



Acute focal bacterial nephritis in an occupational allergy

Ryo Iga, Hiroshi Uchino, Ken Kanazawa, Shuki Usui, Masahiko Miyagi, Naoki Kumashiro, Takahisa Hirose

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Division of Diabetes, Metabolism and Endocrinology, Department of Internal Medicine, Toho University School of Medicine, Tokyo, Japan (R Iga MD, H Uchino MD, K Kanazawa MD, S Usui MD, M Miyagi MD, N Kumashiro MD, Prof T Hirose MD)

Correspondence to: Dr Hiroshi Uchino, Division of Diabetes, Metabolism and Endocrinology, Department of Internal Medicine, Toho University School of Medicine, 6-11-1 Omorinishi, Ota-ku, Tokyo 143-8540, Japan
h.uchino@med.toho-u.ac.jp

A 50-year-old male professional noodle maker with an allergy to soba (buckwheat noodles) was admitted to the emergency room with high fever. 2 months earlier he had a mild stiff shoulder for a week. At the time of admission, the patient had a temperature of 38.8°C and oliguria. Laboratory findings showed a white-blood-cell count of 18 800 per μL (normal value 4400–11 000 per μL), C-reactive protein 16.3 mg/dL (<0.3 mg/dL), procalcitonin 2.44 $\mu\text{g/L}$ (<0.1 $\mu\text{g/L}$), creatinine 147.5 $\mu\text{mol/L}$ (60–110 $\mu\text{mol/L}$), plasma glucose 56.4 mmol/L (5.6 mmol/L), HbA_{1c} 14.7% (<5.7%), and 100 urinary leucocytes cells per high-power field without red blood cells and sediment.

Contrast-enhanced CT showed wedge-shaped mass-like hypodense lesions, resembling acute focal bacterial nephritis (AFBN; figure part A). Meticillin-sensitive *Staphylococcus aureus* (MSSA), common in skin infections, was found in blood (arterial and venous) and urine samples.

Levofloxacin 500 mg per day and intravenous insulin were started, leading to substantial clinical improvement. However, 7 days after starting levofloxacin treatment, the patient developed rapidly worsening pain of the left acromioclavicular joint with high fever. A subsequent CT

scan showed extensive masses in the deltoid muscle and lateral humeral condyle that extended downwards into the brachioradialis muscle (figure part B). Cultured glenohumeral joint fluid repeatedly grew MSSA. The results of a gallium-67 scan showed diffuse uptake at the glenohumeral joint to the lateral humerus (figure part C). The antibiotics were changed to cefazolin 6 g/day continuously for 6 weeks for osteomyelitis according to WHO guidelines. He recovered during the 6 weeks and all infected lesions healed. Although MSSA is a common pathogen of bacterial soft-tissue infection, there was no remarkable skin manifestation. Therefore, hypersensitive reaction to soba and diabetes might be relevant in the pathogenesis of blood-borne AFBN. The patient with skin allergy had enhanced colonisation of *S aureus*, increasing production of potent exotoxin; toxin might act as a risk for blood-borne AFBN adding to diabetes.

Contributors

RI and HU did the clinical assessment and investigation. HU, SU, and KK prepared the draft of the report and TH revised the report. RI and HU both contributed equally to the report. NK contributed to background research for the report. Written consent to publish was obtained.

Declaration of interests

We declare no competing interests.

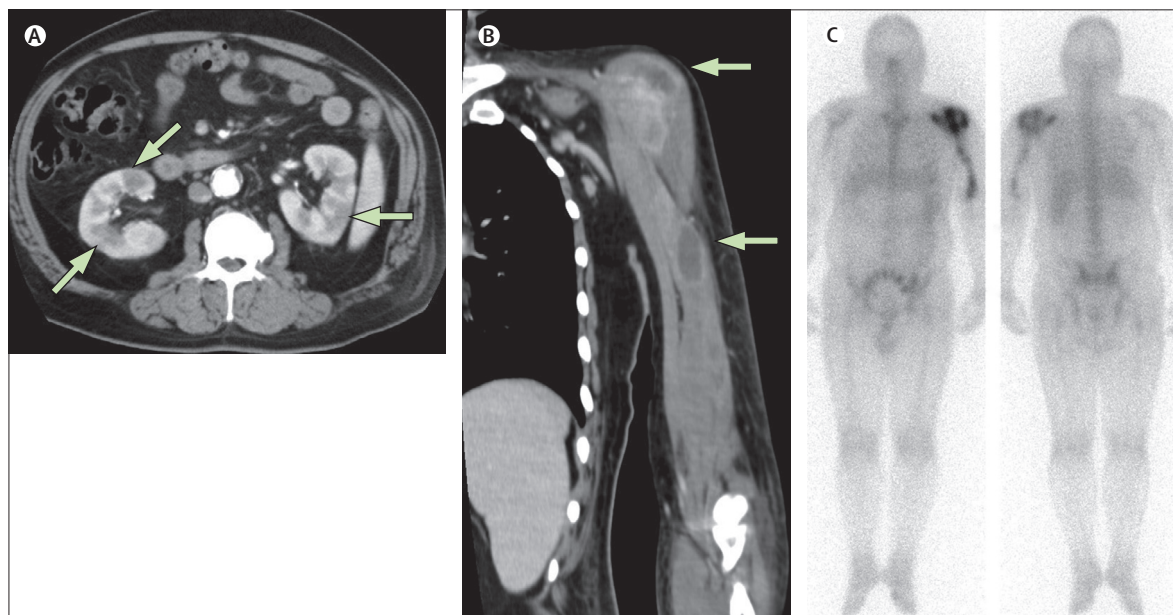


Figure: CT scan of the acute focal bacterial nephritis (A), lateral humeral condylar abscess (B), and gallium-67 scan showing diffuse uptake at the glenohumeral joint of the lateral humerus (C)