Supplementary Table S1. Distribution of carotid artery wall thickness in our cohort.

	Wall thickness (mm)
Minimum	1
≤20th percentile	1.2
20–40th percentile	1.6
40–60th percentile	2
60–80th percentile	2.4
Maximum	5.6

Supplementary Table S2. Wall thickness and echogenicity scores based on our proposed score.

Grading	Wall thickness (mm)	Echo signal
Grade 0	≤1.2	High echogenicity
Grade 1	1.3–1.6	Medium echogenicity
Grade 2	1.7–2.0	Low echogenicity
Grade 3	2.1–2.4	
Grade 4	≥2.5	

Supplementary Table S3. Correlation between acute reactant proteins and ultrasonographic parameters.

	Wall thickness (mm)	Lumen diameter (mm)	Inter-adventitial diameter (mm)	ES	TS	ULTRAS
ESR (mm/h)	0.23**	0.06	0.17*	0.38**	0.29**	0.34**
CRP (mg/L)	0.22**	0.16*	0.26**	0.30**	0.31**	0.32**
Symptomatic	0.09	-0.02	0.04	0.11	0.24**	0.19*

*p<0.05; **p<0.01.
ESR: erythrocyte sedimentation rate; CRP: C-reactive protein; ES: echo score; TS: thickness score; ULTRAS: ultrasonographic activity score.

Supplementary Table S4. Characteristics of the validation group.

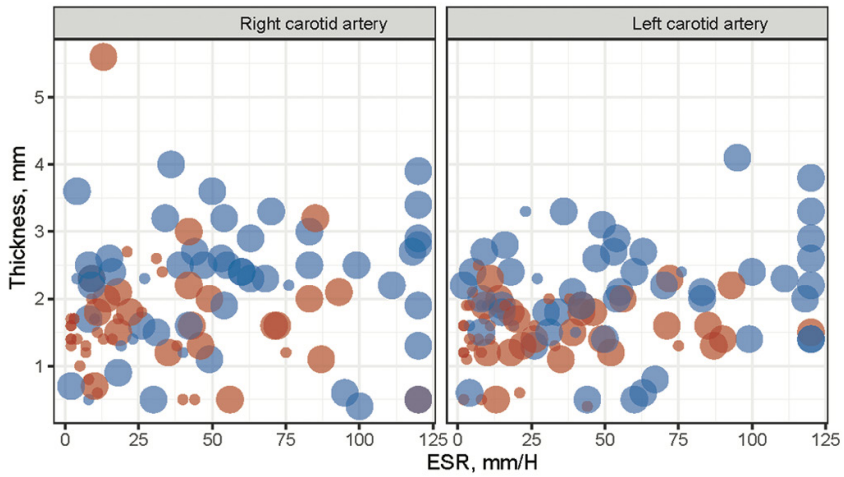
	Total patients n=30	Active n=14	Inactive n=16	p-value
Female, n (%)	25 (83.3)	12 (85.7)	13 (81.3)	
Age (year), median(q1–q3)	34 (25–44)	35 (26–47)	32 (21–42)	0.40
ESR (mm/h), median(q1–q3)	25 (13–40)	37 (29–101)	17 (5–22)	<0.01
CRP (mg/L), median (q1–q3)	1.8 (0.5–15.2)	15.3 (0.9–40.7)	0.7 (0.3–4.0)	0.03
TS, median (q1–q3), median (q1–q3)	2 (1–4)	4 (2–6)	1 (1–4)	0.05
ES, median (q1–q3)	1 (2–4)	4 (3–4)	1 (0–2)	<0.01
ULTRAS, median(q1–q3)	5 (3–7)	7 (6–10)	3 (1–6)	<0.01

ESR: erythrocyte sedimentation rate; CRP: C-reactive protein; ES: echo score; TS: thickness score; ULTRAS: ultrasonographic activity score.

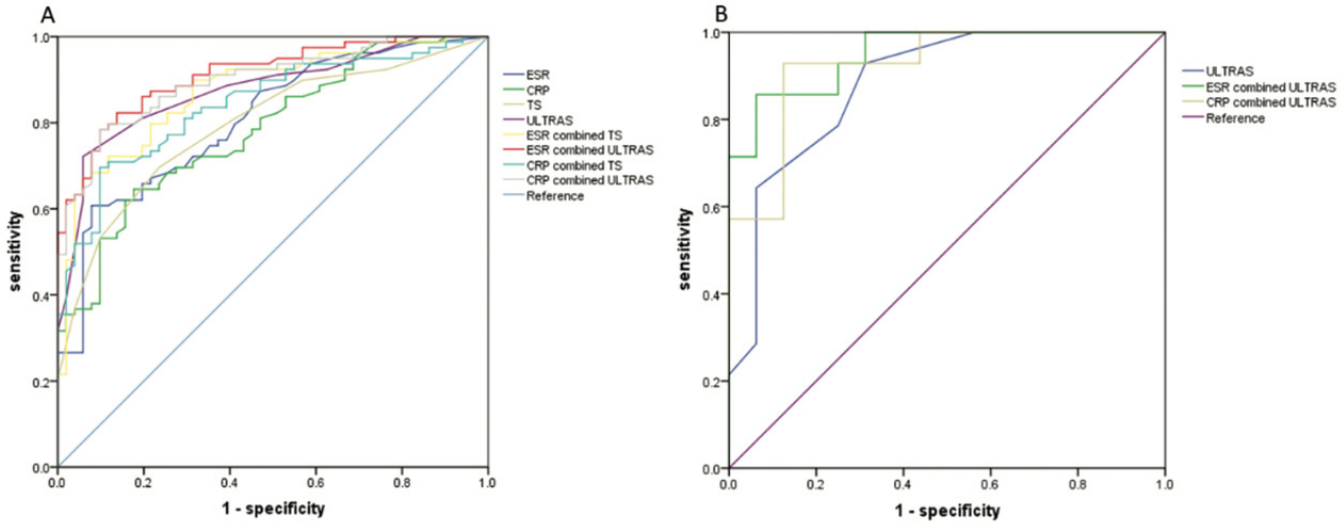
Supplementary Table S5. Improvement in baseline wall thickness and disease status at 6 months.

	Disease remission at 6 months n=83	Symptom recovery at 6 months n=56
Number (%)	79 95.2)	53 (94.6)
Wall thickness at baseline (mm), mean (SD)	2.08 (0.83)	1.96 (0.89)
Δ0–3	0.40 (0.06)	0.41 (0.09)
Δ3–6	0.10 (0.37)	0.02 (0.30)

Δ0–3: the difference between baseline and 3 months; Δ3–6: the difference between 3 and 6 months.



Supplementary Fig. S1. Scatter plot of ESR, wall thickness, and low echogenicity.
Dot size relates to disease activity (big, active disease; and small, inactive disease), while color relates to echogenicity (blue, low echogenicity; and red, medium-to-high echogenicity).



Supplementary Fig. S2. Diagnostic accuracy of ULTRAS for TAK activity.
A. ROC curve analysis of the 136 TAK patients.
The AUCs (95%CI) were 0.81(73-88), 0.79(71-86), 0.80(72-87), 0.88(82-94), 0.87(81-93), 0.91(86-96), 0.84(78-91), and 0.90(86-95) for ESR, CRP, TS, ULTRAS, ESR plus TS, ESR plus ULTRAS, CRP plus TS, and CRP plus ULTRAS, respectively.
B. ROC curve analysis of the verification group.
At an ULTRAS of 7, the sensitivity, specificity, and AUC were 79%, 94%, and 0.88, respectively. By combining ESR and ULTRAS, the sensitivity, specificity, and AUC were 93%, 81%, and 0.95, respectively. By combining CRP and ULTRAS, the sensitivity, specificity, and AUC were 91%, 87%, and 0.92, respectively.