



**ПРИВАТНИЙ ВИЩИЙ НАВЧАЛЬНИЙ ЗАКЛАД
«ХАРКІВСЬКИЙ МІЖНАРОДНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**

**МЕДИЧНІ ТА БІОЛОГІЧНІ НАУКИ:
МІЖДИСЦИПЛІНАРНИЙ АСПЕКТ
MEDICAL AND BIOLOGICAL SCIENCES:
INTERDISCIPLINARY ASPECT**

Матеріали VI Міжнародної міждисциплінарної науково-практичної
конференції до Всесвітнього дня анатомії
Materials of VI International Interdisciplinary Scientific and Practical
Conference dedicated to World Anatomy Day

(реєстраційне посвідчення УкрІНТЕІ № 604 від 02 вересня 2025 р.)

15-16 жовтня 2025 року



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Збірник містить матеріали VI Міжнародної міждисциплінарної науково-практичної конференції до Всесвітнього дня анатомії «**Медичні та біологічні науки: міждисциплінарний аспект**», є нефактивним науковим виданням, яке висвітлює теоретичні та практичні результати наукових досліджень науково-педагогічних і педагогічних працівників закладів вищої освіти, молодих науковців (докторантів, аспірантів, студентів), лікарів-практиків, наукових співробітників з історії становлення вітчизняної та світової морфології, актуальних питань застосування сучасних морфологічних методів і наукових технологій в медицині; клінічних, діагностичних, фармакологічних аспектів клінічної медицини; цифрових технологій в медичній науці, практиці та освіті; міждисциплінарного підходу до підготовки майбутніх лікарів в Україні та в світі.

Для широкого кола наукових, науково-педагогічних (педагогічних) і практичних працівників, що займаються питаннями сучасних морфологічних методів і наукових технологій в медицині; клінічних, діагностичних, фармакологічних аспектів клінічної медицини; впровадження цифрових технологій в медичну науку, практику і освіту; реалізації міждисциплінарного підходу до підготовки майбутніх лікарів в Україні та в світі.

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gradually replaced by restructuring processes. During this period, signs of folliculogenesis became evident – the number of small follicles with high proliferative potential increased, and noticeable changes occurred in the ratio between the follicular epithelium, colloid, and stroma. The morphofunctional characteristics of the thyroid gland were manifested by a reduction in epithelial height, which reflects regulatory adjustments aimed at compensatory adaptation under hypoxic conditions. Changes in follicular diameter indicated a shift in the proportion between epithelial and connective tissue components, reflecting ongoing tissue remodeling and adaptation.

Conclusion. Thus, under the influence of hypoxia, structural reorganization within the thyroid gland facilitates the activation of compensatory and adaptive mechanisms, accelerating the gland's functional adjustment to new environmental conditions. This intrinsic restructuring of thyroid tissue represents a key adaptive response enabling the organism to maintain homeostasis under prolonged hypobaric hypoxia.

CONSIDERATION OF CERTAIN TYPES OF HYPEROSTOSIS

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Relevance of the study. It is associated with age, male sex, obesity, hypertension, diabetes, and atherosclerosis, and is related to an increased risk of aortic calcification and cardiovascular risks. There is evidence that spinal stiffness and pain are associated with the progression of calcification, which emphasizes the importance of early symptom detection. Since hyperostosis may be asymptomatic or masked by other conditions (for example, chronic back pain, reduced mobility), its study helps avoid diagnostic errors.

The aim of study. To investigate its mechanisms of development, clinical manifestations, diagnostic criteria, and treatment options for this pathological process, which is characterized by excessive bone tissue formation, to deepen the understanding

of the nature of the disease and to improve diagnostic and therapeutic approaches.

Materials and methods include theoretical analysis of the literature and practical anatomical research.

Results and conclusions. Hyperostosis is a term used to define abnormally increased ossification of the skeleton and is not applied to adaptive changes such as alterations in bone size and mass associated with increased mechanical loading. However, osteosclerosis, included in the concept of “hyperostosis,” is defined as an increase in the density of the affected bone without a change in its shape.

Such a phenomenon is observed in renal osteodystrophy. Osteosclerosis associated with metastatic carcinoma is well known, usually in breast or prostate cancer, and the appositional newly formed bone adjacent to trabeculae that appear at the site of a prior pathological process is easily recognized in biopsies taken to confirm a diagnosis of metastatic disease. Similar osteosclerosis may accompany myeloproliferative disorders, particularly myelosclerosis, and suppression of bone marrow function occurs due to significant fibrosis against the background of primary bone tissue involvement.

New bone formation occurs in relation to inflammation in bony osteomyelitis. Ultimately, deforming osteosis provides a radiological image of thickening and densification of the affected parts of the skeleton, while histological examination indicates increased osteoblastic activity along with enhanced bone resorption.

1. Ankylosing spinal hyperostosis is an unusual type of spinal ossification in middle-aged and elderly patients. Any part of the spine may be involved, and spinal lesions represent only a component of a generalized skeletal disorder for which the term “diffuse idiopathic skeletal hyperostosis” (DISH) has been proposed. Apart from the spine, hyperostosis is mainly observed at the sites of ligament and tendon attachment to bone, for example at the iliac crest, ischial tuberosities, trochanters, linea aspera, calcaneus, patella, as well as in para-articular bone proliferations, the development of which may hinder joint replacement surgery.

The main changes are expected in the thoracic spine, where typical bony

projections appear on the anterolateral surfaces of vertebral bodies, primarily on the right side. Intervertebral discs are usually of normal thickness, and adjacent vertebrae may be connected by bony bridges extending across disc margins, or, conversely, bony outgrowths arising from the edges of adjacent vertebrae form structures resembling a parrot's beak or so-called "kissing osteophytes." The general appearance of ossification observed macroscopically may be described as if molten wax were flowing down the lateral surface of the spine. Histomorphometry has revealed that when hyperostosis is present on the vertebral ridges, the vertebral bodies themselves have a porous structure. Ankylosing hyperostosis is observed in almost 10% of all autopsies and must be differentiated from ankylosing spondylitis, spinal changes in psoriatic arthritis and Reiter's syndrome, deforming spondylosis, fluorosis, ochronosis, and acromegaly.

2. Melorheostosis is a condition whose name derives from the Greek words *melos* (limb) and *rheos* (flow or current). The comparison with wax flowing from a candle, previously mentioned in connection with ankylosing spinal hyperostosis, reflects the flowing bone change characteristic of melorheostosis. This condition often occurs in older children and, although sometimes an incidental radiological finding, can cause skeletal pain and limb deformity with development of limb-length discrepancy and secondary deformities such as scoliosis and genu valgum. Painful sensations occur more frequently in adults than in children. The skin over the affected area becomes thickened or hardened and reddened. Fibrous thickening of subcutaneous tissue and muscles and the development of contractures may occur. Pathological fractures and malignant transformation of the affected bones have not been described. Serum calcium, phosphorus, and alkaline phosphatase levels remain within normal limits. The etiology of the condition is unknown. There is no evidence of familial or hereditary predisposition, and men and women are affected with approximately equal frequency.

Melorheostosis can affect any bone; however, the skull, spine, and ribs are rarely involved, while long tubular bones are particularly often affected. Mono-osseous or mono-melic (affecting one limb) changes are observed, but more widespread

involvement of several limbs or bones, or even separate segments of one limb, may occur. Radiological examination shows thickening and densification of the medullary (endosteal) surface of the affected bone with extension into the bone marrow cavity. A similar appearance may be typical of melorheostosis in children. In adults, subperiosteal or extracortical hyperostosis is usually found. Pathological features include thickening of compact and cancellous bone, narrowing of the medullary cavity and formation of islands of bone tissue in the cancellous substance of the epiphyses. Histological signs are similar to those of hyperostotic bone and resemble features characteristic of other conditions such as osteopoikilosis. Membranous ossification and formation of thickened bone plates that may completely obliterate osteons of compact bone are observed. Osteoclastic activity is low, though present, and cartilage formation, if any, is concentrated at the ends of the bones. The distribution of osteosclerotic foci is the main criterion for differential diagnosis.

3. Osteopoikilosis is usually clinically silent and is a benign condition in which multiple sclerotic bone lesions are incidentally detected during radiological examination. In some cases, cutaneous changes are observed and, although variable, the most common lesions are firm, yellowish nodules in the skin and subcutaneous tissue the size of a lentil, similar to those in lenticular disseminated dermatofibrosis. Osteopoikilosis is inherited in an autosomal dominant pattern, but sporadic cases are sometimes observed. Once identified, the lesions usually remain static, although increases in size and disappearance have been reported. Radiologically, numerous discrete foci of sclerosis 5-50 mm in diameter are predominantly detected in the epiphyses and metaphyses of long bones of the limbs, which retain their normal contours. Diaphyses are unaffected. Although small bones of the wrist and ankle may be involved, the pelvis, skull, mandible, spine, and thorax are usually spared. Previously, osteopoikilosis was considered clinically insignificant; however, associated abnormalities have been noted, including coarctation of the aorta, double ureters, endocrine disorders, gouty or rheumatic skin lesions, exostoses, craniofacial and dental anomalies including cleft lip, and dermatological manifestations.

The study of hyperostosis is relevant for several reasons: high prevalence in older age groups, significant clinical consequences (both skeletal and extra-skeletal), association with systemic diseases, and prospects for development of new diagnostic and therapeutic approaches.

Thus, understanding hyperostosis is important not only for orthopedics or spondylology but also for general medicine. Early detection allows risk assessment (fractures, cardiovascular complications) and adjustment of treatment strategies. New therapeutic approaches, early-stage interventions, and prevention of progression are needed. Considering demographic changes (population aging, increasing metabolic disorders), the relevance of this issue continues to grow.

REVIEW OF MORPHOFUNCTIONAL FEATURES OF THE STOMACH

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Introduction. The increasing incidence of functional disorders of the digestive system against the background of excessive emotional tension and prolonged stress raises important questions regarding the morphofunctional features of different sections of the digestive tract. The stomach, located between the esophagus and the duodenum, performs the functions of food accumulation, mixing and mechanical processing, chemical digestion, as well as further evacuation of chyme into the intestine. Its morphofunctional characteristics serve as an example of the interrelation between structure and function. Understanding the peculiarities of the stomach wall structure, blood supply, and innervation allows for a better comprehension of the mechanisms of secretion, motility, and protective reactions under normal conditions, as well as the study of the connection between functional and morphological disorders that lead to the development of pathological conditions.

Aim of the research. To summarize the existing scientific data regarding the main anatomical and functional features of the stomach, and to analyze modern

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