A 64-year-old woman with multiple system atrophy presented with acute severe dyspnoea. She was bedridden for 4 years because of progressive cerebellar ataxia, parkinsonism and autonomic failure, and had respiratory disturbance. She had undergone tracheostomy 3 years earlier and had recently experienced several episodes of transient dyspnoea. Passing a suction catheter through her tracheostomy tube was difficult. A CT scan revealed that the curvature of the tracheostomy tube did not align with her trachea. The orifice of the tube was partly obstructed by the anterior wall of trachea, which was pushed by the brachiocephalic artery (figure 1A, B). Furthermore, the tip of the tube was touching the tracheal wall behind the artery (figure 1C). We replaced the tracheostomy tube with one that better matched the shape of the patient’s trachea (figure 1D, E), thus resolving her dyspnoea.

The spatial relationship between major arteries and the trachea can change in patients with multiple system atrophy who develop scoliosis and dystonic posture. In such patients, the brachiocephalic artery may push against the anterior wall of the trachea, compressing, and thus narrowing, the orifice of the tracheostomy tube and increasing the risk of tracheoarterial fistula (TAF).

Figure 1 Multiplanar reconstruction CT scan showing the relationship between the trachea, the brachiocephalic artery and the tracheostomy tube.

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