Commentary: Shaggy aorta in thoracoabdominal aortic aneurysm repair, an insidiously growing threat

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Central Message

Shaggy aorta carries high risks for organ embolization and spinal cord injury in thoracoabdominal aortic aneurysm repair.

See Article page 889.

"Shaggy" aorta is a diffuse atherosclerotic disease, first reported by Hollier and colleagues[1] in 1991. The associated spontaneous visceral embolization is common, and its mortality is high with nonoperative and operative therapies. In aging populations, this potentially fatal disease is insidiously growing.

In this issue of *The Journal of Thoracic and Cardiovascular Surgery*, Yokawa and colleagues[2] in Kobe University report their experience of open repair for thoracoabdominal aortic aneurysm (TAAA) using segmental staged aortic clamping, and evaluate the effect of shaggy aorta. They define shaggy aorta as atheroma thickness of at least 5 mm with irregular atheroma surface, seen using enhanced computed tomography. They uniquely classified 251 patients into 3 groups: dissection aneurysm, degenerative aneurysm without shaggy aorta, and degenerative aneurysm with shaggy aorta. In their TAAA repair group, the incidence of shaggy aorta was 14.3%. Even in their experienced hands, the shaggy aorta group had significantly worse mortality (33.3%) and significantly worse incidence of spinal cord injury (27.8%). The composite outcomes including acute renal failure were also worse.

Open TAAA repair has been the most extensive and challenging operation for cardiovascular surgeons for years. The Kobe University group mostly uses segmental staged aortic clamping, even with careful intraoperative epiaortic scanning. However, as they commented, deep hypothermic circulatory arrest[3,4] should be considered in higher-risk shaggy aorta patients, especially when the proximal descending aorta is involved. To minimize risks of organ embolization and spinal cord injury during the repair is especially crucial with shaggy aorta. Endovascular TAAA repair for shaggy aorta also carries the risks of diffuse organ embolization. The definition of shaggy aorta, in terms of anatomy and pathology, including ways to distinguish highest-risk regions and how best to approach them, and the possibility of other treatments need to be further examined in future. However, this report should be noted for our readers to take extreme care to evaluate such aortic disease preoperatively, as not just dissection or degenerative, but also with or without shaggy aorta, for safe choice of operative techniques.

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