# GEORGIAN MEDICAL MEWS

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# ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии საქართველოს სამედიცინო სიახლენი

# **GEORGIAN MEDICAL NEWS**

Monthly Georgia-US joint scientific journal published both in electronic and paper formats of the Agency of Medical Information of the Georgian Association of Business Press. Published since 1994. Distributed in NIS, EU and USA.

**GMN:** Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

# WEBSITE

www.geomednews.com

# К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

- 1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра. Используемый компьютерный шрифт для текста на русском и английском языках Times New Roman (Кириллица), для текста на грузинском языке следует использовать AcadNusx. Размер шрифта 12. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.
- 2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.
- 3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

- 4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).
- 5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи. Таблицы и графики должны быть озаглавлены.
- 6. Фотографии должны быть контрастными, фотокопии с рентгенограмм в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста в tiff формате.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

- 7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.
- 8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform\_requirements.html В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.
- 9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.
- 10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.
- 11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.
- 12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

# REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

- 1. Articles must be provided with a double copy, in English or Russian languages and typed or computer-printed on a single side of standard typing paper, with the left margin of 3 centimeters width, and 1.5 spacing between the lines, typeface Times New Roman (Cyrillic), print size 12 (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.
- 2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.
- 3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

- 4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.
- 5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles. Tables and graphs must be headed.
- 6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

- 7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.
- 8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform\_requirements.html http://www.icmje.org/urm\_full.pdf
- In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).
- 9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.
- 10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.
- 11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.
- 12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

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რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

- 1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში Times New Roman (Кириллица), ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ AcadNusx. შრიფტის ზომა 12. სტატიას თან უნდა ახლდეს CD სტატიით.
- 2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ,რუსულ და ქართულ ენებზე) ჩათვლით.
- 3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).
- 4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).
- 5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.
- 6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით tiff ფორმატში. მიკროფოტო-სურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სუ-რათის ზედა და ქვედა ნაწილები.
- 7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა უცხოური ტრანსკრიპციით.
- 8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.
- 9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.
- 10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.
- 11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.
- 12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

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# DIAGNOSTIC CHALLENGE: COEXISTING MULTIPLE MYELOMA AND EXTRAMEDULLARY PLASMACYTOMA WITH RENAL AND HEPATIC INVOLVEMENT

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## Abstract.

**Background:** Both plasmacytoma and multiple myeloma (MM) are plasma cell dyscrasias, though their concurrence, especially with the unusual extramedullary presentation of plasmacytoma, is exceedingly rare. Distinguishing between them is crucial for management, especially in the presence of atypical findings that complicate the diagnosis.

Case Report: Herein, we describe a rare instance of synchronous plasmacytoma and multiple myeloma (MM) in a 65-year-old woman. The patient did not have any preceding symptoms or complaints and was living her life with no limitations until the day she fell and fractured. Preoperative examinations by a traumatologist demonstrated anemia, increased rates of nitrogen metabolism, and a mass in the right kidney. The above findings led to the cancellation of the surgery and encouraged our team to go into more detail.

Computed tomography (CT) scans showed a renal mass and liver lesions. During the diagnostic procedure, special attention was given to the acutely high level of total protein in the blood plasma, for which investigations were directed in another avenue. Electrophoresis of blood and urine and bone marrow biopsy established the diagnosis of MM, although the typical CRAB criteria were absent. Laboratory findings present conflicting evidence, with some results suggesting MM and others suggesting plasmacytoma.

Clarification was especially important since the renal mass was initially thought to be renal cell carcinoma and needed to be distinguished carefully. Due to the uncommon coexistence of these diseases, we examined both literature and clinical cases in order to investigate their simultaneous occurrence.

Conclusions: This case illustrates the diagnostic dilemma of simultaneous MM and plasmacytoma, highlighting the importance of thorough assessment, including histology and modern imaging. The fact that there are hepatic metastases also points to the aggressive nature of this unusual disease presentation.

**Key words.** Multiple myeloma, extramedullary plasmacytoma, renal mass, hepatic damage.

# Learning Points.

- Concurrent multiple myeloma and plasmacytoma, especially with unusual extramedullary involvement, is extremely rare and poses diagnostic challenges.
- The presence of a renal mass and hepatic damage in a patient with MM may mimic other malignancies, highlighting the importance of histological and immunohistochemical analysis.

• Early differentiation between MM and extramedullary plasmacytoma is crucial for appropriate treatment planning, including chemotherapy and supportive care.

# Introduction.

Plasma cell neoplasms comprise a heterogeneous category of disorders characterized by monoclonal plasma cell proliferation. Two significant but distinct entities among them are multiple myeloma (MM) and plasmacytoma. MM is a systemic malignancy, most frequently affecting the bone marrow, with features of hypercalcemia, renal impairment, anemia, and bone disease (CRAB criteria). By contrast, plasmacytomas are localized plasma cell tumors, which can be found in osseous tissue (solitary bone plasmacytoma) or in extramedullary tissues like the liver, dura mater, or paranasal sinuses (extramedullary plasmacytoma) [1].

Progression from either of these two is not exceptional. Approximately 50% of patients with solitary bone plasmacytoma and 30% of extramedullary plasmacytoma develop MM within the initial 10 years of primary diagnosis, and plasmacytomas can arise in the setting of MM [2]. Synchronous presentation of MM and plasmacytoma is not typical, especially with extramedullary involvement, like our case.

Extramedullary manifestations, including renal masses and liver lesions, are a very interesting area of study. The literature indicates that processes like decreased expression of adhesion molecules (e.g., CD56), enhanced angiogenesis, and increased chemokine activity (e.g., CXCR4) can be responsible for the extension of plasma cells outside the bone marrow. Also, immunohistochemical markers such as Ki-67 have been associated with high proliferative activity in extramedullary plasmacytomas, indicating their possible aggressive behavior [3].

This case adds to the limited literature that defines concomitant MM and plasmacytoma. The renal mass and liver lesions highlight the diagnostic dilemma and aggressive nature of the disease.

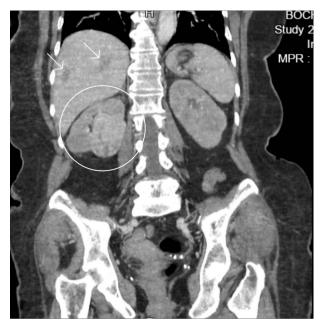
# Case Description.

A 65-year-old female presented with right shoulder pain following a stumble on a wet floor, resulting in a proximal right humerus fracture on December 8, 2024. The patient had no prior symptoms and led an active lifestyle without any history of trauma. A routine preoperative workup unexpectedly revealed uremia and significant anemia. Additionally, an incidental mass in the right kidney was noted, initially suspected to be an abscess or tumor, prompting referral to our clinic for further investigation.

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Upon admission, our focus was diagnosing the renal mass and assessing its possible connection to the patient's uremic state. Laboratory findings showed markedly elevated serum creatinine (343.36  $\mu mol/L$ , normal: 61.8–123.7  $\mu mol/L$ ), despite preserved urine output.

Abdominal CT revealed hepatic lesions in segments III, V, VI, VII, and VIII, with a 25 mm lesion in segment V, raising concerns for secondary malignancy. Additionally, a  $44 \times 54$  mm renal mass extending extracapsularly near the renal artery was identified. The spleen and osseous structures were unremarkable (see Figures 1 and 2). At this stage, the renal and hepatic lesions were considered highly suspicious for primary renal carcinoma with liver metastases.



**Figure 1.** Coronal CT with I.V. contrast showing a right kidney-enhancing soft tissue mass, which extends to the level of the renal hilum and is in contact with the pectoralis major muscle, also showing secondary lesions of liver.



Figure 2. Coronal CT with I.V. contrast showing right kidney enhancing soft tissue mass, where it is closely related to the renal artery, and liver lesions.

While evaluating the cause of uremia, laboratory analysis revealed markedly elevated total serum protein (111 g/L, normal: 63–82 g/L). Despite the absence of significant findings in the patient's history, complaints, or routine urinalysis, this finding became the reason for the expansion of studies in a different direction. We proceeded with serum and urine protein electrophoresis, which identified an M-protein spike. Immunoglobulin G levels were markedly elevated at 37,741 mg/dL (normal: 800–1800 mg/dL). The results were evaluated by an oncohematologist, who diagnosed multiple myeloma, a diagnosis that was soon confirmed through bone marrow studies.

Although there was no urgent renal indication for hemodialysis, we initiated allopurinol and kidney replacement therapy to prepare the patient for safer expected chemotherapy sessions (see Table 1).

Table 1. Key Laboratory Findings.

Indicator	Patient's Value	Reference range	Intention for starting hemodialysis
Creatinine Concentration in Serum (CREA)	394.60 μmol/L	46 - 92 μmol/L	To prepare for the chemotherapy
Blood Urea	14.66	2.5 - 6.1	To prepare for the chemotherapy
Concentration (Urea)	mmol/L	mmol/L	
Blood Uric Acid	489.8	149 - 369	Allopurinol—to prevent tumor lysis syndrome
Concentration (UA)	μmol/L	μmol/L	

Despite the highlighted work diagnoses, we encountered some contradictory information: while certain studies confirmed the presence of multiple myeloma, other data did not.

Despite the absence of CRAB criteria (hypercalcemia, renal failure, anemia, bone lesions), a bone marrow biopsy confirmed MM. However, key questions remained:

- If MM was present, why was CRAB symptomatology not fully manifested? Why was there no hypercalcemia or bone lesions?
- How should the hepatic lesions and renal mass be classified in the context of MM?

We found it particularly crucial to identify the volumetric mass in the kidney and liver lesions, as this significantly altered our understanding of the situation.

Given the findings shown in Table 2, plasmacytoma became a relevant differential diagnosis. A biopsy of the renal mass and liver lesions revealed histomorphology and an immunohistochemical profile consistent with plasmacytoma in both, kidney and liver specimens. These findings supported the diagnosis of extramedullary plasmacytoma, which should have been correlated with clinical, laboratory, and radiological findings.

Table 2. Additional Diagnostic Markers.

Test	Patient's Result	Reference Range
Ionized Calcium Concentration in Serum	1.20 mmol/L	1.15 - 1.29 mmol/L
Lactate Dehydrogenase (LDH)	222 U/L	120 - 246 U/L
Bone lesions on CT scan	Absent	

After analyzing the data, we concluded that a completely asymptomatic patient had confirmed multiple myeloma along with atypical plasmacytoma. This necessitated a collaborative approach to patient management, involving active participation from both a hematologist and a nephrologist.

Following treatment initiation, the patient's clinical, laboratory, and subjective parameters stabilized. Chemotherapy was initiated by an oncologist and was well tolerated, while hemodialysis sessions continued as part of supportive care.

At this stage, after a two-month follow-up, the patient remained under oncological supervision:

- No surgical intervention was performed on the fractured humerus.
  - Hemodialysis sessions continued as scheduled.
- Chemotherapy sessions proceeded according to schedule; two courses of chemotherapy have been completed.
  - The renal mass has significantly decreased in size.
  - The size of the hepatic lesions has reduced.

# Results and Discussion.

Plasmacytoma is a very rare form of blood cancer that is similar to multiple myeloma. There are two types of plasmacytomas: solitary plasmacytoma of bone (SPB) and extramedullary plasmacytoma (EMP). In plasmacytoma, plasma cells become abnormal cells that multiply, forming separate tumors. It is usually diagnosed when there is a single mass of plasma cells confirmed by biopsy, without evidence of systemic disease (normal bone marrow, no lytic lesions beyond the primary site, and normal blood and urine tests). The abnormally transformed plasma cells damage bones and can involve soft tissues in other parts of the body, especially the head and neck region [1], cases of EMP occurring in the kidney or liver are rarely documented; however, direct literature specifically detailing cases where plasmacytoma simultaneously involves both the kidneys and liver is extremely limited [4].

Multiple myeloma (MM) is another type of blood cancer that arises in plasma cells. It is characterized by the proliferation of abnormal plasma cells in the bone marrow, which leads to various systemic complications—diagnosed based on specific criteria, including bone marrow infiltration (>10% clonal plasma cells), evidence of end-organ damage (CRAB criteria: hypercalcemia, renal failure, anemia, bone lesions), or biomarkers of malignancy [5]. However, there are other plasma cell dyscrasias that do not meet the criteria to be called active multiple myeloma. The abovementioned disorders include monoclonal gammopathy of undetermined significance (MGUS), smoldering multiple myeloma (SMM), solitary plasmacytoma, and light chain amyloidosis [1].

A patient may initially be diagnosed with only plasmacytoma, but over time this condition can progress to multiple myeloma if additional sites of plasma cell proliferation develop. On the other hand, a person diagnosed with multiple myeloma may also develop plasmacytoma as a localized manifestation of the disease. However, simultaneous MM and plasmacytoma are rarely reported [6, 7].

Our patient had no prior symptoms, and the incidental discovery of elevated creatinine and serum protein led to further investigation. Interestingly, while significantly high total protein levels, anemia, and renal dysfunction supported the diagnosis of MM, the absence of typical CRAB criteria—including hypercalcemia and bone lesions—posed a diagnostic challenge; however, bone marrow biopsy revealed positive findings for MM. Confirmation of EPM with biopsy of liver lesions and kidney mass added further difficulty to the diagnosis - concurrent presentation of hepatic and renal plasmacytomas, and multiple myeloma - a combination that is rarely reported in the literature.

This is a rare and unusual presentation of extramedullary plasmacytoma with multi-organ involvement and synchronous multiple myeloma. This case helps to highlight the value of medical vigilance and attention to laboratory tests and imaging, even in totally asymptomatic patients. The overlapping characteristics of multiple myeloma (MM) and extramedullary plasmacytoma (EMP) necessitated an interdisciplinary effort for accurate diagnosis and successful management. Its uniqueness is in the challenging clinical presentation and the diagnostic dilemma faced.

# Conclusion.

This case illustrates the diagnostic dilemma of simultaneous MM and plasmacytoma, highlighting the importance of thorough assessment, including histology and modern imaging. The fact that there are hepatic metastases also points to the aggressive nature of this unusual disease presentation.

## Disclosure.

**Conflict of interest:** The authors declare no conflict of interest. **Patient Consent:** Written informed consent was obtained from the patient for publication of this case report, including clinical details and accompanying images.

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# REFERENCES

- 1. Plasma Cell Neoplasms (Including Multiple Myeloma) Treatment (PDQ®). PDQ Cancer Information Summaries. 2024.
- 2. de Waal EGM, Leene M, Veeger N, et al. Progression of a solitary plasmacytoma to multiple myeloma. A population-based registry of the northern Netherlands. British Journal of Haematology. 2016;175:661-667.
- 3. Firsova MV, Mendeleeva LP, Kovrigina AM, et al. Plasmacytoma in patients with multiple myeloma: morphology and immunohistochemistry. BMC Cancer. 2020;20.
- 4. Niu W, Zhang L, Wu Y, et al. Refractory primary extramedullary plasmacytoma in kidney: a case report. Journal of International Medical Research. 2021;49.
- 5. Rajkumar SV. Multiple myeloma: 2022 update on diagnosis, risk stratification, and management. American Journal of Hematology. 2022;97.

- 6. Manasanch EE, Claussen CM, Dong W, et al. A Clinical Model of Progression to Multiple Myeloma in Solitary Plasmacytoma. Blood. 2017;130:5367-5377.
- 7. Bosch JN, Moya M, Serna S, et al. When Two Worlds Collide: A Rare Case of Multiple Myeloma With Extramedullary Plasmacytoma. Curēus. 2023;15:e50058.