

7. INTERNATIONAL MEDITERRANEAN

SCIENTIFIC RESEARCH
AND INNOVATION CONGRESS

19-20 April 2025
ANTALYA

EDITORS:

Prof. Dr. Sezai ERCİŞLİ
Prof. Dr. Baki ÇİÇEK



INDEX

CONGRES ID		II-IV
PROGRAM		V-XXXIII
GALLERY		XXXIV-XLI
ACADEMIC INCENTIVE		XLII
NOTIFICATIONS		XLIII- LII

CONGRESS ID

CONGRESS TITLE

**7. INTERNATIONAL MEDITERRANEAN SCIENTIFIC RESEARCH AND
INNOVATION CONGRESS**

DATE AND PLACE

19-20 APRIL 2025, ANTALYA/TURKEY

ORGANIZATION

ISARC INTERNATIONAL SCIENCE AND ART RESEARCH CENTER

GENERAL COORDINATOR

Uzm. Yasemin AĞAOĞLU

EDITOR

Prof. Dr. Baki ÇİÇEK

Prof. Dr. Sezai ERCİŞLİ

ORGANIZING COMMITTEE

Prof. Dr. Cenk YAVUZ

Prof. Dr. Mahire HÜSEYNOVA

Prof. Dr. İbrahim BAYRAMOV

Prof. Dr. Mehmet DEMİR

Prof. Dr. Neslihan ŞAHİN

Prof. Dr. Serpil ÜNVER SARAYDIN

Prof. Dr. Tolga ULUSOY

Prof. Dr. Yadigar GÜLSEVEN SIDIR

Assoc. Prof. Dr. Ahmet AKKÖSE

Assoc. Prof. Dr. Çiğdem BOGENÇ

Assoc. Prof. Dr. Elif Feyza TOPDAŞ

Assoc. Prof. Dr. Erhan ERDEL

Assoc. Prof. Dr. Filiz RANDA ZELYÜT

Assoc. Prof. Dr. Gamze Ebru ÇİFTÇİ

Assoc. Prof. Dr. Gönül HASANOVA

Assoc. Prof. Dr. Hüseyin Murat IŞIK

Assoc. Prof. Dr. Kübra YAZICI

Assoc. Prof. Dr. Malik YILMAZ

Assoc. Prof. Dr. Nursen IŞIK

Assoc. Prof. Dr. Özlem ÜLGER DANACI

Assoc. Prof. Dr. Sancar BULUT

Assoc. Prof. Dr. Seda BENGİ

Assoc. Prof. Dr. Şükrü KALAYCI

Assoc. Prof. Dr. Zamiğ TEHMEZOV

Assoc. Prof. Dr. Zeynep Deniz ŞAHİN İNAN

Dr. Elvan CAFEROV

Dr. Fatma AZİZOĞLU

Dr. Gönül GÖKÇAY

Dr. Hayri YILDIRIM

ISBN: "978-625-378-231-3"

SCIENCE AND ADVISORY COMMITTEE

- Prof. Dr. Ali OKATAN
İstanbul Aydın University
- Prof. Dr. Anwar Ali Shah G. SYED
University Of Sindh Jamshoro
- Prof. Dr. Ivan PAVLOVIĆ
Scientific Institute of Veterinary Medicine of Serbia
- Prof. Dr. Morakeng EDWARD
Kenneth LEBAKA University Of Zululand
- Prof. Dr. Mukadder MOLLAOĞLU
Cumhuriyet University
- Prof. Dr. Jain SADHNA
University Of Delhi
- Prof. Dr. Manole COJOCARU
Titu Maiorescu University
- Prof. Dr. Mustafa Fedai ÇAVUŞ
Osmaniye Korkut Ata University
- Prof. Dr. Mustafa Onur ALADAĞ
Selçuk University
- Prof. Dr. Nurdan KALAYCI
Gazi University
- Prof. Dr. Mustafa METE
Gaziantep University
- Prof. Dr. Neslihan ŞAHİN
Sivas Cumhuriyet University
- Prof. Dr. Orhan ZEYBEK
Balıkesir University
- Prof. Dr. Selahattin YAVUZ
Erzincan Binali Yıldırım University
- Prof. Dr. Seyfi ŞEVİK
Hitit University
- Prof. Dr. Sevi ÖZ
Ankara Hacı Bayram Veli University
- Prof. Dr. Songül ÇAKMAKÇI
Atatürk University
- Prof. Dr. Yadigar GÜLSEVEN SİDİR
Bitlis Eren University
- Prof. Dr. Zharkynbike SULEIMENOVA
Kazakh National Women's Pedagogical University
- Assoc. Prof. Dr. Abdulkarim DİLER
Atatürk University
- Assoc. Prof. Dr. Armel MBON
Marien Ngouabi University
- Assoc. Prof. Dr. Azimbaeva GULBAYRA
Kazakh National Women's Pedagogical University
- Assoc. Prof. Dr. Betül GÜZELDİR
Atatürk University
- Assoc. Prof. Dr. Çiğdem BOGENÇ
Karabük University
- Assoc. Prof. Dr. Elif Feyza TOPDAŞ
Atatürk University
- Assoc. Prof. Dr. Hasan TELLİ
Mersin University
- Assoc. Prof. Dr. Oqtay QULİYEV
Azerbaycan Devlet İktisat University
- Assoc. Prof. Dr. Ömer Faruk RENÇBER
Gaziantep University
- Assoc. Prof. Dr. Sahure YARIŞ
Dicle University

Assoc. Prof. Dr. Salman Bashir MEMON
Shah Abdul Latif University
Assoc. Prof. Dr. Sancar BULUT
Kayseri University
Assoc. Prof. Dr. Sevcin YILDIZ
Akdeniz University
Assoc. Prof. Dr. Syed Ali Raza NAQVI
Government College University Faisalabad
Assoc. Prof. Dr. Tamer TURGUT
Atatürk University
Assoc. Prof. Dr. Victoria POSTOLACHE
Alec Russo Balti State University
Assoc. Prof. Dr. Yılmaz SEÇİM
Necmettin Erbakan University
Assoc. Prof. Dr. Zamig TEHMEZOV
Azerbaijan Devlet Pedagoji University
Dr. Ajay B. GADİCHA
Sant Gadge Baba Amravati University
Dr. Amira TANDİROVİC GURSEL
Adana Alparslan Türkeş University of Science and Technology
Dr. Aqil MEMMEDOV
Azerbaijan Devlet İktisat University
Dr. Babak SAFAEI
Tsinghua University
Dr. Elşen MEMMEDLİ
Azerbaijan Devlet İktisat University
Dr. Faisal SULTAN
Hazara University
Dr. Ghanshyam BARMAN
Uka Tarsadia University
Dr. Gülnar MİRZEYEVA
Azerbaijan Devlet İktisat University
Dr. Gülşen MEHERREMOVA
Azerbaijan Diller University
Dr. Hassan ZARIOUH
Mohammed First University
Dr. Iram Liaqat AWAN
Government College University
Dr. Irina-Ana DROBOT
Technical University of Civil Engineering Bucharest, Romania
Dr. İslam DEVİREN
MEB
Dr. Joanna HERNİK
West Pomeranian University of Technology
Dr. Nurhoca AKBULAYEV
Azerbaijan Devlet İktisat University
Dr. Rida ZULFİQAR
University of Szeged
Dr. Taha Yasin ÖLMEZTOPRAK
Adıyaman University
Dr. Tatia DOLİDZE
European University
Dr. Yaşar SUBAŞI
Van Yüzüncü Yıl University

ISARC

**7. INTERNATIONAL MEDITERRANEAN SCIENTIFIC
RESEARCH AND INNOVATION CONGRESS**

19-20 APRIL 2025

ANTALYA

CONGRESS PROGRAM

JOIN ZOOM MEETING:

19.04.2025

Meeting ID: **850 5127 1111** Passcode: **010024**

<https://us02web.zoom.us/j/85051271111?pwd=2TR75haHhv0EvS8usx33GE8fX75nXu.1>

20.04.2025

Meeting ID: **825 8270 2407** Passcode: **378145**

<https://us02web.zoom.us/j/82582702407?pwd=tFR23axBa42Hub5V1nXPe2w4XRImGO.1>

PARTICIPATING COUNTRIES

**Algeria/Argentina/Azerbaijan/Ecuador/Fas/Georgia/Jordan/Kosova/India/Indonesia/Iran/Malaysia/Mexico/
Moldova/Nigeria/Pakistan/Philippines/Serbia/Sri Lanka/Uzbekistan/Vietnam**

zoom



ÖNEMLİ, DİKKATLE OKUYUNUZ LÜTFEN

- ❖ Kongremizde Yazım Kurallarına uygun gönderilmiş ve bilim kurulundan geçen bildiriler için online (video konferans sistemi üzerinden) sunum imkanı sağlanmıştır.
- ❖ Online sunum yapabilmek için <https://zoom.us/join> sitesi üzerinden giriş yaparak “Meeting ID or Personal Link Name” yerine ID numarasını girerek oturuma katılabilirsiniz.
- ❖ Zoom uygulaması ücretsizdir ve hesap oluşturmaya gerek yoktur.
- ❖ Zoom uygulaması kaydolmadan kullanılabilir.
- ❖ Uygulama tablet, telefon ve PC’lerde çalışıyor.
- ❖ Her oturumdaki sunucular, sunum saatinden 5 dk öncesinde oturuma bağlanmış olmaları gerekmektedir.
- ❖ Tüm kongre katılımcıları canlı bağlanarak tüm oturumları dinleyebilir.
- ❖ Moderatör – oturumdaki sunum ve bilimsel tartışma (soru-cevap) kısmından sorumludur.

DİKKAT EDİLMESİ GEREKENLER- TEKNİK BİLGİLER

- ◆ Bilgisayarınızda mikrofon olduğuna ve çalıştığına emin olun.
- ◆ Zoom’da ekran paylaşma özelliğine kullanabilmelisiniz.
- ◆ Katılım belgeleri kongre sonunda tarafınıza pdf olarak gönderilecektir
- ◆ Kongre programında yer ve saat değişikliği gibi talepler dikkate alınmayacaktır

IMPORTANT, PLEASE READ CAREFULLY

- ❖ To be able to attend a meeting online, login via <https://zoom.us/join> site, enter ID “Meeting ID or Personal Link Name” and solidify the session.
- ❖ The Zoom application is free and no need to create an account.
- ❖ The Zoom application can be used without registration.
- ❖ The application works on tablets, phones and PCs.
- ❖ The participant must be connected to the session 5 minutes before the presentation time.
- ❖ All congress participants can connect live and listen to all sessions.
- ❖ Moderator is responsible for the presentation and scientific discussion (question-answer) section of the session.

POINTS TO TAKE INTO CONSIDERATION - TECHNICAL INFORMATION

- ◆ Make sure your computer has a microphone and is working.
- ◆ You should be able to use screen sharing feature in Zoom.
- ◆ Attendance certificates will be sent to you as pdf at the end of the congress.
- ◆ Requests such as change of place and time will not be taken into consideration in the congress program.

ÖNEMLİ NOT: SUNUMLARINIZI HEM TÜRKÇE HEM İNGİLİZCE HAZIRLAMANIZI RİCA EDERİZ

19.04.2025
SATURDAY / 14:30-16:30

SESSION-2 HALL-6
MODERATOR: Prof. Dr. Gökçe DEMİR

AUTHORS	AFFILIATION	TOPIC TITLE
Prof. Dr. Gökçe DEMİR Akile EREN	Kırşehir Ahi Evran University	A Review On Behavioural Addiction And Nursing Practices
Akile EREN Prof. Dr. Gökçe DEMİR	Kırşehir Ahi Evran University	Pathological Skin Picking Disorder And Nursing Practices
Lamiya MAHMUDOVA Sibel GÜNEŞ BAĞIŞ Ayla EKER SARIBOYACI Tayfun ŞENGEL	Eskişehir Osmangazi University	Investigation of the immunomodulatory effects of preconditioned Wharton's gel-derived mesenchymal stem cells
Aytan İlham qızı Alışanlı	Baku State University	Characteristics Of Emotional Intelligence In Convicts Who Have Committed Crimes Against Life And Health
Hacı Mehmet ÇALIŞKAN Ömer JARADAT	Kırşehir Ahi Evran University, Kırşehir Training and Research Hospital	Atypical Unilateral Contrast-Induced Nephropathy In A Patient With Peritoneal Carcinomatosis: A Case Report
Hacı Mehmet ÇALIŞKAN	Kırşehir Ahi Evran University	Polyarteritis Nodosa Presenting As Splenic Infarction: Diagnostic Challenge
Assist. Prof. Dr. Enes DALMANOĞLU	Balıkesir University	A Case Of Brucellosis Presenting As A Thigh Abscess

**PERİTON KARSİNOMATOZU OLAN BİR HASTADA ATİPİK TEK BÖBREK
TUTULUMLU KONTRAST NEFROPATİSİ: OLGU SUNUMU**

Hacı Mehmet ÇALIŞKAN

Kırşehir Ahi Evran University, Faculty of Medicine, Department of Emergency Medicine, 40100
Merkez, Kırşehir

ORCID: 0000-0001-7370-420X

Ömer JARADAT

Kırşehir Training and Research Hospital, Emergency Medicine Clinic, 40100 Merkez, Kırşehir

ORCID: 0000-0002-6177-710X

ÖZET

Kontrast kaynaklı nefropati (KKN), kontrast ilişkili akut böbrek hasarı (KİABH) olarak da bilinir ve iyotlu kontrast maddenin intravasküler uygulanmasını takiben 48-72 saat içinde böbrek fonksiyonlarında geri dönüşümlü bir bozulma ile karakterize önemli bir iyatrojenik komplikasyondur. Önleyici stratejilerdeki ilerlemelere rağmen, KKN özellikle yaşlı hastalar, kronik böbrek hastalığı, diyabet veya hipovolemi gibi yüksek riskli popülasyonlarda hastane kaynaklı akut böbrek hasarının önemli bir nedenidir. Bu olgu sunumu, belirgin bazal böbrek bozukluğu ile geleneksel olarak ilişkilendirilmeyen periton karsinomatozu olan 68 yaşındaki bir kadın hastada KKN'nin tanısallık zorluklarını ve klinik etkilerini vurgulamaktadır. Hasta, kanser takibi için kontrastlı abdominal BT taramasından üç gün sonra anüri, karın ağrısı ve hiponatremi (116 mmol/L) ile başvurdu. İlk laboratuvar bulgularında yüksek üre (45 mg/dL) ve potasyum (5.2 mmol/L) saptanırken, bazal kreatinin normaldi (1.1 mg/dL). Sonrasında yapılan kontrastsız BT'de sadece sağ böbrekte kontrast birikimi gözlemlendi; bu bulgu, tipik KKN sunumlarında alışılmadık bir özelliktir. Perkütan nefrostomi ve yoğun bakım dahil agresif tedaviye rağmen hasta, refrakter hiponatremi ve ilerleyen akut böbrek hasarı geliştirdi ve hastaneye yatışının 11. gününde kaybedildi. Bu olgu, malignite ile ilişkili kronik inflamasyon, endotel disfonksiyonu ve subklinik hipovolemi gibi faktörlerin kontrast kaynaklı böbrek hasarını şiddetlendirdiği onkolojik hastalarda KKN'nin çok faktörlü doğasını ortaya koymaktadır. Özellikle, konvansiyonel 48 saatlik pencereyi aşan akut böbrek hasarının gecikmiş başlangıcı ve şiddetli hiponatremi varlığı, tümör biyolojisi ile kontrast toksisitesi arasındaki benzersiz patofizyolojik etkileşimlere işaret etmektedir. Rapor, kakektik veya yaşlı hastalarda risk değerlendirmesi için yalnızca bazal kreatinine güvenmenin sınırlamalarını vurgulamakta ve sistatin C gibi alternatif biyobelirteçlerin kullanımını ve kapsamlı frailty değerlendirmelerini savunmaktadır. Ayrıca, yüksek riskli popülasyonlarda tekrarlanan kontrast maruziyetinin tehlikelerini ve hidrasyon ile kontrast minimizasyonu içeren profilaktik

protokollere daha sıkı uyum gerekliliğini öne çıkarmaktadır. Bu bulgular, kanser hastalarına kontrast madde uygulanırken artan klinik dikkat ve multidisipliner koordinasyonun yanı sıra, bu savunmasız popülasyonda sonuçları iyileştirmek için maligniteye özgü KKN mekanizmalarının araştırılması ihtiyacını ortaya koymaktadır.

Anahtar Kelimeler: Kontrast kaynaklı nefropati, Akut böbrek hasarı, Onkolojik hastalar

ATYPICAL UNILATERAL CONTRAST-INDUCED NEPHROPATHY IN A PATIENT WITH PERITONEAL CARCINOMATOSIS: A CASE REPORT

ABSTRACT

Contrast-induced nephropathy (CIN), also known as contrast-associated acute kidney injury (CA-AKI), is a significant iatrogenic complication characterized by a reversible decline in renal function within 48–72 hours following intravascular administration of iodinated contrast media. Despite advances in preventive strategies, CIN remains a major cause of hospital-acquired acute kidney injury, particularly in high-risk populations such as elderly patients, those with chronic kidney disease, diabetes, or hypovolemia. This case report highlights the diagnostic challenges and clinical implications of CIN in a 68-year-old female with peritoneal carcinomatosis, a condition not traditionally associated with overt baseline renal impairment. The patient presented with anuria, abdominal pain, and hyponatremia (116 mmol/L) three days after undergoing a contrast-enhanced abdominal CT scan for cancer surveillance. Initial laboratory findings revealed elevated urea (45 mg/dL) and potassium (5.2 mmol/L), while baseline creatinine was normal (1.1 mg/dL). A subsequent non-contrast CT demonstrated contrast accumulation in the right kidney only, an unusual feature in typical CIN presentations. Despite aggressive management, including percutaneous nephrostomy and intensive care, the patient developed refractory hyponatremia and progressive AKI, leading to death on day 11 of hospitalization. This case underscores the multifactorial nature of CIN in oncologic patients, where malignancy-related factors such as chronic inflammation, endothelial dysfunction, and subclinical hypovolemia exacerbate contrast-induced renal injury. Notably, the delayed onset of AKI beyond the conventional 48-hour window and the presence of severe hyponatremia suggest unique pathophysiological interactions between tumor biology and contrast toxicity. The report emphasizes the limitations of relying solely on baseline creatinine for risk assessment in cachectic or elderly patients, advocating for alternative biomarkers such as cystatin C and comprehensive frailty evaluations. Furthermore, it highlights

the dangers of repeated contrast exposure in high-risk populations and the need for stricter adherence to prophylactic protocols, including hydration and contrast minimization. These findings call for heightened clinical vigilance and multidisciplinary coordination when administering contrast media to cancer patients, as well as further research into malignancy-specific mechanisms of CIN to improve outcomes in this vulnerable population.

Keywords: Contrast-induced nephropathy, Acute kidney injury, Oncologic patients

1. INTRODUCTION

Contrast-induced nephropathy (CIN), also termed contrast-associated acute kidney injury (CA-AKI), is defined as a reversible decline in renal function occurring within 48–72 hours following intravascular administration of iodinated contrast media (Mehran & Nikolsky, 2006). The condition is diagnosed when serum creatinine rises by ≥ 0.5 mg/dL or $\geq 25\%$ from baseline, with alternative causes excluded (KDIGO, 2012). CIN remains a significant iatrogenic complication, accounting for 10–15% of hospital-acquired acute kidney injury (AKI) cases (Nash, Hafeez, & Hou, 2002). Its incidence varies widely depending on patient risk factors, including pre-existing chronic kidney disease (CKD), diabetes mellitus, advanced age, and hypovolemia (McCullough et al., 1997). In high-risk populations, such as those with an estimated glomerular filtration rate (eGFR) < 30 mL/min/1.73 m², incidence rates exceed 30% (Rudnick et al., 2008).

The pathophysiology of CIN involves renal vasoconstriction, oxidative stress, and direct tubular toxicity from contrast media, exacerbated by reduced renal perfusion (Heyman et al., 2010). Prophylactic strategies, such as hydration protocols and limiting contrast volume, are cornerstone interventions to mitigate risk (Subramaniam et al., 2016). Despite advances, CIN remains associated with prolonged hospitalization, accelerated progression to CKD, and increased mortality (James et al., 2013). This case report describes a patient with peritoneal carcinomatosis who developed fatal AKI following contrast exposure, underscoring the complexities of CIN in oncologic populations and the importance of risk stratification even in patients without overt baseline renal impairment.

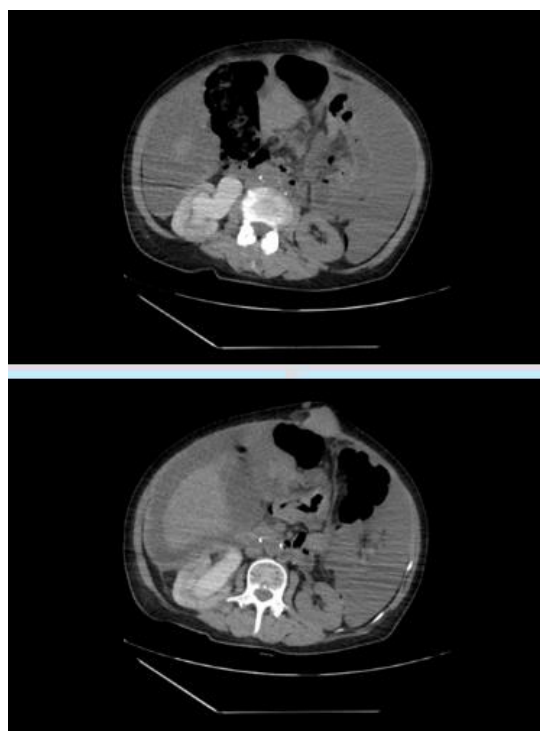
2. MATERIAL AND METHODS

A 68-year-old female patient presented to the emergency department with complaints of anuria and abdominal pain. The patient had a documented history of peritoneal carcinomatosis, for which she was under multidisciplinary follow-up. There was no history of anticoagulant or antiplatelet medication use, nor any recent trauma. Her Glasgow Coma Scale score was 15. Vital signs included

a blood pressure of 110/70 mmHg, oxygen saturation of 98%, heart rate of 84 beats/min, and body temperature of 36.4°C. Physical examination revealed a non-tender abdomen without guarding or rebound tenderness. Right flank pain was reported, with positive costovertebral angle tenderness. Other systemic examinations were unremarkable.

Laboratory findings demonstrated elevated urea (45 mg/dL), potassium (5.2 mmol/L), and CRP (11.9 mg/L), with hyponatremia (116 mmol/L), hemoglobin of 9 g/dL, and normal creatinine (1.1 mg/dL). Blood gas analysis, liver function tests, and other parameters were within normal limits. A non-contrast abdominal computed tomography (CT) scan was performed to evaluate acute kidney injury (AKI) and exclude additional pathologies. Imaging revealed increased density in the right kidney and hyperdensity within the right ureter (Figure 1), radiologically interpreted as renal hemorrhage.

Figure 1. Hyperdensity in the right kidney and ureter



Further history-taking confirmed no recent anticoagulant/antiplatelet use or trauma. It was noted that a contrast-enhanced abdominal CT had been performed three days prior at an external facility for peritoneal carcinomatosis surveillance. Following urology consultation, a percutaneous

nephrostomy catheter was placed, no bleeding was detected. The patient was diagnosed with CIN and admitted to the internal medicine service for the management of CIN and hyponatremia.

During hospitalization, the patient developed refractory hyponatremia and progressive AKI, with poor response to treatment due to diminished physiological reserve. On day 9 of admission, she was transferred to the internal medicine intensive care unit (ICU). Despite optimal medical care, the patient expired on day 11.

3. RESULTS AND DISCUSSION

CIN arises from a combination of hemodynamic and cytotoxic insults. Iodinated contrast media induces renal medullary hypoxia via vasoconstriction of the vasa recta and disrupts tubular epithelial cells through reactive oxygen species (Andreucci et al., 2014). Patients with reduced renal perfusion—due to dehydration, heart failure, or malignancy-related cachexia—are particularly vulnerable (Tumlin et al., 2006). The Mehran risk score, incorporating variables such as hypotension and anemia, aids in predicting CIN risk (Mehran et al., 2004).

In this case, the patient's peritoneal carcinomatosis likely contributed to subclinical hypovolemia and chronic inflammation, exacerbating contrast-induced injury (Porta et al., 2015). Despite normal baseline creatinine, her advanced age and malignancy-related frailty signaled diminished renal reserve, a critical factor often overlooked in CIN risk assessment (Chronopoulos, Cruz, & Ronco, 2010).

Oncologic patients frequently require contrast imaging for disease monitoring, yet their susceptibility to CIN is underrecognized. Malignancies are associated with chronic inflammation, endothelial dysfunction, and electrolyte imbalances, all of which potentiate contrast toxicity (Rosner & Perazella, 2017). Hyponatremia, as seen in this patient, independently predicts AKI severity and mortality in CIN (Waikar, Mount, & Curhan, 2009).

Notably, this patient underwent two CT scans within 72 hours: a contrast-enhanced study followed by a non-contrast scan. Cumulative contrast exposure, even at moderate doses, amplifies nephrotoxic risk (Heinrich et al., 2009). Current guidelines discourage repeated contrast administration within 48 hours for high-risk patients, yet adherence remains inconsistent in oncology (van der Molen et al., 2018).

Unilateral involvement may suggest pre-existing asymmetrical renal vulnerability. The right kidney's hyperdensity and hemorrhage could reflect localized vascular injury exacerbated by contrast-induced oxidative stress (Hardiek et al., 2001). Alternatively, peritoneal carcinomatosis

may have caused mechanical compression or inflammatory infiltration of the right ureter or vasculature, impairing contrast clearance and amplifying regional toxicity (Gershman et al., 2017). The absence of anticoagulant use or trauma underscores the need to explore novel mechanisms in malignancy-associated CIN.

This case underscores three critical clinical insights: First, baseline creatinine levels may inadequately reflect renal reserve in cachectic or elderly patients, as evidenced by the development of contrast-induced nephropathy (CIN) despite a normal baseline creatinine of 1.1 mg/dL, highlighting the necessity for alternative biomarkers such as cystatin C to assess renal vulnerability in high-risk populations (Levey & Coresh, 2012; Shlipak et al., 2013). Second, the delayed onset of acute kidney injury (AKI) three days post-contrast exposure beyond the typical 48-hour window aligns with reports of prolonged nephrotoxic trajectories in patients with comorbidities like sepsis or heart failure, suggesting malignancy-associated systemic inflammation may similarly delay CIN manifestation (Pickering, James, & Palmer, 2015). Third, refractory hyponatremia (116 mmol/L) likely exacerbated renal dysfunction, as malignancy-related factors such as syndrome of inappropriate antidiuretic hormone (SIADH) and chronic volume depletion create a bidirectional pathological relationship with AKI, complicating fluid and electrolyte management in CIN (Ellison & Berl, 2007). These findings collectively emphasize the multifactorial interplay between malignancy, contrast toxicity, and renal pathophysiology.

Comparatively, Hong et al. (2016) found that cancer patients with CIN had a 4.2-fold higher mortality risk compared to cancer patients without CIN, likely due to systemic vulnerabilities such as hypoalbuminemia and comorbidities (Hong et al., 2016). Our case aligns with these findings, as the patient's limited physiological reserve and pre-existing frailty rendered standard therapies ineffective.

CONCLUSIONS

This case underscores the multifactorial nature of CIN in oncologic patients, where malignancy-related vulnerabilities amplify contrast nephrotoxicity despite normal baseline renal markers. Clinicians must adopt rigorous risk stratification, including assessment of frailty and inflammatory status, when ordering contrast studies in this population. Prophylactic hydration, biomarker-guided monitoring, and multidisciplinary coordination are essential to mitigate adverse outcomes. Future research should explore the interplay between tumor biology and contrast-induced renal injury to refine preventive strategies.

REFERENCES

- Andreucci, M., Faga, T., Pisani, A., et al. (2014). Acute kidney injury by radiographic contrast media: Pathogenesis and prevention. *Biomedical Research International*, 2014, 362725.
- Chronopoulos, A., Cruz, D. N., & Ronco, C. (2010). Hospital-acquired acute kidney injury in the elderly. *Nature Reviews Nephrology*, 6(3), 141–149.
- Ellison, D. H., & Berl, T. (2007). Clinical practice. The syndrome of inappropriate antidiuresis. *New England Journal of Medicine*, 356(20), 2064–2072.
- Gershman, B., Moreira, D. M., Thompson, R. H., et al. (2017). Renal cell carcinoma with isolated lymph node involvement: Long-term natural history and predictors of oncologic outcomes following surgical resection. *European Urology*, 72(2), 300–306.
- Hardiek, K., Katholi, R. E., Ramkumar, V., et al. (2001). Proximal tubule cell response to radiographic contrast media. *American Journal of Physiology-Renal Physiology*, 280(1), F61–F70.
- Heinrich, M. C., Haberle, L., Muller, V., et al. (2009). Nephrotoxicity of iso-osmolar iodixanol compared with nonionic low-osmolar contrast media: Meta-analysis of randomized controlled trials. *Radiology*, 250(1), 68–86.
- Heyman, S. N., Rosen, S., Khamaisi, M., et al. (2010). Reactive oxygen species and the pathogenesis of radiocontrast-induced nephropathy. *Investigative Radiology*, 45(4), 188–195.
- Hong, S. I., Ahn, S., Lee, Y. S., Kim, W. Y., Lim, K. S., Lee, J. H., & Lee, J. L. (2016). Contrast-induced nephropathy in patients with active cancer undergoing contrast-enhanced computed tomography. *Supportive care in cancer : official journal of the Multinational Association of Supportive Care in Cancer*, 24(3), 1011–1017.
- James, M. T., Samuel, S. M., Manning, M. A., et al. (2013). Contrast-induced acute kidney injury and risk of adverse clinical outcomes after coronary angiography: A systematic review and meta-analysis. *Circulation: Cardiovascular Interventions*, 6(1), 37–43.
- KDIGO. (2012). KDIGO Clinical Practice Guideline for Acute Kidney Injury. *Kidney International Supplements*, 2(1), 1–138.
- Levey, A. S., & Coresh, J. (2012). Chronic kidney disease. *The Lancet*, 379(9811), 165–180.
- McCullough, P. A., Wolyn, R., Rocher, L. L., et al. (1997). Acute renal failure after coronary intervention: Incidence, risk factors, and relationship to mortality. *The American Journal of Medicine*, 103(5), 368–375.
- Mehran, R., & Nikolsky, E. (2006). Contrast-induced nephropathy: Definition, epidemiology, and patients at risk. *Kidney International Supplements*, 100, S11–S15.
- Mehran, R., Aymong, E. D., Nikolsky, E., et al. (2004). A simple risk score for prediction of contrast-induced nephropathy after percutaneous coronary intervention: Development and initial validation. *Journal of the American College of Cardiology*, 44(7), 1393–1399.
- Nash, K., Hafeez, A., & Hou, S. (2002). Hospital-acquired renal insufficiency. *American Journal of Kidney Diseases*, 39(5), 930–936.
- Pickering, J. W., James, M. T., & Palmer, S. C. (2015). Acute kidney injury and prognosis after cardiopulmonary bypass: A meta-analysis of cohort studies. *American Journal of Kidney Diseases*, 65(2), 283–293.

- Porta, C., Cosmai, L., Gallieni, M., et al. (2015). Renal effects of targeted anticancer therapies. *Nature Reviews Nephrology*, 11(6), 354–370.
- Rosner, M. H., & Perazella, M. A. (2017). Acute kidney injury in patients with cancer. *New England Journal of Medicine*, 376(18), 1770–1781.
- Rudnick, M. R., Davidson, C., Laskey, W., Stafford, J. L., Sherwin, P. F., & VALOR Trial Investigators (2008). Nephrotoxicity of iodixanol versus ioversol in patients with chronic kidney disease: the Visipaque Angiography/Interventions with Laboratory Outcomes in Renal Insufficiency (VALOR) Trial. *American heart journal*, 156(4), 776–782.
- Shlipak, M. G., Matsushita, K., Arnlov, J., et al. (2013). Cystatin C versus creatinine in determining risk based on kidney function. *New England Journal of Medicine*, 369(10), 932–943.
- Subramaniam, R. M., Suarez-Cuervo, C., Wilson, R. F., et al. (2016). Effectiveness of prevention strategies for contrast-induced nephropathy: A systematic review and meta-analysis. *Annals of Internal Medicine*, 164(6), 406–416.
- Tumlin, J., Stacul, F., Adam, A., et al. (2006). Pathophysiology of contrast-induced nephropathy. *The American Journal of Cardiology*, 98(6A), 14K–20K.
- van der Molen, A. J., Reimer, P., Dekkers, I. A., et al. (2018). Post-contrast acute kidney injury—Part 1: Definition, clinical features, incidence, role of contrast medium and risk factors. *European Radiology*, 28(7), 2845–2855.
- Waikar, S. S., Mount, D. B., & Curhan, G. C. (2009). Mortality after hospitalization with mild, moderate, and severe hyponatremia. *The American Journal of Medicine*, 122(9), 857–865.

CERTIFICATE

OF PARTICIPATION

THIS CERTIFICATE IS PROUDLY PRESENTED TO

Hacı Mehmet ÇALIŞKAN

In oral and technical presentation recognition and appreciation of research contributions
to **7. INTERNATIONAL MEDITERRANEAN SCIENTIFIC RESEARCH AND
INNOVATION CONGRESS** 19-20 APRIL 2025 / Antalya/TURKEY
with the paper entitled

**" Polyarteritis Nodosa Presenting As Splenic
Infarction: Diagnostic Challenge "**



YASEMIN AĞAOĞLU
HEAD OF CONGRESS GROUP



SEFA SALIH BILDIRICI
HEAD OF ISARC

