

Imagens em NEUROLOGIA

Redlich and the plaques in senile atrophy of the brain*Redlich e as placas na atrofia senil do cérebro*Eliasz Engelhardt¹ [<https://orcid.org/0000-0003-4168-1992>]

The main neuropathological brain signature of Alzheimer's disease comprises mainly 'amyloid plaques' (senile plaques), and 'neurofibrillary tangles', accompanied by other occurrences.¹

Emil Redlich (1866-1930), born to a Jewish family in Brünn, Moravia (today Czech Republic), was a neurologist and psychiatrist. Among his numerous studies, he published the paper "On the miliary scleroses of the cerebral cortex in the senile atrophy" (*Ueber miliare Sklerose der Hirnrinde bei seniler Atrophie*) (1898).^{2,3}

He described one patient with the diagnosis of 'senile dementia' (*senile Demenz*) who evolved to exitus. The post-mortem revealed severe brain atrophy, and "small compacted foci in the cerebral cortex" (*kleine Verdichtungsherde der Hirnrinde*), on microscopic examination. He denominated such structures initially as "miliary sclerosis" (*miliare Sklerose*), and then as 'plaques' (*Plaques*). These were of varied sizes, and found abundantly in the upper, and less in the deeper cortical layers. On higher magnification, they displayed a homogeneous, slightly grained structure, and a fine fibre felt on the periphery, gradually merging with the surrounding glia.⁴(Figure)

Additionally, he described the ganglion cells [neurons], observing that next to normal appearing, very shrunken neurons were seen, with their number clearly reduced. He cited briefly his similar clinically and pathologically second case, and a third one, a case of Prof. Heinrich Obersteiner's collection.⁴

Redlich stressed that the 'plaques' are most numerous in those parts of the cortex where the neurons show the most severe changes.⁴

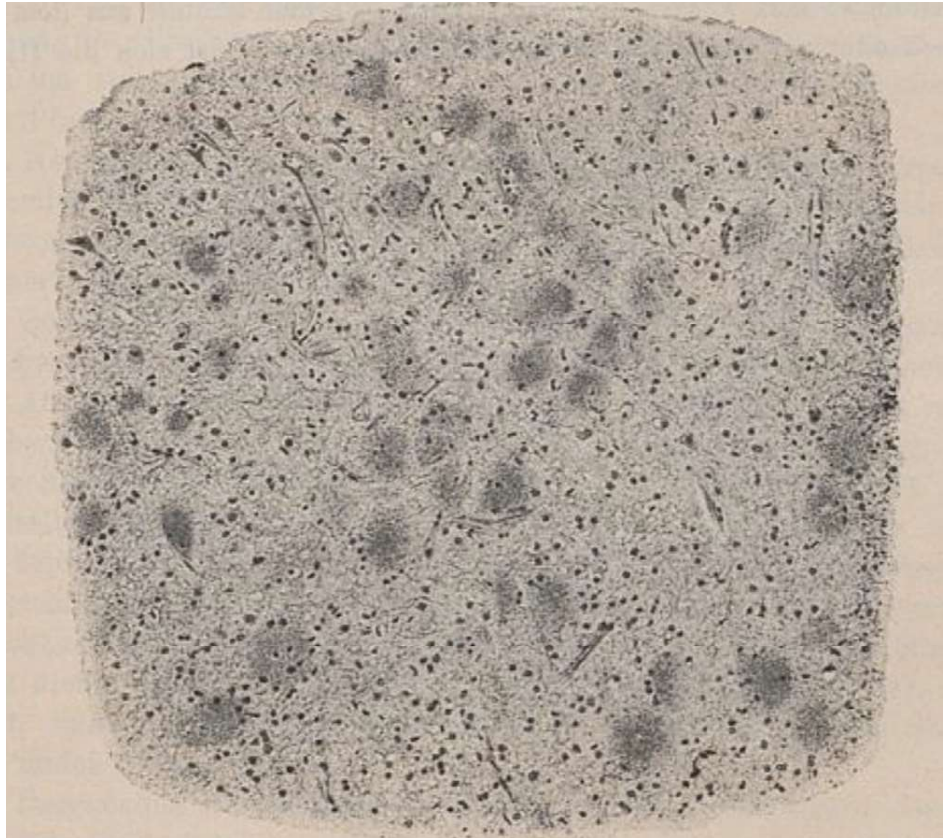


Figure. Plaques in the cerebral cortex. Section obtained from the left frontal lobe or from the 1st temporal gyrus, stained with carmine, showing intensely coloured plaques, which size varies from that of a ganglion cell to four to six times such dimension (Figure 1 from the paper). Described by Redlich as follows: "...sparse in the molecular layer, abundant in the layer of the small pyramids, also numerous in that of the large pyramids, and scarce again in the deeper part of the cortex, being absent in the medullary region..."³

- Redlich E. Ueber miliare Sklerose der Hirnrinde bei seniler Atrophie. *Jahrbücher für Psychiatric und Neurologie* 1898;17:208-216. [31-10-2023] <https://digital.zbmed.de/zbmednervpsych/periodical/pageview/7218116>

REFERENCES

- DeTure MA, Dickson DW. The neuropathological diagnosis of Alzheimer's disease. *Mol Neurodegener* 2019;14(1):32. doi:10.1186/s13024-019-0333-5
- von Economo C: Professor Emil Redlich. *Z Gesamte Neurol Psychiatr* 1930;133:325-328.
- Savvaidou NE, Triarhou LC. Sesquicentennial Tribute to Emil Redlich (1866-1930), The 'Embodied Conscience of Neurology'. *Eur Neurol* 2016;76(5-6):267-277. doi:10.1159/000452244

¹Instituto de Neurologia Deolindo Couto and Instituto de Psiquiatria, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

Conflict of interests: There are no competing interests to declare.

Funding: None

Corresponding author address: eliasz@centroin.net.br