**RETROSPECTIVE ANALYSIS OF MEDICAL PATHOLOGY QUESTIONS ASKED IN THE ENTRANCE EXAMINATION TO SPECIALTY EDUCATION IN DENTISTRY**

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|  **Abstract** **Those who graduated from or continue their education from Faculties of Dentistry, in case they want to receive specialization training, must take the Dentistry Specialization Education Entrance Exam (DUS). In DUS, questions arise from basic and clinical sciences. In the Basic Sciences test, candidates face medical pathology questions along with other basic sciences. Our study evaluated the total 52 pathology questions found in 13 dental specialty education entrance exams held from 2012-2021. While 31 (59.6%) questions related to general pathology were asked, 21 (40.4%) questions included oral pathology. As a result of the study, it was determined that the most frequently asked questions from oral pathology were diseases and tumors of the soft and bone tissue in the jaw (n: 13, 25%), while the general pathology was the acute and chronic inflammation (n:8, 15.3%).****In the distribution of subjects according to years, general pathology and oral pathology were found to be equally distributed. Some issues are common to both general and oral pathology.Oral pathology questions are given with clinical information. Some questions are also intertwined with other basic sciences. The fact that pathology is a bridge between basic and clinical sciences has made it difficult to clearly distinguish the questions. We think that the data obtained as a result of the study will be useful for candidates preparing for the specialty exam in dentistry.** |
| Keywords: Dentisty, Pathology, Test ,Examınation,DUS |

1. **Introduction**

Those who graduated from or continue their education from Faculties of Dentistry, in case they want to receive specialization training, must take the Dentistry Specialization Education Entrance Exam (DUS).

DUS is a central examination held every year since 2012 by ÖSYM in line with the Regulation on Specialization Education in Medicine and Dentistry. The exam, which was held twice a year in the first 3 years, in spring and autumn, has continued to be held once a year since 2015. The exam consists of two parts as Basic Sciences and Clinical Sciences. There are 40 questions in the Basic Sciences test and 80 questions in the Clinical Sciences test.

 In the Basic Sciences test, candidates are evaluated with questions from basic medical sciences such as Anatomy, Histology and Embryology, Physiology, Medical Biochemistry, Medical Pathology, Medical Pharmacology, Medical Biology and Genetics (Table1). The Clinical Sciences test is consists of 10 questions from each of the dentistry specialties (1).

Medical Pathology is a branch of science that is a bridge between basic and clinical sciences and examines the cause, mechanism and consequences of diseases.Pathology education is generally divided into two main sections.General pathology covers the basic responses of cells and tissues to harmful factors underlying diseases (2). Systemic (specific) pathology, on the other hand, examines the tissue-specific responses of specialized tissues and organs to certain stimuli. Oral pathology is gaining importance for dentistry (3).

This study aims to retrospectively examine the distribution of pathology questions asked in the entrance examination to specialty education in dentistry according to subjects and years.

**Table 1.** Distribution of the basic sciences test by dentistry specialization

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| --- | --- | --- |
| Basic Sciences | Number of questıonsin the test  | Percentage of the test - % |
| Anatomy | 6 | 15 |
| Medıcal Mıcrobıology | 6 | 15 |
| Physıology | 6 | 15 |
| Medıcal Bıochemıstry | 6 | 15 |
| Medıcal Pathology | 4 | 10 |
| Medıcal Pharmacology | 4 | 10 |
| Medıcal Bıology And Genetıcs | 4 | 10 |
| Hıstology And Embryology | 4 | 10 |

1. **Materials and Methods**

Our study was based on 13 dental specialty education entrance exams held in 2012-2021. In each exam, 4 questions were asked from the field of pathology, and a total of 52 pathology questions were included in the study. Exam questions were obtained from the OSYM website (1). The distribution of the questions according to the subjects and the distribution of the subjects according to the years were examined. Subject headings have been created with reference to the book "*Robbins and Cotran, Pathological Basis of Disease*"(2) and "*Oral Pathology, Clinic Pathologic Correlations*"(3), which is the main source book of pathology**.**

**3. Results and Discussion**

When we look at the topics of the questions in the exam (Table 2); 31 (59.6%) questions related to general pathology were asked, and the remaining 21 (40.4%) questions included oral pathology. As a result of the study, most questions were asked about soft and bone tissue diseases and tumors in the jaw (n:13, 25%) from oral pathology. Oral mucosal lesions (n:7, 13.4%) are the second most frequently asked issue. The least question is about salivary gland tumors (n:1, 1.9%).

Acute and chronic inflammation (n:8, 15.3%) are the most frequently asked subjects from general pathology, and cell adaptation - cell injury and cell death (n:7 13.6%), immune system and its diseases (n:6, 11.5%) , infections (n:4, 7.7%) and neoplasia (n:3, 5.7%). The least questions were asked about wound healing (n:2, 3.8%) and hemodynamic disorders and thromboembolic diseases (n:1, 1.9%).

No questions asked during all exams (2012-2021), from general pathology to environmental and nutrition-related diseases, from oral pathology to red lesions of the mucosa and lymphoid lesions.

In general, 2 of the 4 questions belong to general pathology, while 2 of them include oral pathology. It was not possible to separate some questions as general or oral pathology.

It was determined that at least 1 question was asked from bone-soft tissue diseases and tumors in each exam.

Squamous cell carcinoma and its developmental stages (n:5, 9.6%) are among the tumor types that are frequently asked about both oral pathology and general pathology. Pemphigus disease was asked twice as (2012-1,2019) a question as the subject of both oral mucosal lesions and immune system diseases(2,3). Immune system diseases and neoplasms have been questioned in both general pathology and oral mucosal lesions.

However, some questions may contain common areas for both pathologies and other basic sciences such as microbiology and histology (2). Infectious diseases-bacteria, viruses, fungal and immune system are also explained in the branch of microbiology (4). Among the infectious diseases (n:4, 7.6%), HPV types and their mechanisms of action in neoplasia were mostly asked.

In 11 of the questions, clinical and radiological information accompanied the pathology information.

Basic sciences and clinical sciences together interpretation is very important to pathology. Clinically informed questions are the exam dates in Table 2, written in font bold.

**Table 2.** Distribution of subjects by years

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| --- | --- |
| **SUBJECTS** | **Years of questions asked** |
| **General Pathology** |  |
| Cellular Adaptation, Cell Injury, and Cell Death | 2012-2\*\*,2014-2,2015, 2016,2017, **2018**,2021 |
| Acute And Chronic Inflammation | 2012-1\*, 2012-2, 2013-1,2013-2,2017,2019,2020,2020 |
| Tissue Regeneration and Repair | 2013-2,2019 |
| Hemodynamic Disorders, Thromboembolic Diseases | 2020 |
| Genetic Diseases | - |
| Immune System Diseases | 2012-1,2013-1,2014-1,2014-2, **2016**,2021 |
| Infectious Diseases |  2013-1,2014-1,2015, 2021 |
| Neoplasi  | 2012-2, 2013-2, **2018** |
| **Oral Pathology** |  |
| **Oral mucosa lesions(n:7)** |  |
| * Vesiculobullous Diseases
 | 2012-1,2019 |
| * Ulcerative Conditions
 | 2014-2 |
| * White Lesions
 | 2012-1,2017 |
| * Red Blue Lesions
 | - |
| * Pigmented Lesions
 | 2018 |
| * Verrucal-Papillary Lesions
 | **2016** |
| **Salivary Gland Diseases** | **2021** |
| **Lymphoid Lesions** | - |
| **Soft And Bone Tissue Diseases And Tumors In The Jaw(n:11)** |  |
| * Cysts of the Jaws and Neck
 | **2012-2**, 2014-1 |
| * Odontogenic Tumors
 | 2013-1, 2013-1, **2016** |
| * Benign Nonodontogenic Tumors
 | 2013-2 |
| * Inflammatory Jaw Lesions
 | 2014-2, **2018** |
| * Malignancies of the Jaws
 | **2017,2019**,2020 |
| * Metabolic and Genetic Diseases
 | **2015** |
| * Connective Tissue Lesions
 | **2015** |

\*-1: the exam in the spring semester, \*\*-2: the exam in the autumn semester

**Acknowledgment**

In the distribution of subjects according to years, general pathology and oral pathology were found to be equally distributed. Some issues are common to both general and oral pathology. Some questions are given with clinical knowledge, some questions are intertwined with other basic sciences. The fact that pathology is a bridge between basic and clinical sciences has made it difficult to distinguish the questions clearly. In the light of basic information, correlation with clinic is very important for pathology science. We think that the data obtained as a result of the study will be useful for candidates preparing for the specialty exam in dentistry.

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