CEN Case Reports (2022) 11:159–160
https://doi.org/10.1007/s13730-021-00615-9

LETTER TO THE EDITOR

Spontaneous regression of arterial pseudoaneurysm after kidney biopsy

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Received: 29 March 2021 / Accepted: 15 June 2021 / Published online: 18 June 2021

Keywords Arterial pseudoaneurysm · Spontaneous regression · Kidney biopsy

Dear Editor,

Kidney biopsy is a routine workup for nephrologists, although it rarely causes major complications. Arterial pseudoaneurysm is a rare but severe and potentially fatal complication and is followed by massive bleeding after rupture [1, 2]. There have been few reports of arterial pseudoaneurysm to date; nevertheless, most have been treated with trans-catheter arterial embolization (TAE). However, TAE is associated with some complications; hence, it should be avoided if a patient is asymptomatic or has a small-sized pseudoaneurysm. Here, we report the case of an arterial pseudoaneurysm discovered accidentally through close examination after a kidney biopsy that regressed spontaneously after 2 weeks.

A kidney biopsy was performed in a 9-year-old male patient to evaluate the nephrotoxicity of cyclosporine, which was prescribed for a frequently relapsing nephrotic syndrome. Although the puncture for kidney biopsy was performed only once, the postoperative hemoglobin (Hb) levels decreased by approximately 3.7 g/dL within 12 h, and a substantial hematoma was observed on ultrasound (US). On the 5th day after the biopsy, abdominal pain and fever developed with high C-reactive protein levels (CRP = 13.85 mg/dL) and continued for 4 days. Contrast dynamic abdominal computed tomography (CT) revealed a round enhanced nodule in the middle pole of the kidney; this was continuous with artery lacking of communication to vein, and was seen in the early phase and little residual in the late phase (Fig. 1A). Therefore, we diagnosed the patient with arterial pseudoaneurysm.

The radiologists strongly recommended immediate TAE; however, the fever and high CRP had been resolved, and kidney dysfunction and hypertension were not observed, implying that the patient was completely asymptomatic. Therefore, we decided to continue hospitalizing him and carefully following him up under electrocardiogram monitoring with staying at rest. A re-examination of contrast abdominal CT on the 23rd day of admission demonstrated that the pseudoaneurysm had completely disappeared and may have become thrombotic (Fig. 1B). Therefore, he was discharged on the 25th day of admission.

Generally, in pseudoaneurysms, the arterial wall is partially broken due to external forces such as trauma. Bleeding is usually stopped by a tamponade effect from the surrounding tissues, and then the hematoma is dissolved several days to several weeks later [3]. Evidently, bleeding occurs easily due to a vulnerable arterial wall, and such cases become fatal [2]. TAE is generally recommended, even if patients have symptoms, such as low back pain, kidney dysfunction, and renovascular hypertension, considering a second rupture, and there have been some reports of TAE for asymptomatic cases [4, 5]. However, it was observed that there are cases, such as the current one, in which the patient naturally improves with only follow-up. The needle used for kidney biopsy is thin, and the trauma might be mild. Further studies are needed to establish standard therapeutic indication criteria for pseudoaneurysms after kidney biopsy.

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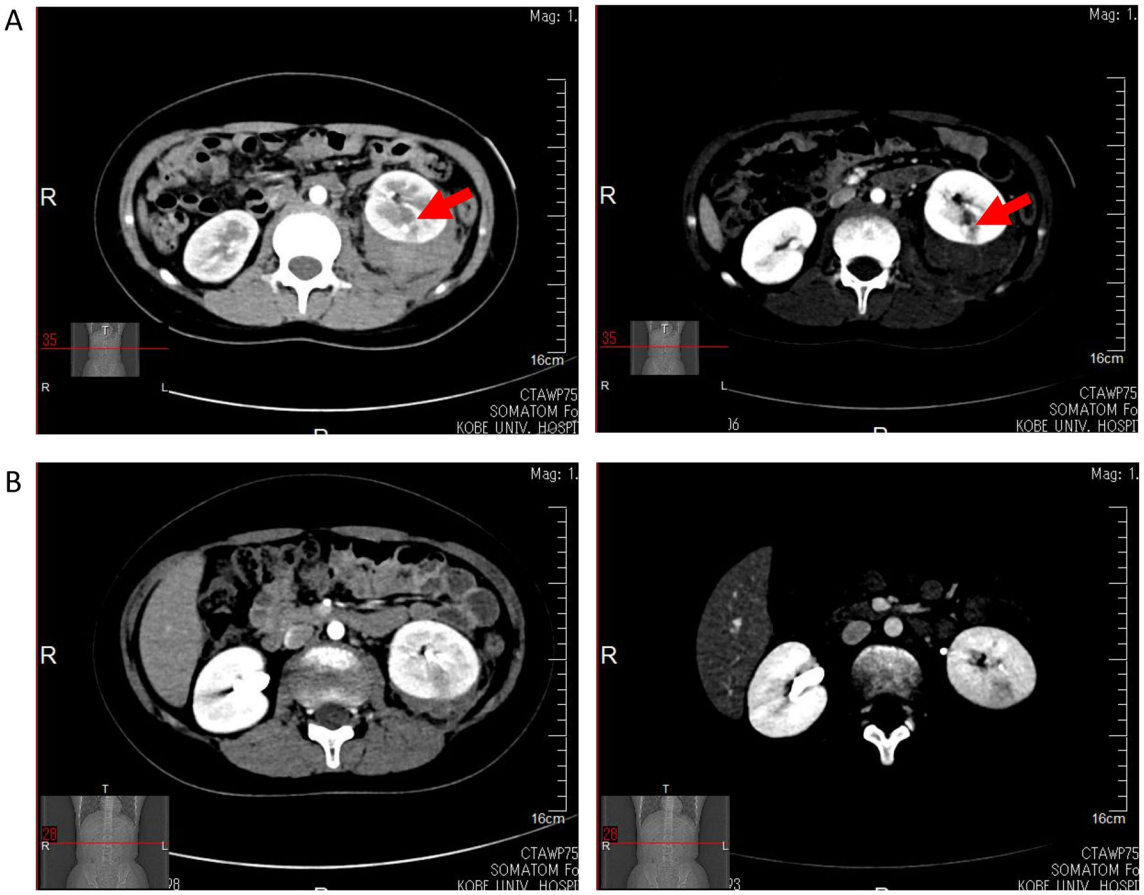

Fig. 1 **A** Images of contrast dynamic abdominal CT (left: early phase, right: late phase) on diagnosis. Arrow indicates pseudoaneurysm. **B** Images from follow-up contrast dynamic abdominal CT (left: early phase, right: late phase)

Declarations

Conflict of interest All the authors have declared no competing interest.

Informed consent Written informed consent for submitting this case report was obtained by the patient.

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