

**Supplementary Table I.** Number of patients who met the diagnostic criteria and underwent biopsy.

Comprehensive diagnostic criteria	Relapse (n=7)	Non-relapse (n=20)
Definite diagnosis	5	17
Probable diagnosis	1	0
Possible diagnosis	1	3
Biopsy performed	6	18

**Supplementary Table II.** Re-enlarged organs in the patients with relapse.

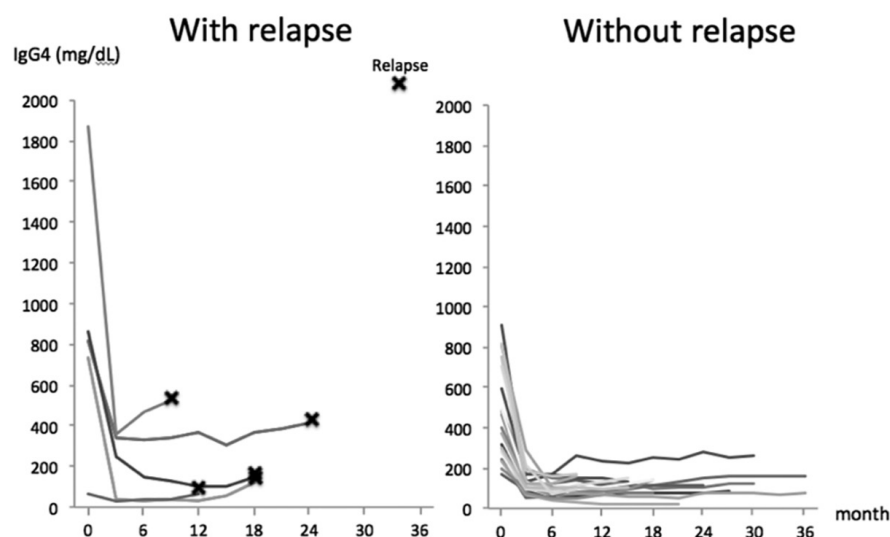
Organ involvement (n)	Patients with relapse (n=7)
Orbits and lacrimal glands	4
Salivary glands	3

**Supplementary Table III.** Baseline IgG4-RD RI and number of organ involvements when excluding lymphonodal involvement.

	Relapse (n = 7)	Non-Relapse (n = 20)	P value
Baseline IgG4-RD RI	15 (9-18)	12 (6-18)	0.116
Number of organ involvements	4 (3-5)	3 (1-5)	0.041*

**Supplementary Table IV.** Initial and re-induction treatment in the patients with relapse.

Case	Initial treatment	Treatment at relapse	Treatment after relapse
1	PSL 30 mg	None	PSL 30 mg
2	PSL 30 mg	PSL 5 mg	PSL 10 mg
3	PSL 40 mg	PSL 5 mg	PSL 15 mg
4	PSL 30 mg	None	PSL 5 mg
5	PSL 30 mg	PSL 3 mg	PSL 5 mg
6	PSL 40 mg	PSL 9 mg	PSL 15 mg
7	PSL 40 mg	PSL 8 mg	PSL 8 mg + Tacrolimus 1mg



**Supplementary Fig. 1.** Time course of chronological changes in IgG4. Available patient numbers were as follows: patients with relapse: 5, patients without relapse: 19.