CLINICAL IMAGE

Severe course of type IV Takayasu disease during treatment with etanercept

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Takayasu arteritis (TAK) is a rare disease (ORPHA: 3287).[1] Despite its well-known clinical characteristics, its etiology remains unknown and shares an inflammatory and genetic background.

An 18-year-old woman was referred to our department for treatment of arterial hypertension secondary to renal artery stenosis. Earlier, at the age of 8 years, she was treated ineffectively with retinoids and cyclosporin A for psoriasis. Remission was achieved with etanercept when the patient was 13–14 years old. Etanercept was reintroduced at the age of 16 years. During routine check-up 2 years later, inflammatory markers were elevated (eg, C-reactive protein, 28 mg/l; reference range <30 mg/l), but there was no exacerbation of psoriasis. One month later, the patient reported back pain that was not relieved by nonsteroidal anti-inflammatory drugs. In addition, the patient reported dyspnea on exertion (New York Heart Association class II). She had temporary anosmia and ageusia during COVID-19.

After 3 months of persistent back pain, magnetic resonance imaging revealed narrowing of the middle section of the abdominal aorta of up to 6 mm at the length of 12 cm, with wall thickening of up to 5 mm (FIGURE 1A). The patient was admitted to a pediatric cardiology department. Ultrasound examination confirmed these findings (FIGURE 1B), and also showed left renal artery stenosis (FIGURE 1C). Computed tomography angiography visualized the abdominal aorta stenosis of up to 6 mm at the level of and below the renal arteries. Moreover, both right and left renal arteries were inflamed and had critically narrowed walls (FIGURE 1D–1F). Echocardiography revealed reduced left ventricular ejection fraction (LVEF) at 31%. Finally, the diagnosis of middle aortic syndrome in the course of type IV TAK, complicated by severe hypertension and heart failure was made. The patient met the TAK criteria of the American College of Rheumatology / European League Against Rheumatism Classification,[2] and obtained 10 points on this score (Supplementary material).

Etanercept therapy was discontinued. Furosemide, spironolactone, metoprolol, and amlodipine were initiated. Prednisone (40 mg/day) and methotrexate (25 mg/week) were started for TAK. The treatment resulted in normalization of blood pressure and LVEF and resolution of the signs and symptoms of heart failure. Thereafter, the patient was referred to our angiology department, where angioplasty of the upper left renal artery was performed because of scintigraphy-detected hypoperfusion in the left kidney. Subsequently, the inflammatory markers normalized, and ultrasound showed complete resolution of the wall thickening in the aorta and renal arteries. The therapy with prednisone and methotrexate was continued, and hypertension was managed with only metoprolol and spironolactone. When the patient was 20 years old, she developed bleeding from the lower gastrointestinal tract, which, based on histopathologic examination of the large intestine was diagnosed as ulcerative colitis.

In the current case report, we present a severe course[3] of type IV TAK in a patient predisposed to autoimmune reactions, including a SARS-CoV-2 infection[4] during ongoing treatment with etanercept; this was inexplicable because of the proven therapeutic efficacy of tumor necrosis factor α inhibitors in TAK.[5] There had been limited reports on patients predisposed to autoimmune reactions in whom the use of etanercept possibly provoked TAK.[6]

SUPPLEMENTARY MATERIAL

Supplementary material is available at www.mp.pl/paim.

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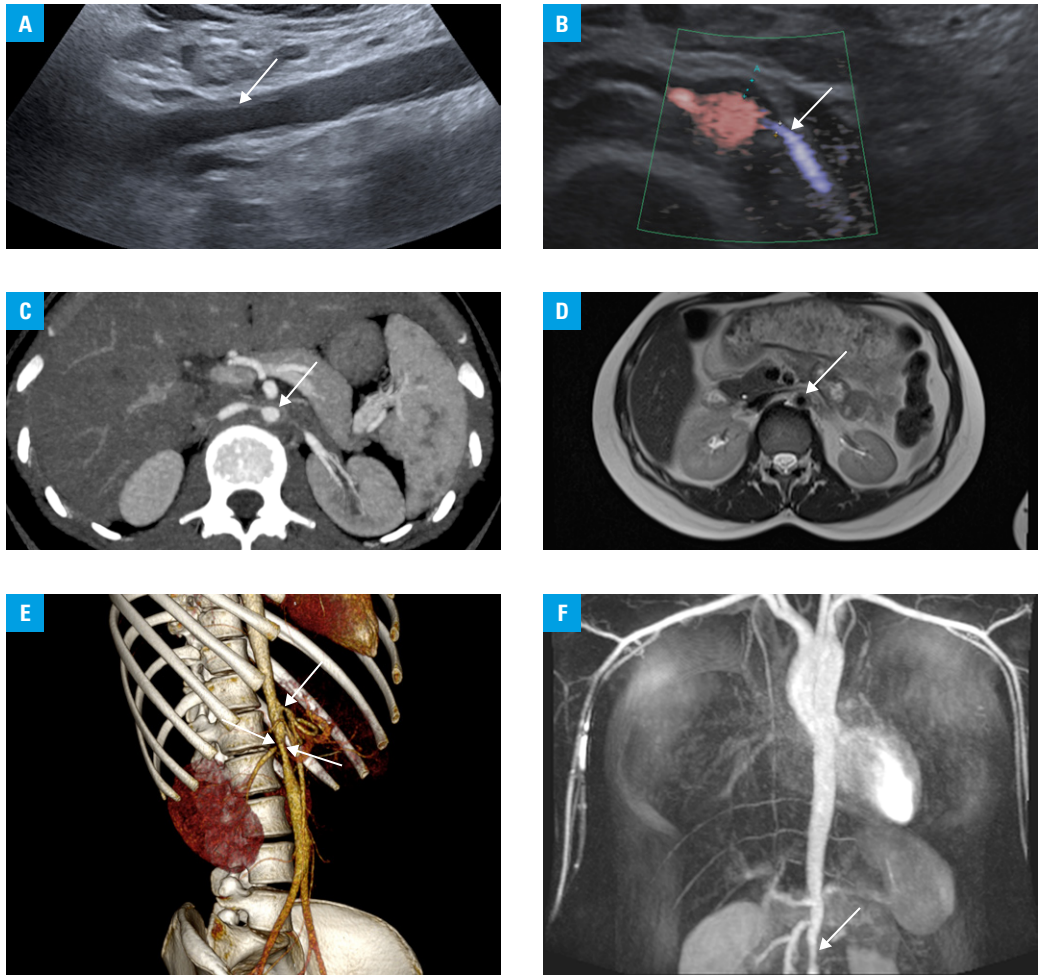

FIGURE 1 **A** – abdominal ultrasound showing thickening of the intima (arrow) on a longitudinal section of the abdominal aorta; **B** – color Doppler ultrasound on a cross-section of the abdominal aorta at the level of the left renal artery ostium, showing thickening of the aortic wall and narrowing of the initial section of the left renal artery (arrow); **C** – contrast-enhanced computed tomography (CT) on a cross-section at the level of the renal artery origin, showing wall thickening and a narrow internal lumen of the abdominal aorta (arrow); **D** – T2 HASTE sequence magnetic resonance (MR) imaging on a cross-section at the level of the left renal artery origin, showing thickening of the abdominal aortic wall and a narrow internal lumen (arrow); **E** – contrast-enhanced CT with spatial reconstruction of the abdominal aorta showing narrowing (arrows) of the aortic lumen, celiac trunk, and right renal artery; **F** – angio-MR (MIP, COR) images showing normal aortic arch and its branches, and narrowing of the abdominal aorta at the level of the epigastrium (arrow)

ARTICLE INFORMATION

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