normal [6]. The disease is usually diagnosed because of its complications (renal calculi and UTIs) or is discovered accidentally [3]. In the differential diagnosis, causes of obstructive uropathy and vesicoureteral reflux should be considered and excluded [5]. The diagnosis lies on the typical radiographic findings of the IVU [6] and renal ultrasonogram or CT scan, coupled to the normal wash-out pattern in renal scintigraphy [4–6].

Fluid intake should be advised and close follow-up with routine blood tests, urinalysis and annual IVU are all that are required [3]. Surgical intervention should be reserved for cases of confirmed nephrolithiasis and recurrent or relapsing UTIs.

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Iatrogenic pseudo-aneurysm of the subclavian artery and dissection of the aorta, secondary to central venous line insertion: a treatment dilemma!

Sir,

Pseudo-aneurysm formation of the left subclavian artery is rare in patients undergoing central venepuncture [1]. We report a case of iatrogenic pseudo-aneurysm of the subclavian artery with an associated dissection of the thoraco-abdominal aorta, secondary to previous central venous line placement.

Case. A 41-year-old lady with IgA nephropathy started haemodialysis in 1990 and received a renal transplant in 1991. She had multiple insertions of central venous catheters in both sides of her neck for haemodialysis and postoperative CVP monitoring. Her hypertension control ranged from 120/70 to 190/120. In 2001, she had a routine abdominal ultrasound scan for her hepatitis B. An incidental dissecting aneurysm of the lower thoracic and abdominal aorta was identified. A subsequent CT scan of her thorax demonstrated a left subclavian artery pseudo-aneurysm (Figure 1) and a dissection of the thoracic and abdominal aorta originating at the left subclavian artery origin.

Comment. A rare, but potentially serious, complication of dialysis line insertion is the development of pseudo-aneurysm of the subclavian artery [2]. In our patient, the subclavian pseudo-aneurysm was identified incidentally. We suggest that the dissection of the thoracic aorta and left subclavian artery pseudo-aneurysm were a complication of the insertion of a previous left neckline. Following literature review, to our knowledge, this combination of complications has not been reported before. Our hypothesis is that, due to the close proximity of the left innominate vein and subclavian vein to the left subclavian artery and the aortic arch, it is likely that in our patient, the introducer needle, guide wire or dilator used in the insertion of a dialysis neckline injured the subclavian artery creating the pseudo-aneurysm and also injured the intima of the aortic arch at the origin of the left subclavian artery leading to dissection. This, fuelled by the severe hypertension, could have propagated the dissection of the aorta to the level of the common iliac artery.

In conclusion, this is the first reported case of subclavian artery pseudo-aneurysm to the vertebral artery origin (Figure 2), attempts at stenting the subclavian artery [3] could potentially occlude the left vertebral artery or lead to vertebral embolization. There is also a recent report of a successful treatment of iatrogenic subclavian artery pseudo-aneurysm with percutaneous thrombin injection [1]. Previous studies have shown that attempts at treating pseudo-aneurysms with necks greater than 8 mm by thrombin injection have a high chance of failure [4].

In conclusion, this is the first reported case of subclavian artery pseudo-aneurysm plus dissection of the thoraco-abdominal aorta as a complication of central venous cannulation. There is a high morbidity associated with both these complications and their management is not well defined in the literature.

Conflict of interest statement. None declared.
Polyclonal activation of an IgA subclass against *Staphylococcus aureus* cell membrane antigen in post-methicillin-resistant *S. aureus* infection glomerulonephritis

Sir,

We have previously reported cases of glomerulonephritis (GN) following methicillin-resistant *Staphylococcus aureus* (MRSA) infection (post-MRSA infection GN). Renal histological findings based on immunofluorescence examination showed IgA, IgG and C3 deposits in both the mesangium and peripheral capillary walls, and laboratory findings included polyclonal increases in serum IgA and IgG, with high levels of circulating immune complexes (IC) and specific T-cell receptor (TCR) Vβ+ subsets [1,2], which had many similarities with IgA nephropathy (IgAN) [3]. We hypothesized that *S. aureus* plays an important role in post-MRSA infection GN and IgAN, and also proposed *S. aureus* as one of the key pathogens of IgAN [4]. It is well known that the IgA1 isotype is predominant in the serum; however, the relationship between IgA-subclass antibodies and these pathogens has not been investigated.

In this study, we examined the titres of anti-*S. aureus* IgA antibody subclasses in the serum of patients with post-MRSA infection GN, IgAN, other forms of renal disease and normal individuals. All patients were diagnosed by renal biopsy and clinical and laboratory findings. We studied 224 patients: 25 with post-MRSA infection GN, 67 with IgAN, 116 with other types of renal disease and 16 healthy controls (with normal renal function and neither urinary nor serum abnormalities).

**Staphylococcus aureus** crude membrane antigens were prepared for enzyme-linked immunosorbent assay (ELISA) by the absorption of protein A with human IgG-coated Sepharose 4B, as reported previously [4]. Titres of IgA subclass (IgA1 and IgA2) antibodies against *S. aureus* in serum from patients with post-MRSA infection GN, IgAN, other forms of renal disease and normal individuals were measured by ELISA using mouse anti-human IgA1 (Nordic Immunological Laboratories, Tilburg, the Netherlands) or mouse anti-human IgA2 (Nordic Immunological Laboratories) as the primary antibody and horseradish peroxidase-conjugated rabbit anti-mouse IgG (Invitrogen Co. Ltd, Carlsbad, CA, USA) as the secondary antibody. Statistical analysis of the serum titres of IgA subclasses against *S. aureus* was performed by analysis of variance (ANOVA) with Fisher’s test.

**Fig. 1.** CT scan showing pseudo-aneurysm of left subclavian artery (arrow).

**Fig. 2.** CT Scan showing the proximity of the vertebral artery (white arrow) to the left subclavian pseudo-aneurysm (black arrow).


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