Patient Voice

1381 Improving the Evaluation Process for Potential Living Kidney Donor Candidates
Karol Franks
See related article on page 1464.

Editorials

1383 COVID-19–Associated Acute Kidney Injury: An Evolving Picture
Edward D. Siew and Bethany C. Birkelo
See related article on page 1394.

1386 SGLT2 Inhibitors across the Spectrum of Severity of CKD
Ali Ziaolhagh and Christos Argyropoulos
See related article on page 1433.

1389 Artificial Intelligence: The Next Frontier in Kidney Biopsy Evaluation
Jean Hou and Cynthia C. Nast
See related article on page 1445.

1392 IgE in Antibody-Mediated Rejection: A Novel Pathogenic Mechanism?
Benjamin A. Adam and Howard M. Gebel
See related article on page 1474.

Original Articles

Acute Kidney Injury and ICU Nephrology

1394 The Incidence, Risk Factors, and Prognosis of Acute Kidney Injury in Adult Patients with Coronavirus Disease 2019
Yichun Cheng, Ran Luo, Xu Wang, Kun Wang, Nanhui Zhang, Meng Zhang, Zhixiang Wang, Lei Dong, Junhua Li, Rui Zeng, Ying Yao, Shuwang Ge, and Gang Xu
See related Editorial on page 1383.

1403 Acute Kidney Injury and Risk of CKD and Hypertension after Pediatric Cardiac Surgery

Chronic Kidney Disease

1413 Intrauterine Growth Restriction and Risk of Diverse Forms of Kidney Disease during the First 50 Years of Life
Anna Gjerde, Anna Varberg Reisæter, Rannveig Skrunes, Hans-Peter Marti, and Bjørn Egil Vikse

1424 Performance of the Kidney Failure Risk Equation by Disease Etiology in Advanced CKD
Gregory L. Hundemer, Navdeep Tangri, Manish M. Sood, Tim Ramsay, Ann Bugeja, Pierre A. Brown, Edward G. Clark, Mohan Biyani, Christine A. White, and Ayub Akbari
Diabetes and the Kidney

1433 Empagliflozin and Cardiovascular and Kidney Outcomes across KDIGO Risk Categories: Post Hoc Analysis of a Randomized, Double-Blind, Placebo-Controlled, Multinational Trial
Adeera Levin, Vlado Perkovic, David C. Wheeler, Stefan Hantel, Jyothis T. George, Maximilian von Eynatten, Audrey Kotika-Weber, and Christoph Wanner, on behalf of the EMPA-REG OUTCOME Investigators
See related Editorial on page 1386.

Glomerular and Tubulointerstitial Diseases

1445 Evaluation of the Classification Accuracy of the Kidney Biopsy Direct Immunofluorescence through Convolutional Neural Networks
Giulia Ligabue, Federico Pollastri, Francesca Fontana, Marco Leonelli, Luciana Furci, Silvia Giovanella, Gaetano Alfano, Gianni Cappelli, Francesca Testa, Federico Boelli, Costantino Grana, and Riccardo Magistroni
See related Editorial on page 1389.

Transplantation

1455 Donor Age, Donor-Recipient Size Mismatch, and Kidney Graft Survival
Fanny Lepeytre, Catherine Delmas-Frenette, Xun Zhang, Stéphanie Larivière-Beaudoin, Ruth Sapir-Pichhadze, Bethany J. Foster, and Héloïse Cardinal

1464 A RAND-Modified Delphi on Key Indicators to Measure the Efficiency of Living Kidney Donor Candidate Evaluations
Steven Habbous, Lianne Barnieh, Kenneth Litchfield, Susan McKenzie, Marian Reich, Nga N. Lam, Istvan Mucsi, Ann Bugeja, Seychelle Yohanna, Rahul Mainra, Kate Chong, Daniel Fantus, G V Ramesh Prasad, Christine Dipchand, Jagbir Gill, Leah Getchell, and Amit X. Garg
See related Patient Voice on page 1381.

1474 IgE-Mediated Immune Response and Antibody-Mediated Rejection
Federica Rascio, Paola Pontrelli, Giuseppe Stefano Netti, Elisabetta Manno, Barbara Infante, Simona Simone, Giuseppe Castellano, Elena Ranieri, Michela Seveso, Emanuele Cozzi, Loreto Gesualdo, Giovanni Stallone, and Giuseppe Grandaliano
See related Editorial on page 1392.

1484 The Histological Picture of Indication Biopsies in the First 2 Weeks after Kidney Transplantation

Research Letter

1494 COVID-19 in Children with Nephrotic Syndrome on Anti-CD20 Chronic Immunosuppression
Andrea Angeletti, Stefania Drovandi, Francesca Sanguinieri, Maria Santaniello, Giulia Ferrando, Roberto Forno, Gaia Cipresso, Gianluca Caridi, Leonardo V. Riella, Paolo Cravedi, and Gian Marco Ghiggeri

Erratum

1496 Correction
Genomics of Kidney Disease

1497 Clinical Genetic Screening in Adult Patients with Kidney Disease
Enrico Cocchi, Jordan Gabriela Nestor, and Ali G. Gharavi

Kidney Case Conference: How I Treat

1511 Management Consideration in Drug-Induced Lactic Acidosis
Alexander Morales and John Danziger
On the Cover

What is the diagnosis?
A 45-year-old woman with kidney failure due to obstructive nephropathy was referred to our nephrology clinic with worsening pain in the lower back, hip, and knee. She had been on hemodialysis for 9 years without receiving calcitriol, vitamin D analogues, or calcimimetics. Physical examination revealed no swelling or tenderness. Serum alkaline phosphatase level was 2418 U/L and intact parathyroid hormone level was 2300 pg/mL. Ultrasound imaging showed four enlarged parathyroid glands. An iliac crest bone biopsy was performed after doxycycline double labeling. Doxycycline was given orally at a dosage of 100 mg twice daily for 3 days for the first label, and was given again at the same dosage 2 weeks later for the second label. The patient became able to stand up and walk after parathyroidectomy with autotransplantation, physical therapy, and starting oral calcitriol.

Image Description:
Villanueva bone staining was performed on the bone biopsy specimen. Left image: Light microscopy demonstrated large groups of osteoblasts adjacent to an increased volume of osteoid occupying 20% of the bone volume, and clusters of osteoclasts with a marked amount of fibrous tissue occupying 33% of the tissue area. Center image: Fluorescent microscopy showed a double-labeled segment indicating recent mineralization, but revealed a large amount of unmineralized osteoid. Right image: Polarized light microscopy demonstrated both mechanically strong lamellar bone and weak woven bone. Increased bone turnover and insufficient mineralization confirmed the diagnosis of mixed uremic osteodystrophy due to secondary hyperparathyroidism.

Teaching Points:
Mixed uremic osteodystrophy is characterized by the concurrence of excessive bone resorption and delayed mineralization in the context of extensive osteoclastic and osteoblastic activity. Despite the progress in biochemical markers of bone turnover, bone biopsy remains the gold standard for the assessment of bone metabolism. Although bone biopsy is not frequently performed due to its invasiveness, these images remind us of the complexity of bone metabolism, which should be kept in mind when treating patients with CKD.

(Images and text provided by Yasuhiro Oda and Tatsuya Suwabe, Nephrology Center, Toranomon Hospital Kajigaya, Kanagawa, Japan; Junichiro Hoshiho, Nephrology Center, Toranomon Hospital Kajigaya, Kanagawa, Japan and Okinaka Memorial Institute for Medical Research, Toranomon Hospital, Tokyo, Japan; Naoki Sawa, Nephrology Center, Toranomon Hospital Kajigaya, Kanagawa, Japan; Keiichi Kinowaki, Department of Pathology, Toranomon Hospital, Tokyo, Japan; Kenichi Ohashi, Department of Pathology, Toranomon Hospital, Tokyo, Japan; Takeshi Fujii, Department of Pathology, Toranomon Hospital, Tokyo, Japan; and Yoshifumi Ubara, Nephrology Center, Toranomon Hospital Kajigaya, Kanagawa, Japan and Okinaka Memorial Institute for Medical Research, Toranomon Hospital, Tokyo, Japan; with acknowledgment to Akemi Ito, Ito Bone Histomorphometry Institute, Niigata, Japan, for performing the histomorphometric analysis of the bone biopsy specimen.)