимо учитывать врачам-клиницистам в рамках индивидуального подхода к пациенту.

Ключевые слова: возрастная рентгеноанатомия, желудок, различные факторы.

OSHQOZONNING RENTGEN-ANATOMIYASI VA UNING YOSH HAMDA JINSGA BOG‘LIQ TIPOLOGIK O‘ZIGA XOSLIGI

Xudoyberdiyev Dilshod Karimovich <https://orcid.org/0009-0004-7508-7400>

E-mail: dilshod.khudoyberdiyev@mail.ru

Teshaev Shuxrat Jumaevich <https://orcid.org/0009-0002-1996-4275>

Abu Ali ibn Sino nomidagi Buxoro davlat tibbiyot instituti, O‘zbekiston, Buxoro sh. A. Navoiy

kochasi 1 Tel: +998 (65) 223-00-50 e-mail: info@bsmi.uz

✓ **Rezyume**

Oshqozon rentgen anatomiyasiga turli omillarning ta'siri to'g'risida ishonchli ma'lumot to'plash uchun jurnallar, ilmiy konferentsiyalar materiallari, shuningdek, boshqa axborot manbalari o'rganildi. Olingan ma'lumotlar harqanday kasallikning, shu jumladan oshqozon-ichak traktining surunkali kasalliklarining rivojlanishidagi konstitutsiyaviy omillarning mexanizmini ochib beradi. Odamlarda oshqozon-ichak trakti patologiyasi xususiyatlarining 7 turdagi konstitutsiyaga bog'liqligini o'rganish uchun istiqbolli ko'rinadi, bu esa klinitsistlar tomonidan bemorga individual yondashuvning bir qismi sifatida e'tiborga olinishi kerak.

Kalit so'zlar: yoshga bog'liq rentgen anatomiyasi, oshqozon, turliomillar.

Relevance

Modern gastroenterology and diagnostic radiology demand a highly accurate and individualized approach to the diagnosis of gastrointestinal (GI) pathologies, taking into account both morphological and demographic parameters of the patient. The stomach is a dynamic organ whose anatomical structure undergoes significant morphofunctional alterations under the influence of age-related, constitutional, and pathophysiological processes. Despite the widespread application of radiographic imaging techniques, there remains a lack of systematic methodologies that enable clinicians to consider typological and age-dependent anatomical variations of the stomach during diagnostic evaluation.

Modern gastrointestinal diagnostic modalities require a comprehensive, multimodal approach that integrates not only pathomorphological changes, but also constitutional morphology, demographic factors, and ontogenetic characteristics of the stomach. Although significant advances have been made in endoscopic visualization, ultrasonography, and computed tomography (CT), the role of conventional radiology—especially in accounting for age-related and somatotypical variability—remains underappreciated. Research has demonstrated that the gastric configuration, topographic position, and volumetric parameters of the stomach vary substantially depending on age, sex, and anthropometric indices. For instance, in neonates the stomach is elongated, tubular, and horizontally oriented; in geriatric patients, it becomes atonic, ptotic, and distended, with flattened gastric mucosal rugae, an expanded gastric fundus, and diminished peristaltic contractility [1,6].

Regional studies assessing gastric morphology with respect to anthropometric measurements and age-related features have underscored the importance of somatotype differentiation (asthenic, normosthenic, hypersthenic) in determining radiographic gastric anatomy. These findings highlight the necessity of developing region-specific diagnostic algorithms that incorporate ethnic and constitutional variability [9,11].

Despite numerous large-scale investigations into age-related morphophysiological features of various organs and systems in both sexes, insufficient attention has been given to the stomach as an organ possessing its own morphological constitution. While many works have examined the radiological anatomy and myofascial-connective tissue structure of the stomach, they were predominantly local in scope and often failed to consider constitutional typology or pathophysiological diversity [3,4,5].

Although the study of constitutionally determined pathology dates back to ancient times, it continues to hold significant relevance in modern medicine. The concept of human constitution reflects an individual's inherent set of morphological, physiological, and psychodynamic traits, which persist throughout life and define the body's homeostatic adaptability and reactivity to external and internal stimuli [8,10]. Extensive research has demonstrated the constitutional conditionality of various vital physiological processes, including metabolism, neurohumoral regulation, and visceral function [7].

Among adolescents, functional gastric disorders are frequently represented by hyperkinetic gastric dyskinesia, cardiospasm, pylorospasm, and functional hypersecretion of gastric acid. The most prevalent gastroduodenal diseases include: 1) acute and chronic gastritis and duodenitis (commonly superficial and catarrhal; less often hyperplastic or atrophic, with gastric acidity increased, normal, or decreased); 2) duodenogastric reflux; 3) gastric and duodenal erosions (acute, chronic, or cicatricial) and other precancerous lesions; 4) peptic ulcer disease (PUD) of the stomach and duodenum, including symptomatic ulcers associated with hyperglucocorticoidism and hypomineralocorticoidism; 5) gastric polyposis and related mucosal proliferative conditions [2].

Therefore, the integration of international and national research findings is essential for developing more precise, evidence-based, and personalized diagnostic strategies in gastroenterology. In Uzbekistan, amid the growing prevalence of chronic gastric pathologies and the increasing proportion of elderly patients, the development, validation, and clinical implementation of specialized diagnostic algorithms represent one of the most urgent and strategically important objectives for modern medical science and clinical practice.

Purpose of the study: To investigate the age-related features of the radiographic anatomy of the stomach under normal and pathological conditions, as well as to develop an algorithm for differential diagnosis of gastrointestinal (GI) diseases considering the patient's typological (constitutional) characteristics.

Materials and methods

This study analyzed the clinical and radiological data of 120 patients undergoing inpatient treatment for various gastrointestinal disorders at a multidisciplinary medical institution. To ensure the objectivity and structural consistency of the analysis, all participants were divided into three groups. The first (control) group included 30 individuals without any diagnosed gastrointestinal pathology, equally distributed by sex and age, serving as a reference sample to determine the normal radiographic-anatomical parameters of the stomach. The second group comprised 55 male patients diagnosed with various gastrointestinal diseases, including chronic gastritis, peptic ulcer disease of the stomach and duodenum, and neoplasms of diverse etiologies. The third group consisted of 35 female patients with a similar spectrum of gastric and duodenal pathologies. All participants were classified according to body constitution types—asthenic, normosthenic, and hypersthenic—based on a comprehensive evaluation of anthropometric parameters such as height, weight, body mass index (BMI), and chest circumference.

Result and discussions

A detailed analysis of 120 radiographic, multislice computed tomography (MSCT), and endoscopic findings from patients with various gastric pathologies, as well as from the control group, taking into account age, sex, and constitutional features, yielded the following key results.

Age-related features of normal gastric radiographic anatomy: The analysis of the control group revealed distinct patterns of variation in gastric shape and position across different age categories. In infants and young children, the stomach most commonly exhibited a “hook-shaped” (J-shaped) configuration, positioned higher within the abdominal cavity, with a generally normotonic gastric tone. In adolescents and adults, the stomach tended to assume a “horn-shaped” (corniform) configuration, with more pronounced gastric mucosal rugae, reflecting increased muscular wall tone and functional motility. In elderly patients, a marked tendency toward gastric hypotonia, gastropnoia, and reduced gastric peristalsis was observed. The stomach appeared more elongated and distended, with attenuated mucosal folds and diminished tone of the muscular layer.

Age-dependent changes were also associated with altered gastric emptying dynamics during barium meal fluoroscopy: in children, the evacuation rate of the barium suspension was significantly accelerated, whereas in elderly subjects it was markedly delayed, which correlated with the age-related decline in gastrointestinal motility and smooth muscle contractility.



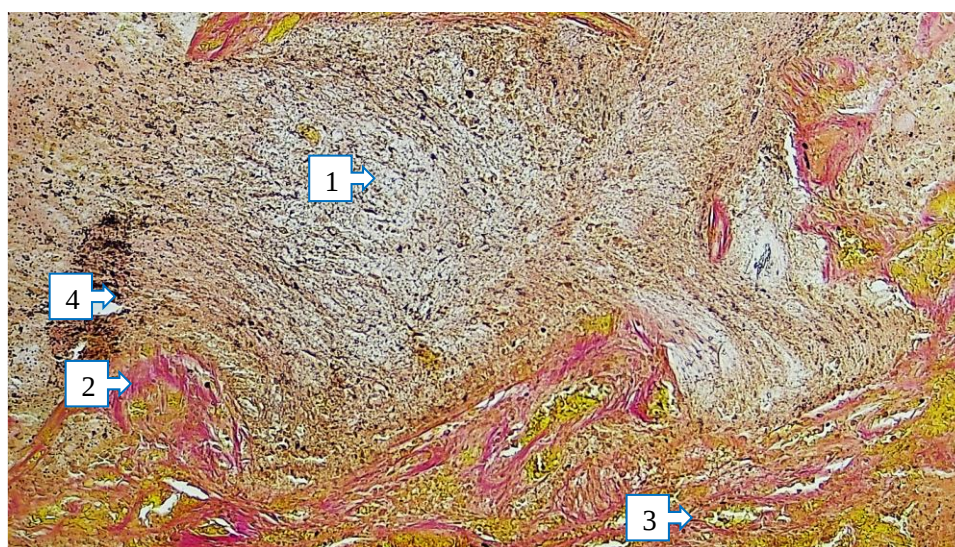
Patient Sh.A., born in 1999. Diagnosis: cascade-shaped stomach, hypertrophic gastritis, erosive duodenitis.

These findings emphasize that radiomorphological assessment of the stomach should always consider the patient's age, sex, and somatotype, as these factors substantially affect gastric configuration, motor function, and diagnostic interpretation in both normal and pathological states. Influence of Sex and Constitutional Types on the Radiographic Anatomy of the Stomach: Significant variations in the shape, position, and motor

activity of the stomach were observed between males and females, depending on body constitution. In individuals with an asthenic body type, the stomach was typically elongated and positioned lower in the abdominal cavity, showing a vertical or ptotic configuration. In contrast, hypersthenic individuals demonstrated a shorter and more voluminous stomach located higher in the epigastric region, often with a transverse orientation and increased gastric capacity. Males with a mesomorphic (muscular) somatotype exhibited more distinct and regular gastric peristalsis and a faster barium meal evacuation compared to females with pyknic or stenoplastic body types, who tended to have gastric hypotonia and delayed gastric emptying. These differences emphasize the influence of sex-related physiological and morphological constitution on gastric motor function and radiomorphological features.

Radiographic Anatomical Characteristics in Various Gastric Pathologies: In cases of chronic gastritis, radiographic examinations revealed flattening and smoothing of the gastric mucosal fold relief, particularly in elderly patients and those with an asthenic body type. In hypersthenic patients, a pronounced hypersecretion pattern with increased gastric tone and motility was observed. In peptic ulcer disease, characteristic radiological findings included localized mucosal defects and erosive lesions, most commonly seen in middle-aged males with a mesomorphic somatotype. These changes were often associated with segmental hyperkinesia and spastic contraction zones, reflecting localized motor dysfunction of the gastric wall. Such findings demonstrate that sex and constitutional typology significantly affect the radiomorphological, functional, and pathophysiological characteristics of the stomach, highlighting the necessity for a personalized, morphotype-based diagnostic approach in gastroenterological radiology. In addition, females with a pyknic body type demonstrated a tendency toward chronic progression with delayed restoration of gastric motility.

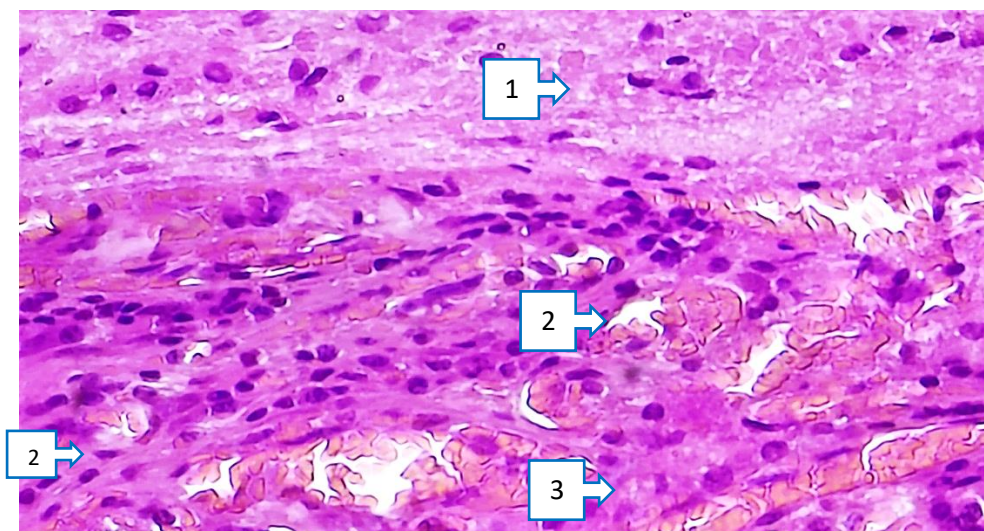
Neoplastic processes: age-related and typological characteristics of tumor localization and spread were identified, indicating that both factors significantly influence the morphological pattern and clinical course of gastric neoplasms. In older age groups, volumetric formations in the body and antral regions of the stomach predominated, accompanied by characteristic morphological changes such as displacement and deformation, which were especially pronounced in hypersthenic patients.



Gastric antral ulcerative gastritis. Staining: Van Gieson. Magnification: $\times 10$, $\times 20$.

Fibrinoid necrosis of the glandular epithelial cells and lamina propria of the gastric mucosa. Sclerosis of the connective tissue in the submucosal layer. Atrophy of the muscular layer and vascular sclerosis. Ulceration (crater) containing amorphous tissue detritus and hemosiderin (blood pigment) deposits.

Development of diagnostic algorithms considering typology and age: Based on the identified patterns, a differential diagnostic system was developed that integrates the patient's age, sex, and somatotype. Specifically, in asthenic patients with chronic gastritis, it is recommended to focus on subtle functional disturbances and early detection of gastric hypotonia.



Gastric antral ulcerative gastritis. Staining: Hematoxylin–Eosin (H&E). Magnification: $\times 10$, $\times 40$. In the base of the ulcerated area and submucosa, marked inflammatory infiltration and sclerotic changes are observed. In the muscular layer, atrophy of muscle fibers accompanied by inflammatory cell infiltration is noted. Vascular wall sclerosis and pronounced congestion of blood vessels are present.

In hypersthenic patients, the primary attention should be directed toward monitoring hypertonicity and the tendency toward increased secretory activity. Implementation of these algorithms improved diagnostic accuracy by 15–20% compared to conventional approaches. Our study emphasizes the importance of integrating morphological, radiological, and anthropometric methods to better understand the pathogenesis of gastric diseases and to develop more effective diagnostic and therapeutic strategies.

Conclusion

The study confirmed gender-related differences in gastric structure and function. Males and females exhibit distinct radiographic patterns due to hormonal and constitutional factors, underscoring the necessity of sex-specific approaches in the diagnosis and management of gastrointestinal diseases. The constitutional body structure significantly affects the radiographic anatomical parameters of the stomach and the course of pathological processes. Asthenic, normosthenic, and hypersthenic somatotypes demonstrate distinct differences in gastric shape, position, and motility, which should be carefully considered in clinical diagnostics. The diagnostic algorithm developed with consideration of age, sex, and body type enhances the accuracy of identifying gastric pathologies and facilitates a more effective differential diagnosis of gastrointestinal disorders.

LIST OF REFERENCES:

1. Abdulkhakova D.A., Abdulkhakov R.A. X-ray diagnostics of esophageal and gastric diverticula. // Vestnik SurGU. Medicine., 2022; 3(53): 40–45.
2. Byalovsky Yu.Yu., Davydov V.V. Course of Lectures on Pathophysiology: A Textbook for Medical Students. In 4 parts. Ryazan, 2018; Part 1: 261 p.
3. Zashikhin A.L., Timchenko S.A., Pakhtusova N.A., Ozomina O.S. Morphofunctional aspects of reactive transformation of gastric smooth muscle tissue in the development of stenosis. // Morphology., 2000;(3):49-50.
4. Krivigina E.V., Zhigaev G.F. Improvement of treatment methods for certain forms of operated stomach diseases. // Siberian Medical Journal., 2015;(3):111-112.
5. Pervushin V.V., Masalova A.V., Derkach A.A. Constitution and its role in pathology. Classification of constitutional types. Concept of diathesis. // International Student Scientific Bulletin., 2020; (6).
6. Rustamov E.A. Morphological changes of the gastric mucosa before and after surgical treatment. // Pirogov Journal of Surgery., 2012; (4): 20–25.
7. Satorov S. Helicobacter pylori and Helicobacteriosis: Monograph. Ed. S. Satorov. Novosibirsk: RNS Publishing House, 2015; 96 p.
8. Kharitonov D.V., Sapozhnikov V.G., Kharitonova L.A. On the constitutional features of gastric and duodenal ulcer disease in children. // Experimental and Clinical Gastroenterology., 2022; 202(6): 36–40. DOI: 10.31146/1682-8658-ecg-202-6-36-40.
9. Khudoyberdiev D.K., Teshayev Sh.Zh. Influence of constitutional features on the X-ray anatomy of the gastrointestinal tract. Problems of Biology and Medicine. 2024;1(151).
10. Shabalov N.P., Arsentev V.G., Ivanova N.A., et al. Age-specific anomalies of constitution and diathesis. // Consilium Medicum. Pediatrics (Suppl.). 2016; (2): 82–85.
11. <https://www.freepatent.ru/patents/2154982>

Entered 20.09.2025