

Evolution of macular atrophy in eyes with neovascular age-related macular degeneration compared to fellow non-neovascular eyes

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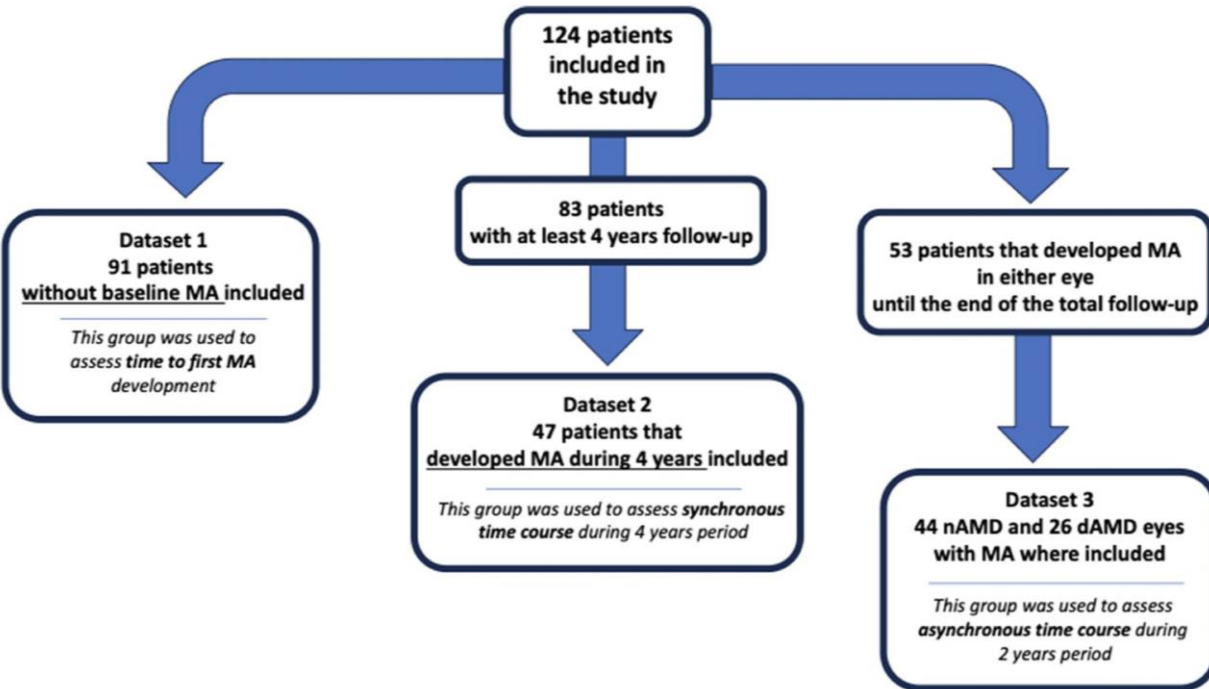
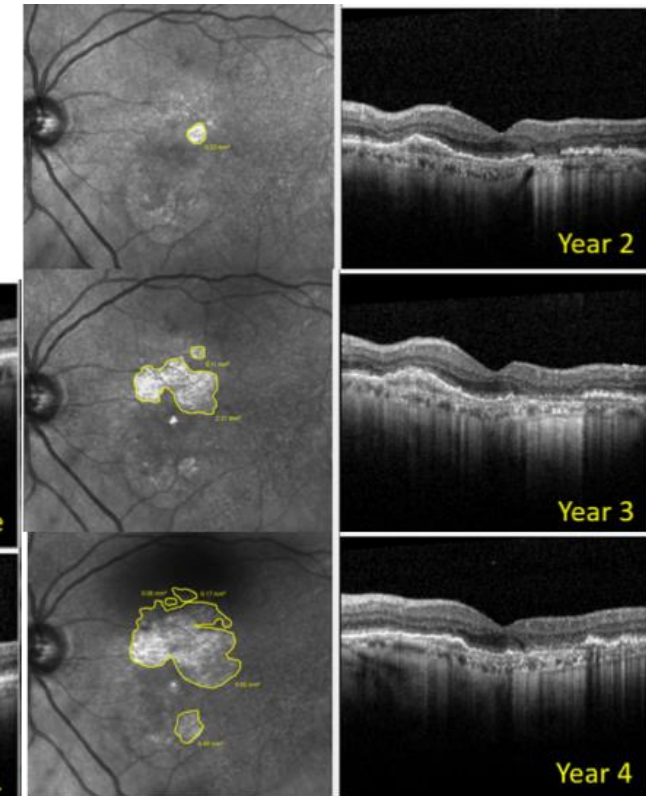
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Purpose: To evaluate the evolution of macular atrophy (MA) in patients with neovascular AMD (nAMD), compared with their fellow eyes exhibiting dry AMD (dAMD).

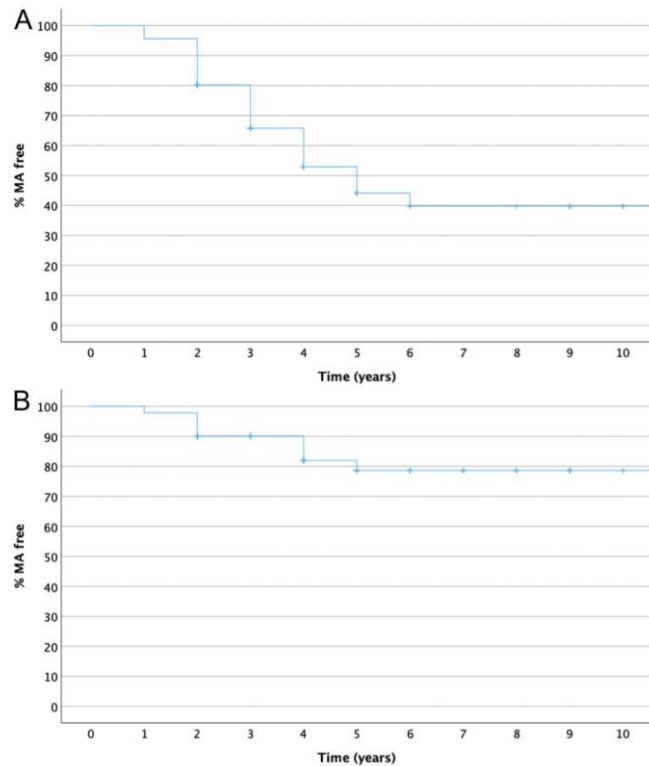
Macular atrophy progression in a patient with nAMD over a period of 4 years. Typical presentation of atrophy in near infrared (NIR) and OCT



Time effect of macular atrophy development

Dataset 1: 91 patients

Macular atrophy first detection in nAMD eyes increased significantly from year to 2 to year 6 in comparison to dAMD eyes

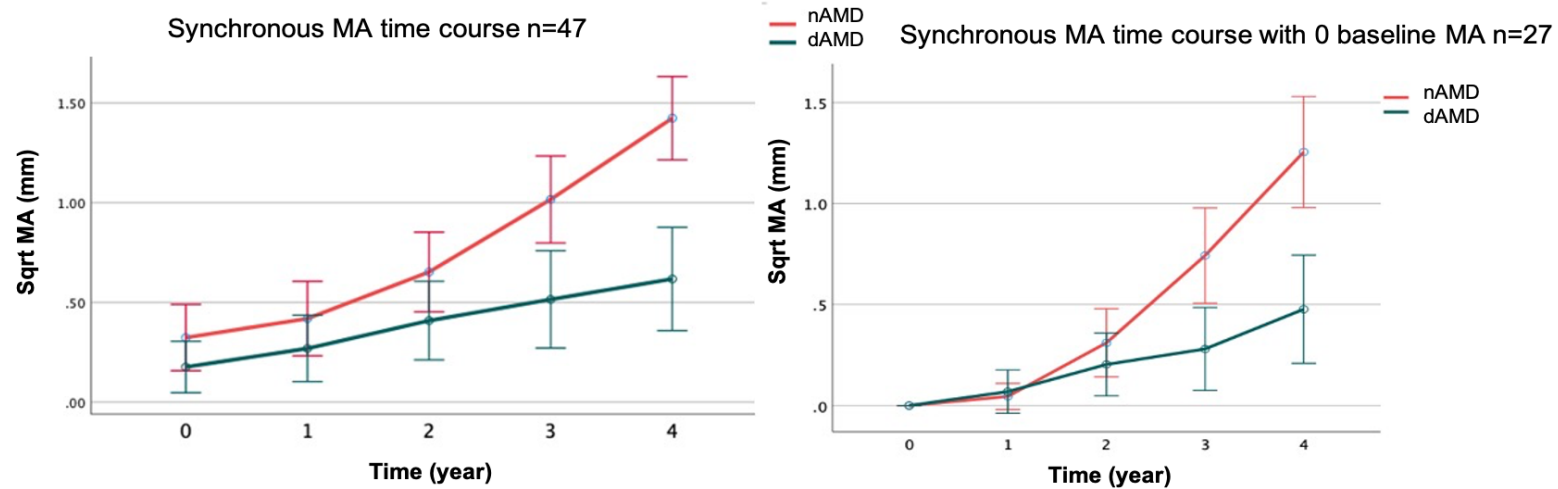


Kaplan Meyer survival curve showing the reduction by time of the percentage of nAMD eyes (A) and fellow dAMD eyes (B) without macular atrophy (MA).

Macular atrophy synchronous time course in nAMD and dAMD eyes

Dataset 2: 47 patients

The average synchronous progression rate in **nAMD** eyes was **0.275 mm/year** for the time period of follow-up, versus **0.110 mm/year** in their fellow **dAMD** eyes ($p < 0.001$) during the same period.



Synchronous time course macular atrophy increase in Sqrt MA for nAMD eyes (n=47, red lines) and fellow dAMD eyes (n=47, blue lines) over a time period of 4 years.

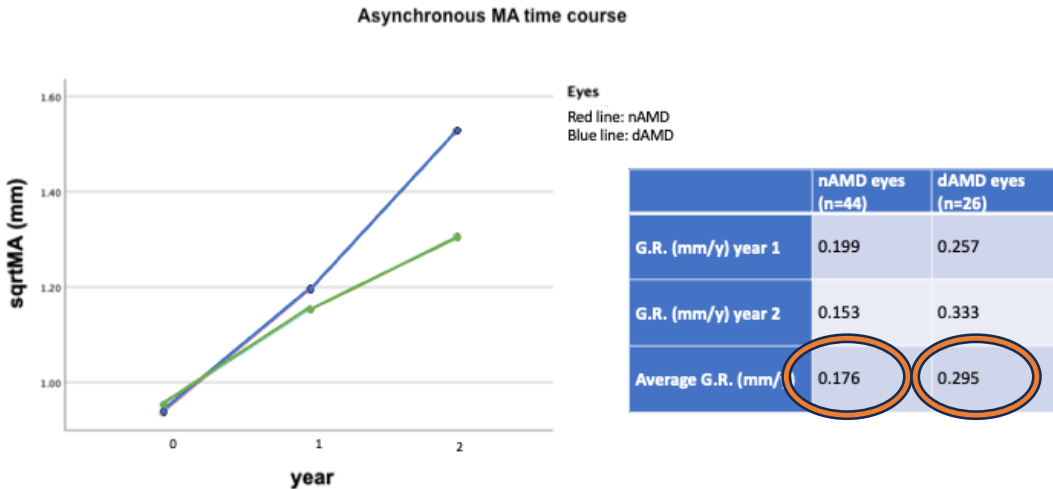
Left graph represents the synchronous atrophy time course for the total 47 patients (red line 47 nAMD eyes and green line 47 dAMD eyes).

Right graph represents the synchronous atrophy time course when baseline atrophy is zero (red line 27 nAMD eyes and green line 27 dAMD eyes)

Macular atrophy asynchronous growth rate in nAMD and dAMD eyes

Dataset 3: 44 nAMD eyes, 26 dAMD eyes

time-point 0 the first time that atrophy was detected.



Asynchronous time course macular atrophy increase in sqrt MA for nAMD eyes (n=44, green line) and dAMD eyes (n=26, blue lines) over a time period of 2 years. Table on the right shows MA growth rate when measured from time of first appearance

Paired comparison of macular atrophy asynchronous growth rate in nAMD and dAMD eyes

Dataset 3: subgroup patients with bilateral MA, n=17

A paired “within subjects” analysis was performed the average asynchronous growth rate in dAMD eyes was higher compared to nAMD eyes (**0.309mm/year vs. 0.207mm/year** respectively).

Conclusions:

- Several studies have tried to analyze the macular atrophy (MA) development in patients with either neovascular AMD (nAMD) or dry AMD (dAMD), however very few studies have compared MA development in the nAMD eye with the fellow dAMD eye of the same patient at a particular period of time.
- In patients with unilateral nAMD, MA appears more often in the nAMD eye when compared to the fellow dAMD eye in a synchronous manner over a 4-years period.
- However, when MA does develop in the fellow dAMD eyes, it enlarges faster over time compared to MA of nAMD eyes.