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The aetiology of narrowed uterine arterioles in obstetric and gynaecological syndromes

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Altnaes-Katjavivi et al. [1] go to considerable lengths to standardise histological features in different patterns of “degenerative arteriolitis”

This histological feature indicates some degree of uterine denervation that influences a woman's capacity to achieve, and maintain, pregnancy.

Conflicts of interest

The author confirms no conflicts of interest.

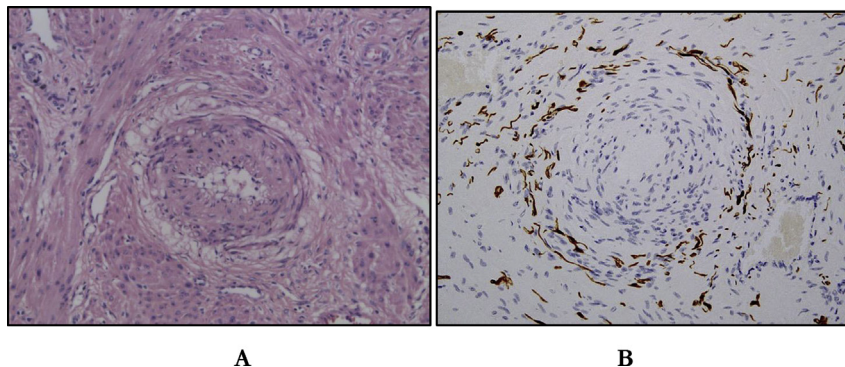


Fig. 1. A) The “obstetric lesion”. An abnormal, “halo of hyalinisation” (“empty cells”) surround an injured arteriole with thickened vessel walls caused by irregular hyperplasia of denervated tunica media and intima. The “empty cells” indicate the anatomical site of injured nerves in vessels proximal to the placental bed. Stained with haematoxylin and eosin, (pink, objective x20). B) The “gynaecological lesion”. An abnormal, “halo of injured nerves” surround an injured arteriole with thickened vessel walls caused by irregular hyperplasia of the denervated tunica media and intima. Stained with anti-S100 (brown, objective x20).

in the decidua basalis in pre-eclampsia. However they do not deal with an important histological feature that may be significant in the aetiology of many obstetric and gynaecological syndromes.

Since Dr AT Hertig's description [2] of narrowed uterine arterioles in 1945, most reports show a partial, or complete, “halo” of empty, hyalinised cells around the circumference of some of these arterioles (Fig. 1A). Such illustrations are clear in reports by Zeek & Assali, 1950; Dixon & Robertson, 1958; Brosens I, 1963 & Pijnenborg, 1972, among many others. In most gynaecological conditions there are also narrowed arterioles with a corresponding “halo” of injured nerves that result from traumatic injuries caused by constipation, childbirth and gynaecological surgery (Fig. 1B) [3]. Injuries to uterine nerves result in release of cytokines that promote regeneration of perivascular nerves with abnormal properties from the proximal stump [4]. These cytokines also cause irregular hyperplasia in the “now-denervated”, arteriolar walls. In a subsequent pregnancy the arterioles can extend to the placental bed but the nerves cannot do so. The histological result is narrowed arterioles with a complete, or incomplete, “halo of hyalinisation”.

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