Vortex Vein Occlusion as a Treatment for AMD: Surgical and Technical Procedure, Principle of Action, Indications and Results

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Purpose:
Report of a six year experience on this topic, including about one hundred procedures upon all various forms of AMD.

Introduction:
Vortex veins occlusion procedure was used to inflate the choriocapillaris tone, known to be deflated or with irregular flow in numerous and various works from 1995 until now (Friedman E, Ciulla TA, Mori K, Grunwald JE, Metelitsina TI). Occluding vortex veins inflates the choriocapillaris with venous blood with a high oxygen content including a part deriving from anterior ciliary circulation.
Material and methods: Vortex vein occlusion procedures were applied upon various forms of AMD patients not admitted for PDT, without other therapy than diet supplementation. Each patient was recruited after giving their informed consent. The procedure was realised on about one hundred patients from 2002 to 2008, under local ropivacaïne anaesthesia. Two inferior or 50% of vortex veins were occluded, chosen after orthostatic considerations to help choriocapillaris filling. True tying with Mersutur 5/0 was preferred to simple cut or coagulation. This was realised after venous count from the whole examination of quadrants. Operation ends by verification of the posterior pole integrity.

Results:
Although this procedure showed efficiency to dry several cases of wet forms, the best and main interesting result consist in resorption of soft drusen. Resorption was observed in many cases, at earlier stages, especially in cases with a shorter follow-up, and was detected by the fifth or sixth postoperative month. This improvement was obtained in the absence of any atrophy at this stage and appeared to continue over time. No unfavourable effect from the procedure was observed in any of our cases.

Conclusions:
Vortex vein occlusion is a reliable and reproducible procedure to induce resorption of drusen. It does not induce any complications or atrophy. The efficacy of this procedure appears to confirm the existence of a rheological disorder of the choriocapillaris at the initial stages of AMD. Longer follow-up on a larger number of cases is nevertheless required before including this procedure as a systematic treatment protocol.