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**UNIVERSITATEA TEHNICĂ A MOLDOVEI**  
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**SURGICAL CLINIC AND CLINICAL LECTURES BY  
SPECIES-1**

*Problem Collection*



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## PREFACE

In the context of ongoing transformations in modern veterinary medicine, the discipline of General Surgery occupies a fundamental role in training specialists capable of intervening competently, with scientific justification and empathy, in the face of various surgical pathologies in animals. The rapid evolution of medical technologies, the emergence of new surgical materials, as well as the deepening of knowledge regarding the pathophysiological mechanisms of the organism, require an updated and comprehensive approach to both the theoretical and practical aspects of veterinary surgery.

The relevance of this problem collection is determined by the need to consolidate fundamental and applied knowledge in general surgery through a modern assessment methodology - namely, thematic problem sets. Surgery, as a practical discipline, requires systematic training and well structured clinical reasoning, based on understanding the biological processes governing the organism's response to trauma, infection, or surgical intervention. Under current conditions, where veterinary medicine is increasingly oriented toward performance and precision, the veterinarian must possess both solid theoretical knowledge and well-developed practical skills in order to ensure effective and ethical therapeutic management.

The importance of this problem collection lies in its formative and evaluative role, offering students, master's candidates, and practicing veterinarians the opportunity to assess their level of knowledge and to prepare rigorously for ongoing assessments and specialty examinations. The broad thematic scope - from general principles of veterinary surgery and traumatology to pathologies of vital body systems, pathogenetic therapies, and contemporary biosurgical techniques reflects the interdisciplinary nature and scientific depth of the field.

By addressing topics such as surgical infection, wound healing, hemotherapy, novocaine therapy, tissue therapy, and

interventions in oncological pathology, the work highlights the direct connection between biological theory and clinical applicability, providing real contexts for the analysis and resolution of surgical cases.

The main objective of this collection is to develop integrated medical thinking and to stimulate the ability to apply surgical knowledge in practice. Through the included exercises and problems, the following aims are pursued: understanding the neurohumoral defense and adaptation mechanisms of the organism to trauma, particularly in relation to infection and metabolic dysfunctions; acquiring knowledge of the biology of regenerative, reparative, and tissue restoration processes, as well as the rebalancing of the organism's physiological status; mastering physiotherapeutic, antiseptic, therapeutic, and pathophysiological principles; and the rigorous application of diagnostic, investigative, and treatment methods in clinical cases.

At the same time, the work provides essential didactic support in the development of professional skills, contributing to the training of future veterinarians for practical and decision making activities in the field of general surgery, which encompass a series of main objectives: consolidation of essential theoretical concepts in veterinary general surgery; stimulation of critical thinking and analytical skills in approaching surgical cases; application of differential diagnostic and therapeutic principles in diverse clinical situations; familiarization with contemporary surgical techniques, biosurgery, and physiotherapy; understanding the complex interactions between tissue pathologies, metabolism, and immune responses; and the formation of an interdisciplinary perspective on the processes of trauma, infection, and healing.

This collection represents not only a tool for assessment and self assessment but also a scientific and educational reference base for the further development of courses, practical works, and case studies in the field of veterinary surgery. Looking ahead, the expansion and digitalization of the content through the integration of interactive educational platforms, simulations, and modern

assessment methods will ensure training adapted to the current demands of modern veterinary medicine.

Through its interdisciplinary character and the rigorous scientific nature of the addressed topics, this work aligns with international standards of professional training, making a significant contribution to the development of both theoretical and practical competencies of specialists in veterinary medicine.

**Authors**

## INTRODUCTION

General surgery constitutes one of the fundamental pillars in the professional training of the veterinary physician, representing the field in which theoretical knowledge is applied in an integrated manner for the diagnosis, treatment, and prevention of surgical conditions in animals. In the current context of modern veterinary medicine, characterized by the continuous development of operative techniques, the refinement of diagnostic methods, and the diversification of therapeutic approaches, the discipline of general surgery plays a key role in developing solid professional competencies based on scientific principles and the correct application of surgical techniques.

The main objectives of the discipline include the development of competencies necessary for understanding the pathogenetic mechanisms of surgical conditions, the clinical and paraclinical evaluation of patients, the establishment of differential diagnoses, the appropriate selection and application of both surgical and conservative therapeutic techniques, as well as the prevention of complications and postoperative management.

The topics included in this collection are organized progressively, following the logical evolution of pathological processes and surgical intervention, based on a student-centered learning approach. This approach ensures a continuous correlation between theory and practice, fosters the development of analytical and synthetic thinking, cultivates critical reasoning and professional responsibility, and promotes the application of diagnostic and treatment algorithms. The learning outcomes aim not only at the acquisition of knowledge, but also at the ability to identify and assess surgical lesions, correctly interpret clinical signs and laboratory data, select and apply appropriate surgical techniques, implement infection prevention and control measures, and monitor postoperative evolution while preventing complications.

The teaching materials developed within this discipline are designed in accordance with the provisions of the General Surgery

curriculum in veterinary medicine, aiming to facilitate the achievement of learning outcomes through the systematic delivery of theoretical knowledge and the development of domain-specific practical skills. They reflect, in a written and structured form, the thematic content of lectures and practical sessions, ensuring a logical correlation between scientific foundations and clinical applicability. In a professional environment where quality and safety standards are continuously increasing, the veterinary physician must be capable of applying surgical techniques in accordance with ethical principles, biosecurity, and animal welfare requirements.

The problem collection entitled “*Intermediate and Final Knowledge Assessments*” is designed as a comprehensive educational tool intended for students of veterinary medicine faculties, with the aim of consolidating, evaluating, and deepening both theoretical and practical competencies specific to the field of general surgery.

In the current context of higher veterinary medical education, characterized by a focus on clearly defined professional competencies, the integration of theoretical knowledge with practical skills, and the development of clinical thinking, there is a need for teaching materials that go beyond the mere transmission of information and actively stimulate student participation in the learning process. This collection responds to this need by structuring its content in the form of problems and assessment tests designed to reflect the realities of veterinary medical practice.

General surgery in veterinary medicine represents a fundamental domain of professional training, integrating concepts of topographic anatomy, pathophysiology, asepsis and antisepsis, operative techniques, traumatology, wound management, hemostasis, suturing, and perioperative management. In accordance with the syllabus and academic standards, this collection aims to systematize and assess the essential knowledge required by future veterinary physicians for the competent and responsible practice of their profession. The teaching materials included in the collection

primarily fulfill an informational function by providing a coherent and logical structuring of the system of knowledge and fundamental skills specific to general surgery. The problems and assessment tests are formulated in such a way as to highlight key concepts, decision-making algorithms, and the correlations between clinical signs, paraclinical investigations, and therapeutic approaches.

The collection has a pronounced formative character, oriented toward the development of professional competencies and learning autonomy. The problems are designed to stimulate critical thinking, clinical reasoning, and decision-making abilities in a variety of situations.

By individually solving the proposed tasks, the student develops the ability to analyze clinical data, establish differential diagnoses, and choose appropriate therapeutic approaches. The structure of intermediate assessments allows for the identification of knowledge gaps and the gradual consolidation of knowledge, while final assessments aim at the integrative and synthetic application of information accumulated throughout the study of the discipline. Thus, the teaching material supports the training of a future veterinary physician capable of approaching the surgical patient in a competent, responsible, and scientifically grounded manner.

Through the diversity of tests types and the progressive grading of difficulty, the collection also fulfills a training function, stimulating attention, interest, and motivation for learning. The clinical scenarios are realistically formulated, reflecting cases frequently encountered in veterinary practice, which facilitates the connection between theory and professional reality.

The alternation between questions that verify basic knowledge and complex problems requiring the integration of multiple concepts contributes to maintaining a high level of cognitive engagement. Moreover, the applied nature of the exercises supports the development of professional reflexes and the ability to respond effectively in critical clinical situations.

An essential objective of this collection is to stimulate self-directed learning and internal feedback mechanisms. The structure

of the tests and the organization of assessments enable students to monitor their progress, identify errors, and reflect on their own learning process.

By consistently relating to the objectives of the discipline and the targeted competencies, the student is encouraged to adopt a reflective and responsible attitude toward their professional training. Self-assessment thus becomes a tool for regulating learning and consolidating intellectual autonomy.

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