

Clinical outcome of IgG4-related abdominal aortic aneurysm: Open versus endovascular repair

Fuminori Kasashima	Department of Cardiovascular Surgery, National Hospital Organization, Kanazawa Medical Center
Satomi Kasashima	Department of Pathology and Clinical Laboratory, National Hospital Organization, Kanazawa Medical Center
Masamitsu Endou	Department of Cardiovascular Surgery, National Hospital Organization, Kanazawa Medical Center
Yasushi Matsumoto	Department of Cardiovascular Surgery, National Hospital Organization, Kanazawa Medical Center
Kengo Kawakami	Department of Cardiovascular Surgery, National Hospital Organization, Kanazawa Medical Center

Objectives:

The application of endovascular aneurysm repair (EVAR) to treat IgG4-related aortic abdominal aneurysms (IgG4-AAA) has increased gradually. EVAR appears preferable to open surgical repair (OSR) because the latter is often associated with operative complications related to fibrous adhesions to surrounding aortic tissues. However, until now, the actual clinical outcomes after surgical procedures for IgG4-AAA still remain unclear. We compared the follow-up results of EVAR and OSR for IgG4-AAA patients.

Methods & Materials:

Among a total of 21 patients with IgG4-AAA registered between January 2005 and December 2015 at our institute. Eight patients were treated with EVAR (EVAR-IgG4-AAA) and 13 were treated with OSR (OSR-IgG4-AAA). We analyzed the outcomes, focusing on changes in clinical symptoms and complications, serum IgG4 levels, periaortic fibrosis (PAF), and aneurysmal sac diameter (ASD) changes. PAF change and ASD shrinkage or expansion was considered positive if a change of 0.5 cm was detected in 6 months.

Results:

Gender ratio; median age; symptoms; and preoperative serum IgG4 levels, ASD, PAF were similar between the EVAR-IgG4-AAA and OSR-IgG4-AAA groups. No immediate surgical severe complications were detected in either group. Median follow-up period was 24 months in the EVAR-IgG4-AAA group, whereas it was 34 months in the OSR-IgG4-AAA group. After EVAR, postoperative serum IgG4 levels increased in five patients (62%). In comparison, postoperative serum IgG4 immediately decreased in all OSR-IgG4-AAA patients in one month. All five symptomatic patients improved immediately after OSR, whereas two of four symptomatic patients had persistent abdominal pain 6 months after EVAR. After a 1-year follow-up, only one patient of EVAR-IgG4-AAA had decreased PAF; in contrast, three patients showed PAF increase, and four patients showed no change. Postoperative PAF decreased in 7 patients of most OSR-IgG4-AAA 1 year after surgery. In the OSR-IgG4-AAA group, PAF increased slightly in one patient and did not change in five patients. Postoperative ASD enlargement was detected in half of EVAR-IgG4-AAA. Interestingly, all patients with postoperative ASD dilatation showed an increase in postoperative serum IgG4 levels.

Conclusions:

EVAR is a feasible treatment for AAA; however, when considering EVAR in IgG4-AAA patients, several potential problems of persistent high-level of postoperative IgG4, PAF thickening, and ASD enlargement should be taken into account. For EVAR-IgG4-AAA patients, regular monitoring of postoperative serum IgG4 levels is necessary for prompt detection of IgG4-AAA recurrence. Our results suggest that OSR is preferable for the completely recovery of IgG4-AAA.