

Title: Acute type A aortic dissection and cysts

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Abstract

Acute type A aortic dissection (ATAAD) is characterized by aortic wall degeneration, which may be influenced by cyst development. This study examines the relationship between the presence of renal, liver, and ovarian cysts and the extent of ascending aortic wall degeneration in ATAAD patients.

A total of 125 consecutive patients who underwent surgery for ATAAD at Tampere University Heart Hospital were included. The resected ascending aortic tissue was analyzed for 11 variables characterizing wall degeneration. Patients were grouped based on the presence (n = 49) or absence (n = 76) of cysts, and outcomes were compared over a mean follow-up of 6.5 years.

The cohort had a mean age of 65 years (SD=12). Chronic obstructive pulmonary disease was more often present in patients with cysts compared with those without (30.6% vs. 13.2%, P = 0.022, respectively). Use of a biological conduit prosthesis was more frequent among patients with cysts as compared patients without cysts (44.9% vs. 17.1%, P = 0.001), whereas aortic root-sparing procedures were performed less frequently in the cyst group (40.8% vs. 63.2%, P = 0.017). Histopathological analysis demonstrated elastic fiber thinning in patients with cysts (1.3 ± 0.8 vs. 0.9 ± 0.9 , P = 0.012, respectively). During a mean follow-up of 6.5 years, there were 57 deaths, with no statistically significant difference between the groups (log-rank P = 0.248).

These findings suggest that patients with cysts may exhibit a distinct pattern of aortic wall degeneration associated with ATAAD.